

REPORT ON MACHINERY.

No. 742

RECEIVED NEW YORK June 25-1919
Date of writing Report June 11 1919 When handed in at Local Office June 11 1919 Port of Vancouver, B.C.
No. in Survey held at Vancouver, B.C. Date, First Survey Nov. 8/19 Last Survey June 11 1919
Reg. Book. on the Single Screw Steel Str. Canadian Volunteer (Number of Visits 46) Gross 3188.07 Tons Net 2920.07
Master A.O. Cooper Built at Van. Vancouver By whom built Wallace Ship Yards, L^d When built 1919
Engines made at Van. Vancouver B.C. By whom made Wallace Ship Yards, L^d when made 1919
Boilers made at Vancouver, B.C. By whom made Vulcan Iron Works, L^d when made 1919
Indicated Registered Horse Power 1800. Owners Canadian Government, Department of Marine Port belonging to Montreal
Nom. Horse Power as per Section 28 375. Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple Expansion Marine No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 25" 41" 64" Length of Stroke 45" Revs. per minute 70 Dia. of Screw shaft as per rule 14.14 as fitted 14.14 Material of Steel

Is 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 in the propeller boss Yes. If the liner is in more than one length are the joints burned Yes. 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 Yes. If two liners are fitted, is the shaft lapped or protected between the liners Yes. Length of stern bush 4'-9"

Dia. of Tunnel shaft as per rule 11.85 as fitted 12.4 Dia. of Crank shaft journals as per rule 13.25 as fitted 13.25 Dia. of Crank pin 13.25 Size of Crank webs 8 3/4 x 14 1/2 Dia. of thrust shaft under collars 13.25 Dia. of screw 16.3 Pitch of Screw 17.6 No. of Blades 4 State whether moveable No Total surface 83.25

No. of Feed pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes.
No. of Bilge pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 3 off Sizes of Pumps 9 1/2 x 7 x 15 2 off 7 1/2 x 9 x 10 1 off No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 off 3" 10 off 3 1/2" In Holds, &c. 2 off 3" 20 Hold 2 off 3" 20 Hold 10 off 3 1/2" in 2.3 Hold 8 off in all.

No. of Bilge Injections 1 sizes 6" Connected to condenser, or to circulating pump Pump. Is a separate Donkey Suction fitted in Engine room & size Yes. 3 1/2"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None.

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & Cocks.

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 Main, Below

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

What pipes are carried through the bunkers None. How are they protected Yes.

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 Yes Is it fitted with a watertight door Yes worked from Main

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Carnegie Steel & Illinois Steel Co

Total Heating Surface of Boilers 5162 Is Forced Draft fitted Yes No. and Description of Boilers 2 off Single Ended Scotch

Working Pressure 180 lb. Tested by hydraulic pressure to 3000 lb. Date of test May 9/19 No. of Certificate 21

Can each boiler be worked separately Yes Area of fire grate in each boiler 66.128 No. and Description of Safety Valves to each boiler 2 off Morrison Area of each valve 9.6 Pressure to which they are adjusted 180 lb. Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 14'-0" Mean dia. of boilers 15'-6" Length 11'-6" Material of shell plates Steel

Thickness 13/8 Range of tensile strength 60,000 Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Lap Rivet long. seams Double Butt Diameter of rivet holes in long. seams 13/8 Pitch of rivets 9 3/16 Lap of plates or width of butt straps 19 7/8.

Per centages of strength of longitudinal joint rivets 87.4 plate 85 Working pressure of shell by rules 192.5 Size of manhole in shell 12 x 16

Size of compensating ring 33 x 37 1/2 x 1 7/8 No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 4'-2 1/4

Length of plain part top 7'32 bottom 7'32 Thickness of plates crown 7'32 bottom 7'32 Description of longitudinal joint No. of strengthening rings 1

Working pressure of furnace by the rules 194.5 Combustion chamber plates: Material Steel Thickness: Sides 7/8 Back 3/4 Top 7/8 Bottom 15/16

Pitch of stays to ditto: Sides 7 1/2 x 9 Back 8 1/2 x 7 1/2 Top 7 1/2 x 9 If stays are fitted with nuts or riveted heads Yes Working pressure by rules 184

Material of stays Steel Area at smallest part 1.77 Area supported by each stay 67.5 Working pressure by rules 210 End plates in steam space: Material Steel Thickness 1 1/6 Pitch of stays 15 x 18 How are stays secured Bolted Working pressure by rules 184 Material of stays Steel

Area at smallest part 5.25 Area supported by each stay 240 Working pressure by rules 202 Material of Front plates at bottom Steel

Thickness 13/16 Material of Lower back plate Steel Thickness 1 1/2 Greatest pitch of stays 13 1/2 Working pressure of plate by rules 182.5

Diameter of tubes 3" Pitch of tubes 4'25 Material of tube plates Steel Thickness: Front 13/16 Back 3/4 Mean pitch of stays 8.5.

