

REC'D NEW YORK JUN 14 1921

## REPORT ON MACHINERY.

No. 3552

WED. 6 JUL. 1921

Date of writing Report June 1<sup>st</sup> 1921 When handed in at Local Office

Port of San Francisco, California

No. in Survey held at Oakland, Calif.

Date, First Survey Feb 10

Last Survey June 2 - 1921

Reg. Book.

(Number of Visits 17)

on the Steel Ste "ACARDO"

Gross 5803.

Net 3444.

When built 1921

Built at Oakland, Calif. By whom built Union Construction Co.

Engines made at Hamilton, Ohio By whom made Heaven, Owens, Rentschler Coy.

When made 1921

Machinery made at Portland, Oregon By whom made Willamette Iron &amp; Steel Works.

When made 1921.

Registered Horse Power

Owners Anglo-Saxon Petroleum Co. Port belonging to London

Horse Power as per Section 28 556

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes.

## GINES, &amp;c.—Description of Engines

Triple Expansion

No. of Cylinders 3

No. of Cranks 3

No. of Cylinders 27"-45"-74"

Length of Stroke 48"

Revs. per minute 80

Dia. of Screw shaft

as per rule 14.82

Material of

screw shaft steel

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

the propeller boss Yes. If the liner is in more than one length are the joints burned welded 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

Length of stern bush 5'10 1/2"

No. of Tunnel shaft

as per rule 13.4

Dia. of Crank shaft journals

as per rule 14.06

Dia. of Crank pin

Size of Crank webs

Dia. of thrust shaft under

No. of Blades 4

State whether moveable No

Total surface 81.08 sq.

No. of Feed pumps 2

Diameter of ditto 4"

Stroke 26"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 4"

Stroke 26"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

SIZES OF PUMPS 12x16x12"D

8x8x12"D

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3-4"

Boiler Room 4-4"

In Holds, &amp;c. connected to pump in forward hold

No. of Bilge Injections 1

sizes 10"

Connected to condenser, or to circulating pump C.P.

Is a separate Donkey Suction fitted in Engine room &amp; size Yes 4"

Are all the bilge suction pipes fitted with roses Yes

Are the roses in Engine room always accessible Yes

Are the sluices in 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 stokehold 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 plating of the vessel Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

Are all pipes 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 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

Is it fitted with a watertight door

worked from

## CLERS, &amp;c.—(Letter for record S) Manufacturers of Steel

Total Heating Surface of Boilers 8451 sq. Is Forced Draft fitted Yes No. and Description of Boilers 3 Scotch Marine

Working Pressure 180 lbs.

Tested by hydraulic pressure to

Date of test

No. of Certificate 216-217-219.

Can each boiler be worked separately Yes

Area of fire grate in each boiler Oil Burner

No. and Description of Safety Valves to

boiler Twin Spring loaded

Area of each valve 19.24 sq.

Pressure to which they are adjusted 180 lbs.

Are they fitted with easing gear Yes

Least 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

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

Working pressure of shell by rules

Size of manhole in shell

No. 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

No. of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Area 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

Area 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

Girders 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

Steam dome: description of joint to shell

% of strength of joint

Material

Thickness of shell plates

Material

Description of longitudinal joint

Diam. of rivet holes

No. of rivets

Working pressure of shell by rules

Crown plates

Thickness

How stayed

## 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

WS43-0110



IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

SPARE GEAR. State the articles supplied:— 1 section of crank shaft, 1 propeller shaft, 1 propeller, 1 bush, 1 ecc. shaft complete, 2 pair of connecting rod brasses, 1 pair of crank pin, 1 circulating pump rod, 1 valve spindle, 1 set of link brasses, 20 condenser tubes, 50, 1 piston rod, 1 set of safety valve springs, 1 cylinder escape valve complete, 2 connecting bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearing bolts, 1 set of bearings, 1 set of coupling bolts, 1 set of valves, springs, studs for each side including air, bilge, feed, ballast & fuel oil pumps. Large assortment of bolts, nuts, washers, rods, studs, packing, & tools. 1 set of piston rings for each main engine. 1 air pump rod, 1 bilge or feed pump plunger.

The foregoing is a correct description,

Union Construction Co. by H. J. Peakey, Pres. Manufacturer.

Dates of Survey while building { During progress of work in shops -- Feb 10, 20, Mar 8, 16, April 8, 27.  
During erection on board vessel --- Mar 8, 10, Apr. 5, 8, 21, May 4, 10, 13, 17, 27, June 2nd  
Total No. of visits 17.

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 Feb 25 Propeller Feb 25

Stern tube Feb 10 Steam pipes tested April 8, 27 Engine and boiler seatings Mar 8 Engines holding down bolts

Completion of pumping arrangements May 13 Boilers fixed April 5 Engines tried under steam

Completion of fitting sea connections Mar 10 Stern tube Mar 8 Screw shaft and propeller Mar 10

Main boiler safety valves adjusted May 27 Thickness of adjusting washers P A 1 3/8" S A 7/8" F A 7/8"

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 steel Identification Marks on Do.

Material of Steam Pipes steel Test pressure 540 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 No. If so, state name of vessel

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

Lloyd's No. 970 A.W.L. 2-25-21  
Lloyd's No. 971 A.W.L. 2-25-21

The machinery & boilers of this vessel were constructed under Special Survey materials tested to Rule requirements & the workmanship was found good. On completion the machinery was thoroughly tested under working conditions satisfactory results and in the opinion of the undersigned the machinery is eligible to be classed in the Register Book + L.M.C. 6-21, Fitted Fuel Oil 6-21, F.P. Above 150°F, Electric Light.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6.21 F.D. CL Fitted for Oil Fuel 6.21. F.P. above

2/3 B.B. fee (\$50.00) to be credited Portland. Their rpt No. 621  
2/5 Mach. fee (or \$205.60) to be credited Portland - their Boiler Rpts. No. 621.  
" " " (or \$205.60) plus \$139.15 expenses, to be credited Cleveland - their Eng. Rpt No. 147.

The amount of Entry Fee ... \$ 30.00 : When applied for,  
Special ... \$ 514.00 :  
Donkey Boiler Fee ... \$ 75.00 :  
Travelling Expenses (if any) \$ 8.55 :  
Total \$ 627.55 :  
When received, \$ 139.15

Committee's Minute New York JUN 21 1921

Assigned + L.M.C. 6.21. C.L.

MACHINERY DEPT. WRITTEN 19/7/21 dated 6/7/21

FRI AUG. 23 1921  
FRI SEP. 8 1922

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