

REPORT ON MACHINERY.

No. 1780

Received at London Office
Date of writing Report Feb. 8. 1920 When handed in at Local Office Feb. 10. 1920 Port of Montreal

No. in Survey held at Three Rivers R2. Date, First Survey Aug. 14. 1919. Last Survey Jan. 28 1920
Reg. Book. " (Number of Visits 24) Tons { Gross 3550
on the S. S. "CANADIAN RANCHER." Net 2158
Master ✓ Built at Three Rivers By whom built Lidewater Shipbuilders Ltd When built 1920
Engines made at Three Rivers By whom made Lidewater Shipbuilders Ltd when made 1920
Boilers made at Montreal By whom made Canadian Vickers Ltd when made 1920
Registered Horse Power 226.5 Owners Canadian Government Port belonging to Montreal
Nom. Horse Power as per Section 28 440 ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Inverted Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 25-41-68 Length of Stroke 45 Revs. per minute 13.46 Dia. of Screw shaft 13.46 as per rule 13.46 as fitted 14.00 Material of screw shaft O.H.S.
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 ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5'-2" ✓
Dia. of Tunnel shaft 12.4 as per rule 12.4 as fitted 12.45 Dia. of Crank shaft journals 13.00 as per rule 13.00 as fitted 13.25 Dia. of Crank pin 13.25 Size of Crank webs 25.5 x 8.5 Dia. of thrust shaft under collars 13.25 Dia. of screw 16-6 Pitch of Screw 15'-9" No. of Blades 4 State whether moveable No Total surface 84 ✓
No. of Feed pumps 2 ✓ Diameter of ditto 3.5 ✓ Stroke 24 ✓ Can one be overhauled while the other is at work yes ✓
No. of Bilge pumps 2 ✓ Diameter of ditto 3.5 ✓ Stroke 24 ✓ Can one be overhauled while the other is at work yes ✓
No. of Donkey Engines 3 ✓ Sizes of Pumps GEN. SERV. 9 1/2 x 4 x 18. BALLAST 10 1/2 x 4 x 18 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 4-3" 1-3 1/2" In Holds, &c. BALLAST 1-3 1/2" No. 1 TANK 1-4" No. 2 TANK 3-4" No. 3 TANK 2-3 1/2" No. 4 3-4" No. 5 1-3 1/2" AFT TANK 1-3 1/2" No. 1 HOLD 2-3" No. 2 2-3" BUNKER 2-3" No. 3 2-3" No. 4 1-3 1/2" AFT TUNNEL WELL 1-3"
No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room of size yes 1-4"
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 yes ✓
Are all connections with the sea direct on the skin of the ship yes ✓ Are they Valves or Cocks BOTH ✓
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 above ✓
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 ✓
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 ✓
Dates of examination of completion of fitting of Sea Connections 21-10-19 of Stern Tube 21-10-19 Screw shaft and Propeller 21-10-19
Is the Screw Shaft Tunnel watertight yes ✓ Is it fitted with a watertight door yes ✓ worked from MAIN DECK LEVEL ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel MIDVALE STEEL & ORDNANCE CO.
Total Heating Surface of Boilers 7275 Is Forced Draft fitted yes No. and Description of Boilers 3 SINGLE ENDED SCOTCH TYPE
Working Pressure 180 ✓ 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 ✓
Per centages of strength of longitudinal joint ✓ 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 ✓ Thickness of plates ✓ Description of longitudinal joint ✓ No. of strengthening rings ✓
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 ✓ Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓
Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

W135-0148

Manufacturers of Steel

No.	Description				
Made at	By whom made	When made	Where fixed		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with casing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long. seams		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets Plates
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— 2. Connecting Rod Top end Bolts & Nuts 2 Connecting Rod Bottom
Bolts & Nuts 2. Main Bearing Bolts & Nuts 3 Crank shaft Coupling Bolts & nuts 3 Tunnel shaft coupling
Bolts & Nut 1 each Ind pump Suction & discharge valves 1 each Bilge Suction & discharge valve 6 Cyl cover
Studs & nuts 6 piston bolts & Nuts 6 Steam Chest cover Studs & Nut 12 Junk ring Studs & Nut 1 HP Piston Valve
25 Condenser tubes
50 " Ferrule

The foregoing is a correct description,
Indewater Shipbuilders Ltd
D. G. McKean
Manager Manufacturer.

Dates of Survey while building {

 During progress of work in shops -- { 1919. Aug. 14. 23. 29. Sept. 5. 11. 20. 27. Oct. 8. 10. 21. Nov. 1.

 During erection on board vessel -- { Nov. 10. 20. 27. Dec. 7. 8. 11. 12. 13. 14. 16. 17. 22 1920 Jan. 28.

 Total No. of visits 24.

Is the approved plan of main boiler forwarded herewith No.

" " " donkey " " No.

Dates of Examination of principal parts—Cylinders 11-9-19 Slides 27-9-19 Covers 11-9-19 Pistons 27-9-19 Rods 21-10-19
Connecting rods 10-10-19 Crank shaft 8-10-19 Thrust shaft 8-10-19 Tunnel shafts 5-9-19 Screw shaft 8-10-19 Propeller 8-10-19
Stern tube 8-10-19 Steam pipes tested 20-11-19 Engine and boiler seatings 1-11-19 Engines holding down bolts 20-11-19
Completion of pumping arrangements 22-12-19 Boilers fixed 20-11-19 Engines tried under steam 14-12-19.
Main boiler safety valves adjusted 12-12-19 Thickness of adjusting washers $P. \frac{47}{64} S. \frac{33}{64}$ $P. \frac{19}{32} S. \frac{17}{32}$ $P. \frac{11}{16} S. \frac{33}{64}$
Material of Crank shaft S. ✓ Identification Mark on Do. J.M.D. Material of Thrust shaft S. ✓ Identification Mark on Do. W.V.S.
Material of Tunnel shafts S. ✓ Identification Marks on Do. W.V.S. Material of Screw shafts S. ✓ Identification Marks on Do. W.V.S.
Material of Steam Pipes Steel & 1 copper pipe Test pressure 540lbs & 360lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been constructed under special survey and in accordance with the rules. The materials and workmanship are good. They have been fitted on board together with the auxiliary machinery and tried out under full working conditions with satisfactory results.

In my opinion the machinery of this vessel is in good and efficient condition, eligible to be classed in the Register Book of the Society and to have the record of LMC 12-19.

The Forging reports cover four sets of engines at these works and will be forwarded on the completion of the fourth set.

It is submitted that
this vessel is eligible for
THE RECORD: +LM

+L.M.C. 1-20.F.D.

1149.5/3/20

The amount of Entry Fee .. £	<u>15/0</u>	:	:	When applied for,
Special .. ^{2/8} Fee .. £	<u>145/0</u>	:	:	<u>Feb. 12</u> .. 19 <u>20</u>
Donkey Boiler Fee £	✓	:	:	When received,
Travelling Expenses (if any) £	✓	:	: 19.....

W. L. Burnburne W. J. Alderson
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUE AUG. 17 1920

Assigned

+ h. m. 1:20 F. 8.

Lloyd's Register
Foundation