

REPORT ON MACHINERY

No. 2525.

REC'D NEW YORK

Port of **SAN FRANCISCO,**

Received at London Office **MON 16 JUL 1917**

Date of writing Report **May 31st 1917**

Survey held at **San Francisco,**

Date, First Survey **Nov. 27/16**

Last Survey **May 22nd 1917**

on the **Steel s/s "WAR KNIGHT", Union Iron Works Hull No. 132.**

(Number of Visits **27**)

Gross **7951**
Tons
Net **6236.**

Master **Holroyd.**

Built at **San Francisco.**

By whom built **Union Iron Works Co.**

When built **1917**

Engines made at **Schenectady, NY**

By whom made **General Electric Co.**

when made **1917**

Motors made at **San Francisco.**

By whom made **Union Iron Works Co.**

when made **1917**

Registered Horse Power **-**

Owners **Cunard S.S. Co.**

Port belonging to **London.**

Shaft Horse Power at Full Power **2400**

Is Refrigerating Machinery fitted for cargo purposes **no.**

Is Electric Light fitted **yes.**

ENGINE ENGINES, &c.—Description of Engines **Curtis Geared Turbine**

No. of Turbines **one**

Diameter of Rotor Shaft Journals, H.P.

L.P.

Diameter of Pinion Shaft

Diameter of Journals

Distance between Centres of Bearings

Diameter of Pitch Circle

Diameter of Wheel Shaft

Distance between Centres of Bearings

Diameter of Pitch Circle of Wheel

of Face

Diameter of Thrust Shaft under Collars **14"**

Diameter of Tunnel Shaft as per rule **12.31**

Screw Shafts **one.**

Diameter of same

as per rule **13.17 13.78**

Diameter of Propeller **16'9"**

as fitted **13"**

Blades **4**

State whether Moveable **yes**

Total Surface **76.25 sq. ft.**

Pitch of Propeller **13'3"**

Revs. at Bottom of Groove, H.P.

L.P.

Astern

Revs. per Minute at Full Power, Turbine

L.P.

Astern

Propeller **90**

DETAILS OF BLADING.

H.P.

L.P.

ASTERN.

EXPANSION	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
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Size of Feed pumps **2-10"x7"x24"**

Size of Bilge pumps **1-12"x8"x12" 1-12"x10"x12" 1-7"x6"x10"**

Size of Bilge suction in Engine Room **3-3 1/2"**

In Holds, &c. **Fore peak 1-3 1/2" No. 1 Hold 2-3 1/2" No. 2 Hold 2-3 1/2"**

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"**

The bilge suction pipes fitted with roses **yes** Are the roses in Engine room always accessible **yes**

connections with the sea direct on the skin of the ship **yes** Are they Valves or Cocks **valves**

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**

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**

es are carried through the bunkers **none** How are they protected **-**

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **yes**

Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges **yes**

new Shaft Tunnel watertight **yes** Is it fitted with a watertight door **yes** worked from **deck.**

RS, &c.—(Letter for record **(S.)** Manufacturers of Steel **Worth Brothers, Philadelphia.**

Heating Surface of Boilers **7815** Is Forced Draft fitted **no** No. and Description of Boilers **3-multitubular, Scotch type**

g Pressure **210 lbs.** Tested by hydraulic pressure to **315 lbs.** Date of test **9.2.17** No. of Certificate **69,70,71**

boiler be worked separately **yes** Area of fire grate in each boiler **14.2.17** No. and Description of Safety Valves to

2-spring loaded Area of each valve **9.6 sq"** Pressure to which they are adjusted **210 lbs.** Are they fitted with easing gear **yes**

Distance between boilers or uptakes and bunkers or woodwork **-** Mean dia. of boilers **14'10"** Length **11'0"** Material of shell plates **steel**

1'46" Range of tensile strength **60000 to 71680** Are the shell plates welded or flanged **-** Descrip. of riveting: cir. seams **d.r.**

Tr.d.b.s. Diameter of rivet holes in long. seams **1-9/16"** Pitch of rivets **10" 9.54** Lap of plates or width of butt straps **22-3/8"**

es of strength of longitudinal joint rivets **91** Working pressure of shell by rules **228 lbs.** Size of manhole in **head**

compensating ring **flanged.** No. and Description of Furnaces in each Boiler **3-Mor.cor.** Material **steel** Outside diameter **48 1/16"**

plain part top **-** Thickness of plates **21/32"** Description of longitudinal joint **welded.** No. of strengthening rings **-**

pressure of furnace by the rules **222** Combustion chamber plates: Material **steel** Thickness: Sides **11/16"** Back **11/16"** Top **11/16"** Bottom **7/8"**

ays to ditto: Sides **8"x6 3/4"** Back **8"x7"** Top **8"x6 3/4"** If stays are fitted with nuts or riveted heads **riv. heads** Working pressure by rules **221 lbs.**

f stays **steel** Diameter at smallest part **1.76** Area supported by each stay **56 sq"** Working pressure by rules **282** End plates in steam space

steel Thickness **1 1/4"** Pitch of stays **17 1/2"x16 3/8"** How are stays secured **d. nuts** Working pressure by rules **243** Material of stays **steel**

d smallest part **8.29 sq"** Area supported by each stay **286.5** Working pressure by rules **300** Material of Front plates at bottom **steel**

