

No. 1696

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 1534 No. in Register Book 2744

CHISPA
EX
CHOMEAY
EX
S.S. "Canadian Freighter"

Makers of Engines The John Inglis Coy

Works No. 21100

Makers of Main Boilers Vulcan Iron Works, Ltd.

Works No. 2414

2147

Makers of Donkey Boiler

Works No.

MACHINERY.



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No.

THE BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. *153#* No. in Register Book *27#H*

Received at Head Office *11th May 1922*

Surveyor's Report on the New Engines, Boilers, and Auxiliary
Machinery of the ~~Single Triple~~ ^{Single Triple} Screw *83* "Canadian Freighter".

Official No. *150593*

Port of Registry *Vancouver, B.C.*

Registered Owners

*Canadian Government Merchant
Marmie, Ltd.*

Engines Built by

The John Inglis Coy Ltd

at

TORONTO CANADA.

Main Boilers Built by

Vulcan Iron Works Ltd

at

Vancouver, B.C.

Donkey

at

Date of Completion

Febry. 1922

First Visit

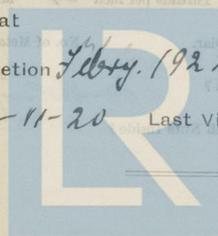
3-11-20

Last Visit

31-12-21

Total Visits

61



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RECIPROCATING ENGINES.

Works No. **21100** No. of Sets **1** Description**Triple Expansion S.G.**No. of Cylinders each Engine **3** No. of Cranks **3**Diams. of Cylinders **27"-44"-73"** Stroke **48"**Cubic feet in each L.P. Cylinder **116 cu ft.**

Are Spring-loaded Relief Valves fitted to Top and Bottom of each Cylr.?

Yes" " " each Receiver? **Yes**Type of H.P. Valves, **Piston Valve.**" 1st I.P. " **Piston Valve**

" 2nd I.P. "

" L.P. " **Slide Valve Double Ported**" Valve Gear, **Stevenson Link**" Condenser **Corflow** Cooling Surface sq. ft.Diameter of Piston Rods (plain part) **7"** Screwed part (bottom of thread) **5"**Material " **Forged Steel**Diam. of Connecting Rods (smallest part) **6 1/2"** Material **Forged Steel**" Crosshead Gudgeons **2** Length of Bearing **7 5/32** Material **do**No. of Crosshead Bolts (each) **4** Diam. over Thrd. **3** Thrds. per inch **4** Material **"**" Crank Pin " " **2** " **4** " **4** " **"**" Main Bearings **6** Lengths **13**" Bolts in each **2** Diam. over Thread **3 1/2** Threads per inch **4** Material **"**

" Holding Down Bolts, each Engine Diam. No. of Metal Chocks

Are the Engines bolted to the Tank Top or to a Built Seat?

Are the Bolts tapped through the Tank Top and fitted with Nuts Inside?

If not, how are they fitted?

Connecting Rods, Forged by **Canada Forge Welload Ont.**

Piston " " " " "

Crossheads, " " " " "

Connecting Rods, Finished by **The John Inghs Coy Toronto**

Piston " " " " "

Crossheads, " " " " "

Date of Harbour Trial **14-11-21**" Trial Trip **15-11-21**Trials run at **Vancouver, B.C.**Were the Engines tested to full power under Sea-going conditions? **Light Trial**If so, what was the I.H.P.? **2900** Revols. per min. **83**Pressure in 1st I.P. Receiver, **66** lbs., 2nd I.P., **30** lbs., L.P., **13** lbs., Vacuum, **26 1/2** ins.Speed on Trial **13.00**

If the Conditions on Trial were such that full power records were not obtained give the following estimated

data:—

Builders' estimated I.H.P. **3000**Revol. per min. **83**Estimated Speed **13.00**

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TURBINE ENGINES.

Works No.	Type of Turbines		
No. of H.P. Turbines	No. of I.P.	No. of L.P.	No. of Stern

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

Is Single or Double Reduction Gear employed?

Revs. per min. of H.P. Turbines at Full Power

" " I.P. " "

" " L.P. " "

" " 1st Reduction Shaft

" " 2nd "

" " Propeller Shaft

Total Shaft Horse Power

Date of Harbour Trial

" Trial Trip

Trials run at

Speed on Trial

Turbine Spindles forged by

" Wheels forged or cast by

Reduction Gear Shafts forged by

" Wheels forged or cast by

DESCRIPTION OF INSTALLATION.



