

# REPORT ON MACHINERY

No. 549  
TUE. 7-OCT. 1919

Received at London Office

REC'D NEW YORK *Sept. 12-1919*  
of writing Report 10 When handed in at Local Office 10 Port of *Portland, Oregon*

Survey held at *Spokane, Wash.* Date, First Survey *Nov. 24 '18* Last Survey *Jan 17 1919*  
Book. *Single Screw Steel S.S. War Company* (Number of Visits *6*)

on the *Single Screw Steel S.S. War Company* Tons { Gross *5752.05*  
Net *4247.40*

Builder *D.M. Beath* Built at *Vancouver* By whom built *J. Coughlan & Son* When built *1919*  
Lines made at *Spokane, Wash.* By whom made *Hallidie Co.* when made *1919*

Engines made at *Vancouver B.C.* By whom made *Vulcan Iron Works* when made *1919*  
Registered Horse Power *577* Owners *Imperial Munitions Board* Port belonging to *London*

Net Horse Power at Full Power *2800* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*  
*2500.500*

COMBINE ENGINES, &c. Description of Engines *Cross Compound, Geared Parsons Type* No. of Turbines *2*  
*Shop No. 11 H.P. only*

Diameter of Rotor Shaft Journals, H.P. *4"* L.P. *4"* Diameter of Pinion Shaft *4 1/8" + 12 5/8"*  
Diameter of Journals *5" + 10"* Distance between Centres of Bearings *2'6" + 5'1 1/2"* Diameter of Pitch Circle *4'4 1/2" + 13'2"*  
Diameter of Wheel Shaft *13 1/2"* Distance between Centres of Bearings *5'1 1/2"* Diameter of Pitch Circle of Wheels *46' + 78'8"*

Thickness of Face *15" + 14"* Diameter of Thrust Shaft under Collars \_\_\_\_\_ Diameter of Tunnel Shaft \_\_\_\_\_  
as per rule \_\_\_\_\_ as fitted \_\_\_\_\_

Number of Screw Shafts \_\_\_\_\_ Diameter of same \_\_\_\_\_ as per rule \_\_\_\_\_ as fitted \_\_\_\_\_ Diameter of Propeller \_\_\_\_\_ Pitch of Propeller \_\_\_\_\_  
Number of Blades \_\_\_\_\_ State whether Moveable \_\_\_\_\_ Total Surface \_\_\_\_\_ Diameter of Rotor Drum, H.P. *13'19"* L.P. *26"* Astern *2'5"* mean

Thickness at Bottom of Groove, H.P. \_\_\_\_\_ L.P. \_\_\_\_\_ Astern \_\_\_\_\_ Revs. per Minute at Full Power, Turbine *3200* Propeller *90*

## PARTICULARS OF BLADING.

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

\_\_\_\_\_ and size of Feed pumps

\_\_\_\_\_ size of Bilge pumps

\_\_\_\_\_ size of Bilge suction in Engine Room

\_\_\_\_\_ 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 Corks \_\_\_\_\_

\_\_\_\_\_ 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 \_\_\_\_\_

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

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

\_\_\_\_\_ the Screw Shaft Tunnel watertight \_\_\_\_\_ Is it fitted with a watertight door \_\_\_\_\_ worked from \_\_\_\_\_

\_\_\_\_\_ MILLERS, &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 \_\_\_\_\_

\_\_\_\_\_ 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 \_\_\_\_\_

\_\_\_\_\_ rivets \_\_\_\_\_ 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 \_\_\_\_\_

\_\_\_\_\_ plates \_\_\_\_\_ 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 \_\_\_\_\_

\_\_\_\_\_ bottom \_\_\_\_\_ Working pressure of furnace by the rules \_\_\_\_\_ Combustion chamber plates: Material \_\_\_\_\_ Thickness: Sides \_\_\_\_\_ Back \_\_\_\_\_ Top \_\_\_\_\_ Bottom \_\_\_\_\_

\_\_\_\_\_ thickness 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 \_\_\_\_\_

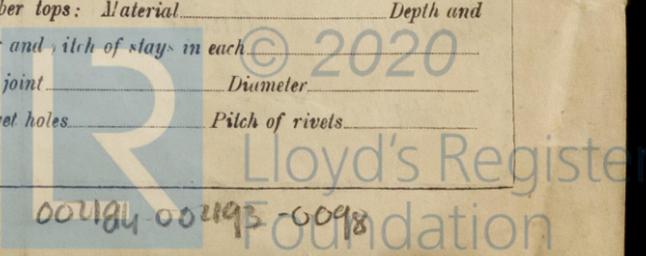
\_\_\_\_\_ thickness across wide water spaces \_\_\_\_\_ Working pressures by rules \_\_\_\_\_ Girders to Chamber tops: Material \_\_\_\_\_ Depth and \_\_\_\_\_

\_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

*Jno. J. Blakey* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *Nov. 24, Dec. 10, 19, 23, 1918. Jan. 16, 17, 1919.*  
 { During erection on board vessel --- }  
 Total No. of visits *6*

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Casings \_\_\_\_\_ Rotors \_\_\_\_\_ Blading \_\_\_\_\_ Gearing \_\_\_\_\_  
 Rotor 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 sized \_\_\_\_\_ Engines tried under steam \_\_\_\_\_  
 Main boiler safety valves adjusted \_\_\_\_\_ Thickness of adjusting washers \_\_\_\_\_  
 Material and tensile strength of <sup>HP</sup> Rotor shaft *O.H. Steel 73560 lbs per sq"* Identification Mark on Do. *164-C*  
 Material and tensile strength of <sup>LP</sup> Piston shaft *O.H. Steel 69000* Identification Mark on Do. *164-E*  
 Material of Wheel 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 \_\_\_\_\_

Is an installation fitted for burning oil fuel \_\_\_\_\_ Is the flash point of the oil to be used over 150°F. \_\_\_\_\_

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

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 Turbines 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 Turbines have been forwarded to Vancouver B.C. to be fitted onboard Messrs John Coughlan's Co. Vessel. The O.H. Steel Rotor Shafts, Impulse Wheels and Flexible Couplings were tested and certified by the American Bureau of Shipping*

The amount of Entry Fee ... £ : : When applied for, *Feb. 17 1919*  
*1/2* of Special ... \$ *89.00*  
 Donkey Boiler Fee ... £ : : When received, *June 1919*  
 Travelling Expenses (if any) £ *150.00*

*J.A. Yates*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 14 OCT. 1919

Assigned \_\_\_\_\_

Certificate (if required) to be sent to \_\_\_\_\_  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)