13/16" Material of Lower back plate **steel** Thickness **13/16"** Greatest pitch of stays **8"x7"** Working pressure of plate by rules **308 lbs.**

f tubes **3"** Pitch of tubes **4-1/8"** Material of tube plates **steel** Thickness: Front **13/16"** Back **13/16"** Mean pitch of stays **10 5/16"**

s wide water spaces **13"** Working pressures by rules **268** Girders to Chamber tops: Material **steel** Depth and

girders at centre **12 x 1 1/2"** Length as per rule **34"** Distance apart **8"** Number and pitch of stays in each **4 x 6 3/4"**

pressure by rules **339** Steam dome: description of joint to shell **-** % of strength of joint **-** Diameter **-**

f shell plates **-** Material **-** Description of longitudinal joint **-** Diameter of rivet holes **-** Pitch of rivets **-**

pressure of shell by rules **-** Crown plates: Thickness **-** How stayed **-**

SUPERHEATER. Type U.I.WksCo. Date of Approval of Plan Type approved 1915. Tested by Hydraulic Pressure to 630 4a.
Date of Test March 17th 1917. 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" Pressure to which each is adjusted 250 lbs. Is Easing Gear fitted no
IS A DONKEY BOILER FITTED? no. If so, is a report now forwarded? -
SPARE GEAR. State the articles supplied:— 1-set Coupling bolts. 1-set Feed and Bilge pump valves.
1-tail shaft, completed with propeller nut. 1-set Air pump valves. 50-condenser tubes.
1-propeller blade. 1/2-set of valves, seats, guards, springs and studs for all pumps.
2-spare bearings, complete for high speed shaft. 2-spare bearings, complete, for low speed pin
shaft. 2-spare bearings, complete, for turbine shaft. 1-high speed pinion, together with its
shaft and couplings, complete. 4-spare superheater coils. 12-spare blanks for superheater co
1-set of piston rings for steam end of all pumps and auxiliaries.
1-low speed pinion. 1-set coupling bolts for gearing, coupling. 1-set of turbine thrust rings
10-boiler tubes. Assorted iron, bolts and nuts.
The foregoing is a correct description,
UNION IRON WORKS COMPANY,
By Leo Almes Manufacturer.
Engineer-in-Chief.

Dates of Survey while building { During progress of work in shops - - Nov. 27, Dec. 4, 15, 15, 20, 28/1916 Jan. 4, 11, 15, 31 Feb. 5, 9, 14 Mar. 14, 17
During erection on board vessel - - April 7, 9, 20 May 3, 4, 9, 11, 14, 16, 19, 20 and 22/1917.
Total No. of visits twenty-seven (27) Is the approved plan of main boiler forwarded herewith copy, y

Dates of Examination of principal parts—Casings Rotors Blading Gearing
Rotor shaft Thrust shaft Tunnel shafts Screw shaft Propeller May 14
Stern tube Dec. 15th Steam pipes tested May 9th Engine and boiler seatings April 7th Engines holding down bolts May 19th
Completion of pumping arrangements May 19th Boilers fixed - Engines tried under steam May 20th
Main boiler safety valves adjusted Thickness of adjusting washers Lock nuts.
Material and tensile strength of Rotor shaft Identification Mark on Do.
Material and tensile strength of Pinion shaft Identification Mark on Do.
Material of Wheel shaft Identification Mark on Do. LLOYDS No. 1
Material of Tunnel shafts steel Identification Marks on Do. 5-No. 1991 JD LLOYDS No. 1
Material of Steam Pipes steel Test pressure 660 lbs. Working & spare JD
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 a duplicate of a previous case no If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c. The Machinery and Boilers of this vessel
constructed under Special Survey, of materials tested to Rule requirements. Workmanship sound
throughout. On completion the Machinery was thoroughly tested under working conditions with s
factory results. In the opinion of the undersigned the Machinery is eligible to be classed in
Register Book with notation of *LMC 5,17 Fitted for oil fuel 5,17 F.P. above 150°F.
Electric Light. It is submitted that
this vessel is eligible for
THE RECORD. + LMC 5.17. 1 Geared Steam
Fitted for oil fuel 5.17. F.P. above 150°F.

The amount of Entry Fee ... \$ 15.00
Special ... £ 200.00
Sunday fee, ... 10.00
Donkey Boiler Fee ... £
Traveling Expenses (if any) £
1/3 fee, credit N.Y.

When applied for,

Jun. 1 1917

When received,

24/7/17

Committee's Minute New York JUN 12 1917

Assigned + Lmc 5.17 Fitted for oil fuel 5.17 F.P. above 150°F.
Elec Light

MACHINERY CERTIFICATE
WRITTEN 16.7.17

Lloyd's Register
Foundation