

# REPORT ON MACHINERY. No. 4

MON. 31 MAR. 1918

of writing Report 21<sup>st</sup> Aug. 1918 When handed in at Local Office 19 Port of Buffalo, N. Y.  
 in Survey held at Wellsville N. Y. Date, First Survey June 14<sup>th</sup> 1918 Last Survey Aug 14 1918  
 on the Turbine for J. Coughlan & Son's S.S. War Chief Hull No. 5 (Number of Visits) 1  
B. Watson Built at Vancouver B.C. By whom built J. Coughlan & Son When built 1918  
 Engines made at Wellsville N. Y. By whom made Herr Turbine Co (50011) when made 1918  
 Pumps made at Vancouver B.C. By whom made Vulcan Iron Works, L<sup>a</sup> when made 1918  
 Registered Horse Power 442 5/16 Owners Nacburn & Berrel Port belonging to Glasgow  
 Shaft Horse Power at Full Power 2650 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**TURBINE ENGINES, &c.**—Description of Engines Curtis Rotor, Double reduction Gear No. of Turbines 1  
 Diameter of Rotor Shaft Journals, H.P. 4.992" L.P. — Diameter of Pinion Shaft High speed 5.992" Low speed 9.487"  
 Diameter of Journals H.S. 5.992 L.S. 9.487" Distance between Centres of Bearings H.S. 27 1/2 L.S. 62" Diameter of Pitch Circle H.S. 7.402" L.S. 10.878"  
 Diameter of Wheel Shaft 14" Distance between Centres of Bearings L.S. 65 1/2" Diameter of Pitch Circle of Wheel H.S. 35.59 L.S. 52.11"  
 Width of Face 16" Each 18" Diameter of Thrust Shaft under Collars — Diameter of Tunnel Shaft as per rule  
 Diameter of same as fitted Diameter of Propeller as fitted Pitch of Propeller as fitted  
 Diameter of Rotor Discs 31 1/2" L.P. 31 1/2" as per rule  
 Thickness at Bottom of Groove, H.P. — L.P. — Astern — Revs. per Minute at Full Power, Turbine 3600 Propeller 100

## 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	6" 8 1"	33 1/2"	2				6" 8 1"	33 1/2"	2		
"	6" 8 1"	33 1/2"	2				6" 8 3"	35 3/8"	1		
"	2"	35 1/8"	1	✓	✓	✓					
"	3"	35 1/8"	1								
"	4"	35 5/8"	1								
"	5"	36 5/8"	1								
"	6"	39 7/8"	1								
"	6 7/8"	41 3/4"	1								

No. and size of Feed pumps —  
 No. and size of Bilge pumps —  
 No. and size of Bilge suction in Engine Room —

In Holds, &amp;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 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 —  
 That 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 —  
 Is the Screw Shaft Tunnel watertight — Is it fitted with a watertight door — worked from —

## BOILERS, &c.—(Letter for record)

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 — crown — Thickness of plates — Description of longitudinal joint — No. of strengthening rings —  
 bottom — bottom —  
 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 —  
 Pitch 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 —

W471-0067



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,

Kerr Turbine Company

Manufacturer.

8/23, '18,

Wellsville N.Y.

H. J. Hanzlik Cons. Engineer.

Dates of Survey while building

During progress of work in shops --  
During erection on board vessel --  
Total No. of visits

June 14-22. July 6-31. Aug 13-14.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Casings

June 14<sup>th</sup>

Rotors

June 14<sup>th</sup>

Blading

June 22-July 6<sup>th</sup>

Gearing July 6-31

Rotor shaft

June 14<sup>th</sup>

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 and tensile strength of Rotor shaft

O.H.S 110 000 lbs

Identification Mark on Do. 964 W.A.R

Material and tensile strength of Pinion shaft

O.H.S 104 000 lbs

Identification Mark on Do. 996 W.A.R

Material of Wheel shaft

O.H.S

Identification Mark on Do. 323 J.D.P

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

Yes

If so, state name of vessel Turbine 295000.

General Remarks

(State quality of workmanship, opinions as to class, etc. The above machinery has been constructed under Special Survey. The material and workmanship employed in its manufacture are sound and good. It has been forwarded to Vancouver, B.C. to be fitted on board J. Couglan &amp; Sons ship No 5.

The amount of Entry Fee

£

When applied for,

1/3 Special

£

70 00

19

Donkey Boiler Fee

£

When received,

Travelling Expenses (if any)

£

20/9/19

Buffalo N.Y.

38 40

Committee's Minute

TUE. 15 APR. 1919

FRI. 31 OCT. 1919

Assigned

See Ver. p. 1st to you

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Lloyd's Register  
Foundation