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Except where herein otherwise stated the
Main Engines, Auxiliaries & Boilers are
duplicates of those installed on the
S/S. " Canadian Transporter."

TURBINE ENGINES

Works No. _____
 No. of H.P. Turbines _____
 No. of I.P. _____
 No. of A.S.M. _____

Are the Propeller Shafts driven direct by the Turbines or through Gearing?

Is Single or Double Reduction Gear employed?

Revolutions per Min. of H.P. Turbine at Full Power

.....

.....

Is Reduction Gear

.....

.....

.....

.....

.....

.....

.....

Turbine speed reduced by

.....

.....

.....

DESCRIPTION OF INSTALLATION

Handwritten notes:
 Used for ...
 Main engine ...
 ...
 ...

TURBO-ELECTRIC PROPELLING MACHINERY

No. of Turbo-Generator Sets _____

Capacity of each _____

Type of Turbine employed _____

Description of Generator _____

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Revolutions per Min. of Motor at Full Power

.....

No. of Motors driving Propeller Shafts

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Revolutions per min. of Generator at Full Power

.....



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TURBO-ELECTRIC PROPELLING MACHINERY.

No. of Turbo-Generating Sets Capacity of each

Type of Turbines employed

Description of Generators

No. of Motors driving Propeller Shafting

Are the Propeller Shafts driven direct by the Motors or through Gearing?

Is Single or Double Reduction Gear employed?

Description of Motors

Revs. per min. of Generators at Full Power

„ „ Motors „

„ „ Propellers „

Total Shaft Horse Power „

Date of Harbour Trial

„ Trial Trip

Trials run at

Makers of Turbines

„ Generators

„ Motors

„ Reduction Gear

Turbine Spindles forged by

„ Wheels forged or cast by

Reduction Gear Shafts forged by

„ Wheels forged or cast by



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SHAFTING.

Are the Crank Shafts Built or Solid?

Built

No. of Lengths in each

3

Angle of Cranks

120°

Diar. by Rule

Actual

14 1/2"

In Way of Webs

14 3/4"

" of Crank Pins

14 1/2"

Length between Webs

14 1/2"

Greatest Width of Crank Webs

2'-4"

Thickness

9"

Least " "

"

"

"

Diar. of Keys in Crank Webs

2 1/2" Dia

Length

6"

" Dowels in Crank Pins

1 1/4"

Length

4

Screwed or Plain

Plain

No. of Bolts each Coupling

6

Diar. at Mid Length

3 5/8"

Diar. of Pitch Circle

20 1/2"

Greatest Distance from Edge of Main Bearing to Crank Web

3/8"

Type of Thrust Blocks

Horse Shoe Type.

No. " Rings

8

Diar. of Thrust Shafts at bottom of Collars

14 1/2"

No. of Collars

8

" " Forward Coupling

14 1/2"

At Aft Coupling

14 1/2"

Diar. of Intermediate Shafting by Rule

13.09

Actual

14 1/2"

No. of Lengths

6

No. of Bolts, each Coupling

6

Diar. at Mid Length

3 5/8"

Diar. of Pitch Circle

20 1/2"

Diar. of Propeller Shafts by Rule

15.32

Actual

15 1/2"

At Couplings

Are Propeller Shafts fitted with Continuous Brass Liners?

No

Diar. over Liners

14

Length of After Bearings

60 1/2"

Of what Material are the After Bearings composed?

Highman Vitae

Are Means provided for lubricating the After Bearings with Oil?

No

" " to prevent Sea Water entering the Stern Tubes?

No

If so, what Type is adopted?

SKETCH OF CRANK SHAFT.

*Crank & Thrust Shafts Stamped**B.C.**Nº 5876**P.R.C.**10-8-21.*

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PUMPS, ETC. TO MOTOR OF SHAFT

No. of Air Pumps *1* Diar. *24"* Stroke *24"*

Worked by Main or Independent Engines? *Main Engines*

No. of Circulating Pumps *1* Diar. *12"* Stroke *Centrifugal*

Type of " *Drysdale* *Bon Accord*

Diar. of " Suction from Sea *12"*

Has each Pump a Bilge Suction with Non-return Valve? Diar.

What other Pumps can circulate through Condenser?