Pitch across wide water spaces 13 1/2 Working pressures by rules 182 lb. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10' 3/4 Length as per rule 2.9 Distance apart 9" Number and pitch of stays in each 30 off 7 1/2

Working pressure by rules 226 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Date of Test Pressure to which each is adjusted Is Easing Gear fitted

Diameter of Safety Valve

100-419010-299010

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:

Two Connecting Rod Top End and Bottom End Bolts & Nuts, Two Main Bearing Bolts & Nuts, one Set of Coupling Bolts, one Set of Feed Pump Suction & Discharge valves, 3 Main Feed Check Valves, 3 Auxiliary Feed Check Valves, 24 Bolts & Nuts 6 Cylinder Cover Studs & Nuts 6 Steam Chest Cover Studs & Nuts, Iron of various Sizes, one H. P. Piston Valve, Spare Cast Iron Propeller, 12 Boiler Tubes, 24 Condenser Tubes & Ferrules, one Set of Bilge Pump Valves, one Set of Piston Springs.

The foregoing is a correct description,

Wallace Shipwrecks & Turner Manufacturer.

Dates of Survey while building { During progress of work in shops - - - - - During erection on board vessel - - - - - Total No. of visits }
Vos 8-19 Dec 5, 18, 24, 26, 30 1918, Jan. 3, 6, 7, 17, 18, 20, 22, 23
Jan 29, 30, 31 Feb 1, 3, 5, 8, 12, 17, 25, 26, Mar 3, 5, 14, 20, 26, April 2, 3, 5, 8, 17, 20
May 5, 8, 9, 16, 19, 27, 28, 29, June 11 Is the approved plan of main boiler forwarded herewith ✓
46 visits " " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 3/1/19 Slides 7/1/19 Covers 24/1/19 Pistons 29/1/19 Rods 1/2/19
Connecting rods 1/2/19 Crank shaft 13/2/19 Thrust shaft 17/2/19 Tunnel shafts 17/2/19 Screw shaft 3/4/19 Propeller 3/4/19
Stern tube 14/2/19 Steam pipes tested 16/5/19 Engine and boiler seatings 16/5/19 Engines holding down bolts 3/3/19
Completion of pumping arrangements 22/4/19 Boilers fixed 15/5/19 Engines tried under steam 27/5/19
Completion of fitting sea connections 3/4/19 Stern tube 3/4/19 Screw shaft and propeller 3/4/19
Main boiler safety valves adjusted 11/6/19 Thickness of adjusting washers 17/32 13/32 15/32 7/16
Material of Crank shaft Steel Identification Mark on Do. 1919 6. m. g.
Material of Tunnel shafts Steel Identification Marks on Do. 1919 6. m. g.
Material of Steam Pipes Steel Test pressure 570 lb. " ✓

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 duplicate of a previous case ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines & Boilers of this Vessel have been built under Special Survey and installed under Special Survey, in accordance with approved plans together with the Auxiliaries, Piping, mountings, Fittings, Sea Connections &c. The material & workmanship are both of Good Quality. On completion of the installation of the machinery installation, the vessel was tried under full Steam at Sea & found Satisfactory. Supt. Valves were floated independently.

Tail Shaft is a continuous Liner. The machinery & Boilers are eligible in my opinion to have the record L. M. C. 6-19 made in the Register Book in the case of this vessel.

The amount of Entry Fee ... \$15.00: When applied for, June 19th 1919
Special \$193.75: \$193.75
Donkey Boiler Fee ...
Travelling Expenses (if any) £ ✓: When received, 16/10/19

Committee's Minute

Assigned

MACHINERY CERTIFICATE WRITTEN

Geo. L. M. Gour Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation