

# REPORT ON MACHINERY.

No. 548

Received at London Office.....  
 Date of Report Jan. 21 1919 When handed in at Local Office Jan 21 1919 Port of Portland, Oregon.  
 Survey held at Spokane, Wash. Date, First Survey July 30, 1918 Last Survey Dec. 23 1918  
 on the Steel S. S. "WAR COLUMN" (J. Coughlan & Sons' No. 9 Hull)  
 D. Gillies Built at Vancouver B.C. By whom built J. Coughlan & Sons  
 made at Spokane, Wash. By whom made Hallidie Co. when made 1918  
 made at Vancouver B.C. By whom made Vulcan Iron Works when made 1919.  
 Horse Power 577 Owners Imperial Munitions Board, Port belonging to London.  
 Horse Power at Full Power 2500 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

Gross 5752 1/2 Tons  
 Net 4247 1/2 Tons

Shop No. 10.  
 NE ENGINES, &c. Description of Engines Cross Compound, Geared, Parson's Type No. of Turbines 2  
 of Rotor Shaft Journals, H.P. 4" L.P. 4" Diameter of Pinion Shaft 4 7/8" and 12 5/8"  
 of Journals 5" & 10" Distance between Centres of Bearings 2'6" & 5'1 1/2" Diameter of Pitch Circle 7.75" & 13.2"  
 of Wheel Shaft 13 1/2" Distance between Centres of Bearings 5'1 1/2" Diameter of Pitch Circle of Wheel 46" & 78.8"  
 Face 15" & 14" Diameter of Thrust Shaft under Collars Diameter of Tunnel Shaft as per rule  
 as fitted  
 Crew Shafts Diameter of same as per rule Diameter of Propeller Pitch of Propeller  
 as fitted  
 blades State whether Moveable Total Surface Diameter of Rotor Drum, H.P. 13 1/2" L.P. 26" Astern 2'5" mean  
 at Bottom of Groove, H.P. L.P. Astern Revs. per Minute at Full Power, Turbine 3200 Propeller 90

## DETAILS OF BLADING.

	H. P.			L. P.			ASTERN.		
	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.
EXPANSION	16"	1'2 3/8"	7	1 7/8"	2'5 1/2"	2	H.P. & L.P. Turbines fitted with astern units impulse nozzles on a mean dia. of 2'5". H.P. 5/8" nozzle L.P. 1 1/4" nozzle, 3 rows of buckets in each case.		
"	7/8"	1'2 1/2"	7	2 1/2"	2'7"	2			
"	1 1/8"	1'3 1/2"	6	3 5/16"	2'8 5/8"	2			
"	1 7/16"	1'3 7/8"	6	4 3/8"	2'10 1/2"	2			
"	1"	1'9"	3	5"	3'0"	1			
"	1 5/16"	1'9 5/8"	3	5"	3'0"	1			
"	1 11/16"	1'10 3/8"	3	5"	3'0"	1			
"	2 1/8"	1'11 1/2"	3	5"	3'0"	1			

Size of Feed pumps  
 A.W.L.L. Size of Bilge pumps  
 Size of Bilge suction in Engine Room  
 See Portland Oregon Rpt 571

In Holds, &c.

Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine Room & size  
 the bilge suction pipes fitted with roses Are the roses in Engine room always accessible  
 connections with the sea direct on the skin of the ship Are they Valves or Cocks  
 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  
 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  
 pipes are carried through the bunkers How are they protected  
 all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times  
 the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges  
 Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

## BOILERS, &c. (Letter for record)

Manufacturers of Steel

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  
 each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to  
 boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear  
 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 rivets Working pressure of shell by rules Size of manhole in shell  
 plates  
 of compensating ring No. and Description of Furnaces in each Boiler Material Outside diameter  
 top Thickness of plates crown Description of longitudinal joint No. of strengthening rings  
 bottom  
 working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom  
 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 Steam dome: description of joint to shell % of strength of joint Diameter  
 thickness of shell plates Material Description of longitudinal joint Diameter of rivet holes Pitch of rivets  
 working pressure of shell by rules Crown plates: Thickness How stayed



**SUPERHEATER.**

Type

Date of Approval of Plan

Date of Test

Tested by Hydraulic Pressure to

Diameter of Safety Valve

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Pressure to which each is adjusted

Is Easing Gear fitted

**IS A DONKEY BOILER FITTED?**

**SPARE GEAR.** State the articles supplied:—

If so, is a report now forwarded?

The foregoing is a correct description,

*John H. Blakey*

Manufacturer.

1918.  
 Dates of Survey while building { During progress of work in shops -- July 30, Oct. 1, 7, 30 (by A. Ewing). Nov. 24. Dec. 10, 19, 23.  
 { During erection on board vessel --  
 Total No. of visits 8

Is the approved plan of main boiler forwarded herewith.

Dates of Examination of principal parts—Casings

Rotor shaft

Thrust shaft

Rotors

Blading

Gearing

Stern tube

Steam pipes tested

Tunnel shafts

Screw shaft

Propeller

Completion of pumping arrangements

Engine and boiler seatings

Engines holding down bolts

Main boiler safety valves adjusted

Boilers fixed

Engines tried under steam

Thickness of adjusting washers

Material and tensile strength of Rotor shaft **O.H. Steel 82840 H.P. 81320 L.P. Heat Nos. H.P. 1484 L.P. 4071**

Material and tensile strength of Pinion shaft

Identification Mark on Do. **H.P. 157 I**

Material of Wheel shaft

Identification Mark on Do.

Identification Mark on Do.

Material of Tunnel shafts

Identification Marks on Do.

Material of Thrust shaft

Identification Mark on Do.

Material of Steam Pipes

Material of Screw shafts

Identification Marks on Do.

Is an installation fitted for burning oil fuel

Test pressure

Have the requirements of Section 49 of the Rules been complied with

Is the flash point of the oil to be used over 150°F.

Is this machinery a duplicate of a previous case

If so, state name of vessel

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

These Turbine Engines have been constructed under Special Survey in accordance with the Rules and to the approved plans. The materials and workmanship are sound and good. The Engines have been forwarded to Vancouver, B.C. to be fitted onboard Messrs. John Coughlan & Sons (No. Vessel).

The amount of Entry Fee ... £

1/6 of Special ... \$ 40.72

Donkey Boiler Fee ... £

Seattle ... \$ 24.00

Travelling Expenses (if any)

Portland ... \$ 87.00

When applied for,

Apr. 15 1919

When received,

Apr. 18 19

Committee's Minute

FRI. AUG. 29. 1919

Assigned

see Minute on Ver. Rpt 746

*J. H. Yates*

Engineer Surveyor to Lloyd's Register of Shipping.



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