Driven by :- 8x8 Direct-Connected Engine

No. of Feed Pumps on Main Engine *2* Diar. *4"* Stroke *24"*

Are Spring-loaded Relief Valves fitted to each Pump? *Yes*

Can one Pump be overhauled while the others are at work? *Yes*

No. of Independent Feed Pumps Diar. Stroke

What other Pumps can feed the Boilers?

No. of Bilge Pumps on Main Engine *2* Diar. *4"* Stroke *24"*

Can one Pump be overhauled while the others are at work? *Yes*

No. of Independent Bilge Pumps *Rolls Royce 10 1/2 x 14 x 24*

What other Pumps can draw from the Bilges? *General 12 x 8 x 10*

Are all Bilge Suctions fitted with Roses? *Yes*

Are the Valves, etc., so arranged as to prevent unintentional connection between Sea and Bilges? *Yes*

Are all Sea Connections made with Valves or Cocks next the Ship's sides? *Yes*

Are they placed so as to be easily accessible? *Yes*

Are the Discharge Chests placed above or below the Deep Load Line? *Above*

Are they fitted direct to the Hull Plating and easily accessible? *Yes*

Are all Blow-off Cocks or Valves fitted with Spigots through the Hull Plating and Covering Plates or Flanges

on the Outside?

BOILERS



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Are the Water Gauges fitted direct to the Boiler Shells or mounted on Pillars?

Are the Water Gauge Pillars fitted direct to the Boiler Shells or connected by Pipes?

Are these Pipes connected to Boilers by Cocks or Valves?

Are Blow-off Cocks or Valves fitted on Boiler Shells?

No. of Strakes of Shell Plating in each Boiler

„ Plates in each Strake

Thickness of Shell Plates Approved

„ „ in Boilers

Are the Rivets Iron or Steel?

Are the Longitudinal Seams Butt or Lap Joints?

Are the Butt Straps Single or Double?

Are the Double Butt Straps of equal width?

Thickness of outside Butt Straps

„ inside „

Are Longitudinal Seams Hand or Machine Riveted?

Are they Single, Double, or Treble Riveted?

No. of Rivets in a Pitch

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Centre Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Front End Circumferential Seams

Are these Seams Hand or Machine riveted?

Diar. of Rivet Holes Pitch

No. of Rows of Rivets in Back End Circumferential Seams

Are these Seams Hand or Machine Riveted?

Diar. of Rivet Holes Pitch

Size of Manholes in Shell

Dimensions of Compensating Rings



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Thickness of End Plates in Steam Space Approved

" " " " " in Boilers

Pitch of Steam Space Stays

Diar. " " " " Approved Threads per Inch

" " " " " in Boilers

Material of " " "

How are Stays Secured?

Diar. and Thickness of Loose Washers on End Plates

" " Riveted " " "

Width " " Doubling Strips " "

Thickness of Middle Back End Plates Approved

" " " " " in Boilers

Thickness of Doublings in Wide Spaces between Fireboxes

Pitch of Stays at " " " "

Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Are Stays fitted with Nuts outside?

Thickness of Back End Plates at Bottom Approved

" " " " " in Boilers

Pitch of Stays at Wide Spaces between Fireboxes

Thickness of Doublings in " "

Thickness of Front End Plates at Bottom Approved

" " " " " in Boilers

No. of Longitudinal Stays in Spaces between Furnaces

Thickness of Front End Plates Approved

" " " " " in Boilers

Material

Thickness of Front Tube Plates Approved

" " " " " in Boilers

Pitch of Stay Tubes at Spaces between Sheets of Tubes

Thickness of Doublings in

Stay Tubes at

Are Stay Tubes fitted with Nuts at front end

Thickness of Back Tube Plates Approved

" " " " " in Boilers

Pitch of stay Tubes in Back Tube Plates

" Plain

Thickness of Stay Tubes

" Plain

External Diam. of Tubes

Material

Thickness of Furnace Plates Approved

" " " " " in Boilers

Qualities outside Diam. of Furnaces

Length between Tube Plates

Width of Combustion Chamber (front to back)

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See

Diar. of Stays Approved Threads per Inch

" " in Boilers

Material "

Thickness of Front Tube Plates Approved

" " " " in Boilers

Pitch of Stay Tubes at Spaces between Stacks of Tubes

Thickness of Doublings in " " "

" Stay Tubes at " " "

Are Stay Tubes fitted with Nuts at Front End ?

