

fitted in No 211
see your Rpt 6310
Port Alabama
No 45366

Report on Refrigerating Machinery and Appliances.

Received at London Office

Date of writing Report **15th Aug. 19 44** When handed in at Local Office **15th Aug 44** Port of **New York**
No. in Reg. Book. Survey held at **Syracuse, N.Y.** Date: First Survey **1st June** Last Survey **14th August 19 44**
(Number of Visits **2**)

on the Refrigerating Machinery and Appliances of the **Victualling Ship** Tons (Gross - Net -)
Vessel built at **Vancouver, B.C.** By whom built **Burrard Dry Dock Co** Yard No. **212** When built **1944**
Owners **Wartime Merchant Shipping Ltd.** Port belonging to **-** Voyage **-**
Refrigerating Machinery made by **Carrier Corporation** Machine Nos. **1234/5/6** **1237/8/41** When made **1944**
Insulation fitted by **Burrard Dry Dock Co.** When fitted **1944** System of Refrigeration **Freon**
Method of cooling Cargo Chambers **Direct Expansion Batteries** Insulating Material used **Palco Wool & Slab Cork**
Number of Cargo Chambers insulated **25 & One Ice Making & One Ice Storage Chamber** Total refrigerated cargo capacity **111480** cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed **Refrigerating Engine Room Constructed in No. 3 Hold**

Refrigerating Units, No. of **Six (6)** No. of machines **Quadruple** Is each machine independent **Yes**
Total refrigeration or ice-melting capacity in tons per 24 hours **45** Are all the units connected to all the refrigerated chambers **Yes**
Compressors, driven direct ~~XXXXX~~ ~~XXXXX~~ Compressors, single or double acting **Single** If multiple effect compression **No**
Are relief valves or safety discs fitted **Yes** No. of cylinders to each unit **4** Diameter of cylinders **4 1/2"**
Diameter of piston rod **Trunk Piston** Length of stroke **3"** No. of revolutions per minute **600**
Motive Power supplied from **-** (State number of boilers, oil engines or electric generators supplying the motive power.)

Steam Engines, ~~XXXXX~~ surface condensing. No. of cylinders **1** Diameter **8"**
Length of stroke **4"** Working pressure **100 lbs.** Diameter of crank shaft journals and pins **3-3/16"**
Breadth and thickness of crank webs **6 1/4" x 2-3/8"** No. of sections in crank shaft **One** Revolutions of engines per minute **600**
Oil Engines, type **-** 2 or 4 stroke cycle **-** Single or double acting **-** B.H.P. **-**
No. of cylinders **-** Diameter **-** Length of stroke **-** Span of bearings as per Rule **-**
Maximum pressure in cylinders **-** Diameter of crank shaft journals and pins **-**
Breadth and thickness of crank webs **-** No. of sections in crank shaft **-** Revolutions of engine per minute **-**

Air Receivers:—Have they been made under survey **-** State No. of Report or Certificate **-**
Is each receiver, which can be isolated, fitted with a safety valve as per Rule **-**
Can the internal surfaces of the receivers be examined and cleaned **-** Is a drain fitted at the lowest part of each receiver **-**
No. of Receivers **-** Cubic capacity of each **-** Internal diameter **-** thickness **-**
Seamless, lap welded or riveted longitudinal joint **-** Material **-** Range of tensile strength **-** Working pressure by Rules **-**

Electric Motors, type **-** No. of **-** Rated **-** Kilowatts **-** Volts **-**
at **-** revolutions per minute. Diameter of motor shafts at bearings **-**
Reduction Gearing **-** Pitch circle diameter, pinion **-** Main wheel **-** Width of face **-**
Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, pinion **-** Main wheel **-**
Pinion shafts, diameter at bearings **-** Main wheel shaft, diameter at bearings **-**

Gas Condensers, No. of **6** Cast iron or steel casings **Steel** Cylindrical or rectangular **Cylindrical** Are safety valves fitted to casings **Yes** No. of coils in each **Shell & Tube 48 tubes** Material of ~~xxx~~ **Admiralty** Can each coil be readily shut off or disconnected **Yes**

Water Circulating Pumps, No. and size of pumps available **Fitted by Shipbuilder** how worked **-** **LIQUID RECEIVERS** No. of **6**
Gas Evaporators, No. of **-** Cast iron or steel casings **-** Pressure or gravity type **-** If pressure type, are safety valves fitted **-** No. of coils in each casing **-** Material of coils **-** Can each coil be readily shut off or disconnected **-**