Thickness of Back Tube Plates Approved

" " " in Boilers

Pitch of Stay Tubes in Back Tube Plates

" Plain "

Thickness of Stay Tubes

" Plain "

External Diar. of Tubes

Material "

Thickness of Furnace Plates Approved

" " " in Boilers

Smallest outside Diar. of Furnaces

Length between Tube Plates

Width of Combustion Chambers (Front to Back)

Thickness of " " Tops Approved

" " " " in Boilers

Pitch of Screwed Stays in C.C. Tops

Threads per Inch

Diar. of Screwed Stays Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Sides Approved

" " in Boilers

Pitch of Screwed Stays in C.C. Sides

Threads per Inch

Diar. " Approved

" " in Boilers

Material "

Thickness of Combustion Chamber Backs Approved

" " in Boilers

Pitch of Screwed Stays in C.C. Backs

Threads per Inch

Diar. " Approved

" " in Boilers

Material "

Are all Screwed Stays fitted with Nuts inside C.C.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " Centre " "

Depth and Thickness

Material of Girders

No. of Stays in each

No. of Tubes over Boiler

Size of Tubes



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Diar. of Screwed Stays Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Sides Approved

" " " in Boilers

Pitch of Screwed Stays in C.C. Sides

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Thickness of Combustion Chamber Backs Approved

" " " in Boilers

Pitch of Screwed Stays in C.O. Backs

Diar. " " Approved Threads per Inch

" " " in Boilers

Material " "

Are all Screwed Stays fitted with Nuts inside C.O.?

Thickness of Combustion Chamber Bottoms

No. of Girders over each Wing Chamber

" " " Centre "

Depth and Thickness of Girders

Material of Girders

No. of Stays in each

No. of Tubes, each Boiler

Size of Lower Manholes

VERTICAL DONKEY BOILERS

No. of Boilers Type

Greatest Inlet Diar. Height

Height of Boiler Crown above Fire Grate

Are Boiler Crowns Flat or Dished?

Internal Radius of Dished Ends Thickness of Plates

Description of Beams in Boiler Crown

Diar. of Fire Box Plate Width of Grating

Height of Firebox Crown above Fire Grate

Are Firebox Crowns Flat or Dished?

External Radius of Dished Crowns Thickness of Plates

No. of Crown Stays Material Diar.

External Diar. of Firebox at Top Bottom Thickness of Plates

No. of Water Tubes Net Diar. Thickness

Material of Water Tubes

Size of Manholes in Shell

Dimensions of Compressing Ring

Heating Surface each Boiler Grate Surface

SUPERHEATERS

Description of Superheaters

Where Situated?

Which Boilers are connected to Superheaters?

Can Superheaters be shut off while Boilers are working?

Are Superheaters fitted with Economizers?

Date of Installation

Pressure at Inlet

Date when Safety Valves set



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MAIN STEAM PIPES.

No. of Lengths *5*
 Material *Mild Steel*
 Brazed, Welded or Seamless *Lap Welded*
 Internal Diam. *5"*
 Thickness *2.58*
 How are Flanges secured? *Expanded & beaded over*
 Date of Hydraulic Test *5-10-21*
 Test Pressure *540 lbs*

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

EVAPORATORS

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

FEED WATER HEATERS

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

FEED WATER FILTERS

No. of Lengths
 Material
 Brazed, Welded or Seamless
 Internal Diam.
 Thickness
 How are Flanges secured?
 Date of Hydraulic Test
 Test Pressure

SUPERHEATERS



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REFRIGERATORS.

No. of Machines Capacity of each
 Makers
 Description
 No. of Steam Cylinders, each Machine No. of Compressors No. of Cranks
 Particulars of Pumps in connection with Refrigerating Plant and whether worked by Refrigerating Machines
 or Independently

System of Refrigeration

,, Insulation

Are Brine and other Regulating Valves placed so as to be accessible without entering the Insulated
 Spaces?

Are all Pipes, Air Trunks, &c., well secured and protected from risk of damage?

Are all Bilge, Sounding, and Air Pipes in Insulated Spaces properly insulated?

Are Thermometer Tubes so arranged that Water cannot enter and freeze in them?

Date of Test under Working Conditions 14/12/21

RESULTS OF TRIALS.

COMPARTMENT.	Temp. at beginning of Trial.	Temp. at end of Trial.	Time required to obtain this Result.	Rise of Temp. after 24 hours.
Boat 1	54	0	2 1/2 hrs.	14
2	4	0	4	14
3	4	0	14	13
4	12	2	14	12

Articles of Spare Gear for Refrigerating Plant carried on board:—



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Positions of Auxiliary Switch Boards, with No. of Switches on each

Particulars of these Circuits	No. of Circuits to which Switches are provided on Main Switch Board	Main Switch Board	Location of Dynamo	Single or Double Wire System	Current Alternating or Continuous	Capacity	Makers of Dynamos	No. and Description of Dynamos	Installation fitted by
No. of Circuits to which Switches are provided on Main Switch Board									
Particulars of these Circuits									

Particulars of these Circuits	No. of Circuits to which Switches are provided on Main Switch Board	Main Switch Board	Location of Dynamo	Single or Double Wire System	Current Alternating or Continuous	Capacity	Makers of Dynamos	No. and Description of Dynamos	Installation fitted by
No. of Circuits to which Switches are provided on Main Switch Board									
Particulars of these Circuits									
Are Cut-outs fitted as follows?—									
On Main Switch Board, to Cables of Main Circuits									
On Aux. " " each Auxiliary Circuit									
Wherever a Cable is reduced in size									
To each Lamp Circuit									
To both Flow and Return Wires of all Circuits when the Double-Wire System is adopted									
Are the Fuses of Standard Sizes?									
Are all Switches and Cut-outs constructed of Non-inflammable Material?									
Are they placed so as to be always and easily accessible?									
Smallest Single Wire used, No. S.W.G., Largest, No. S.W.G.									
How are Conductors in Engine and Boiler Spaces protected?									
" Saloons, State Rooms, &c., " ?									
What special protection is provided in the following cases?—									
(1) Conductors exposed to Heat or Damp									
(2) " " passing through Bunkers or Cargo Spaces									
(3) " " Deck Beams or Bulkheads									

Are all Joints in Cables properly soldered and thoroughly Insulated so that the efficiency of the Cables is unimpaired?

Are all Joints in accessible positions, none being made in Bunkers or Cargo Spaces?

Are all Hull Connections for Single-Wire Systems made with Screws of large Surface?

Are the Dynamos, Motors, Main and Branch Cables, so placed that the Compasses are not injuriously affected by them?

Have Tests been made to prove that this condition has been satisfactorily fulfilled?

Has the Insulation Resistance over the whole system been tested?

What does the Resistance amount to?

Ohms.

Is the Installation supplied with a Voltmeter?

" " " an Ampere Meter?

Date of Trial of complete Installation 15-11-27

Duration of Trial 24 hours.



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GENERAL CONSTRUCTION.

Have the Machinery and Boilers been constructed in accordance with the requirements of the Rules and the

Approved Plans? *Yes*

If not, give details of the points of difference, and state when these were sanctioned by the Chief Surveyor.

Are the Materials used in the Construction of Engines and Boilers, so far as could be seen sound and trustworthy?

Is the Workmanship throughout thoroughly satisfactory?

The above correctly describes the Machinery of the S.S.

as ascertained by ^{us} _{me} from personal examination

(Main Engines)
(Auxiliaries & Boilers)

R.R. Court
W. G. Mallock

Engineer Surveyor to the British Corporation for the Survey and Registry of Shipping.

Fees—

MAIN BOILERS.

	£	s.	d.
H.S. <i>944 1/2</i> Sq. ft.	:	:	:
G.S. <i>198</i> "	:	:	:

DONKEY BOILERS.

H.S.	Sq. ft.	:	:
G.S.	"	:	:

~~\$191 00~~ \$ 191 00

ENGINES.

L.P.C. <i>116</i> Cub. ft.	:	:
----------------------------	---	---

~~\$361 00~~ \$ 316 00

Testing, &c.

£ : :

Expenses

Total ~~\$552 00~~ \$ 504 00

It is submitted that this Report be approved,

Robert King
Chief Surveyor.

Approved by the Committee for the Class of M.B.S.* on the

7th June 1952

Fees advised *14-11-21*

Fees paid *7.11-12-21*



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Secretary.

GENERAL CONSTRUCTION

Loss-

THE LOSS OF THE MAIN HOLDING...
...of the main holding...
...of the main holding...

PROPERTY HOLDING

00.191.00 00.191.00

00.316.00 00.316.00

Total 00.507.00

It is submitted that this Report be approved.

Approved by the Committee for the Class of M.B.S. on the...
[Signature]

Loss advised
Loss paid
[Signatures]



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