Direct Expansion ~~XXXXX~~ Batteries, No. of **25** Are there two separate systems, so that one may be in use while the other is being cleared of snow **No** No. of coils in each battery **One** Material of coils **Copper Finned** Can each ~~xxx~~ be readily shut off or disconnected **Yes** Total cooling surface of battery coils **7080 sq.ft.finned** a watertight tray fitted under each battery **Yes**

Air Circulating Fans, Total No. of **9** each of **3340** **5050** cubic feet capacity, at **1510** **1480** revolutions per minute
Steam or electrically driven **Electrical** Where spare fans are supplied are these fitted in position ready for coupling up **No**

Brine Circulating Pumps, No. and size of, including the additional pump **-** how worked **-**
Brine Cooling System, closed or open **-** Are the pipes and tanks galvanised on the inside **-**
No. of brine sections in each chamber **-**

Can each section be readily shut off or disconnected **-** Are the control valves situated in an easily accessible position **-**

NOTE.—THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED.



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Victualling Ship - Burrard D.D.Co. Hull No.212

GENERAL REMARKS:

These Freon compressors have been built under a mass production system, where a large number of parts are made to the Makers' gauges, and are afterwards rapidly assembled into complete machines. These ships were urgently required, and it was therefore decided to fall in with the makers' system, but this involved that each compressor finally assigned to these Victualling Ships could not be individually examined.

A large number of parts were examined by the Undersigned and found satisfactory. The complete machines are tested to 150-180 lbs. by Air Pressure under Water. Several compressors were actually witnessed under this test and found satisfactory. The Makers make a sample test every 3 months, testing one or more sample compressors to 375 lbs. per sq.in., and reporting the same to Underwriters Organizations and other bodies. Several of the compressors were also witnessed during "running in", when they are belt driven without load, and were found satisfactory.

The Liquid Receivers and Condenser Shells have been tested in the presence of the Undersigned to 400 lbs.per sq.in. by Air Pressure under water and they were found sound and tight in every respect, and showing no sign of weakness at that pressure.

The Direct Expansion batteries have been tested by Air Pressure under Water to 400 lbs. per sq.in.

General Opinion

These Compressors have been built under Special Survey in accordance with the Rules and Approved Plans, and the workmanship and material are good.

They have been forwarded to Vancouver to be fitted on board, and when this has been done in accordance with the Rules, and the Installation has been thoroughly tried and submitted to Temperature and Maintenance Tests to the satisfaction of the Surveyor, it will be eligible, in my opinion, to receive the notation LLOYDS R.M.C. with date as recommended by Vancouver Surveyor.

Copy of this Report has been forwarded to Vancouver Surveyor for information and guidance.

John S. Heck

Sounding Pipes, No. and position in each chamber situated below the load water line
Diameter. Are all sounding pipes in way of insulated chambers fitted in accordance with Section 3, Clause 11

Are all wood linings tongued and grooved Are cement facings reinforced with expanded steel lattice

How is the expanded metal secured in place

How are the cork slabs secured to the steel structure of the vessel

Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans

Are they permanently fixed or collapsible, or portable

Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors Are the door frames efficiently insulated

Are insulated plugs supplied for the doorways Where are the doors worked from

Cooling Pipes in Chambers, diameter Minimum thickness Are they galvanised externally

How are they arranged in the chambers

Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers

The foregoing is a correct description of the Insulation and Appliances.

Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery and Insulation (If not, state date of approval)

Is the Refrigerating Machinery and Appliances duplicate of a previous case If so, state name of vessel

If the survey is not complete, state what arrangements have been made for its completion and what remains to be done

General Remarks (State quality of workmanship, opinions as to class, &c.)

PLEASE SEE FOLLOWER SHEET

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.						INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.	System of (1) Refrigerating (2) Insulating the Chambers.	Ice melting capacity per 24 hours. Tons.	No. Capacity. Cubic ft.

Fee £ **\$100⁰⁰** (Fee applied for, **TO BE CHARGED**)
Travelling Expenses £ : **35⁰⁰** (Received by me, **AT VANCOUVER** Dec. 25 1944)

John S. Heck
Surveyor to Lloyd's Register.

Committee's Minute **NEW YORK AUG 23 1944**

Assigned *Transmit to London*

FRI. 29 DEC 1944

See Per 6331

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*Noted.
Await- Dr. report.
R.P.
12/19/44.*