

## REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office)

1 JUN 1943

5<sup>th</sup> May, 43. when handed in at London Office 7<sup>th</sup> May, 1943 Port of **Maharré**  
 Date First Survey 7<sup>th</sup> Sept. 1942 Last Survey 8<sup>th</sup> March, 1943  
 on the Refrigerating Machinery and Appliances of the **Inv. to. M/S "LA PLATA"** Tons **7372**  
 Vessel built at **Maharré** By whom built **Kockums M. V. A. B.** Yard No. **251** When built **1943**  
 Owners **Pederniktein Nordstjernman** Port belonging to **Stockholm** Voyage **✓**  
 Refrigerating Machinery made by **M. S. Thomas & Co. Salvo & Co.** Machine No. **14608/9/10** When made **1942**  
 Insulation fitted by **Rockums Mekt. V. A. B.** When fitted **1943** System of Refrigeration **CO<sub>2</sub>**  
 Method of cooling Cargo Chambers **Brine and Air** Insulating Material used **Granulated cork**  
 Number of Cargo Chambers insulated **8** Total refrigerated cargo capacity **96100** cubic feet.

## DESCRIPTION OF REFRIGERATING MACHINERY.

Where placed **Inv. end of port side in eng. room.**

Refrigerating Units, No. of ☒ Single, double, or triple ☒ Cubic feet of air delivered per hour ☒  
 Total refrigeration or ice-melting capacity in tons per 24 hours ☒ Are all the units connected to all the refrigerated chambers **Yes**  
 Compressors, driven direct ☒ Compressors, ☒ double acting ☒ No. of cylinders ☒  
 Diameter of cylinders ☒ Diameter of piston rod ☒ Length of stroke ☒ No. of strokes per minute ☒  
 Motive Power supplied from **Electric motors. Current supplied by 4 generators each of 100 K.W. driven by Diesel engines.**  
 Steam Engines, high pressure, compound, or triple expansion, surface condensing. No. of cylinders ☒ Diameter ☒  
 Length of stroke ☒ Working pressure ☒ Diameter of crank shaft journals and pins ☒  
 Breadth and thickness of crank webs ☒ No. of sections in crank shaft ☒ Revolutions of engines per minute ☒  
 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 ☒  
 Electric Motors, type **Drip proof** No. of **3** Rated **40.5-55** Kilowatts **220**  
 Volts **200-270** revolutions per minute **105 mm.**  
 Reduction Gearing, maximum shaft horse power at 1st pinion ☒ Revolutions per minute at full power at 1st pinion ☒  
 2nd pinion ☒ 1st reduction wheel ☒ Main shaft ☒ Pitch circle diameter, 1st pinion ☒ 2nd pinion ☒  
 1st reduction wheel ☒ Main wheel ☒ Width of face, 1st reduction wheel ☒ Main wheel ☒  
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings, 1st pinion ☒ 2nd pinion ☒  
 1st reduction wheel ☒ Main wheel ☒ Flexible pinion shafts, diameter 1st ☒ 2nd ☒  
 Pinion shafts, diameter at bearings, External, 1st ☒ 2nd ☒ Internal, 1st ☒ 2nd ☒  
 Diameter at bottom of teeth of pinion, 1st ☒ 2nd ☒ Wheel shafts, diameter at bearings, 1st ☒  
 Main ☒ Diameter at wheel shafts, 1st ☒ Main ☒  
 Gas Condensers, No. of **3** Cast iron or steel can type **Cast iron** Cylindrical or rectangular **Cylindrical**  
 No. of coils in each **4** Material of coils **Copper 18.24 mm. diam.** Can each coil be readily shut off or disconnected **Yes**  
 Water Circulating Pumps, No. and size of **2-108 l/h.** how worked **Electrically** Gas Separators, No. of **3**  
 Gas Evaporators, No. of ☒ Cast iron or steel can type ☒ Pressure or gravity type ☒  
 No. of coils in each casing ☒ Material of coils ☒ Can each coil be readily shut off or disconnected ☒  
 Brine Cooled Batteries, No. of **8** Are there two separate systems, so that one may be in use while the other is being cleared of air **Yes**  
 No. of coils in each battery **4, 4, 3, 3, 3, 6, 6, 6** Material of coils **Steel** Can each coil be readily shut off or disconnected **Yes**  
 Total cooling surface of battery coils **660 m<sup>2</sup>** Is a watertight tray fitted under each battery **Yes**  
 Air Circulating Fans, Total No. of **8** each of **120** **269** **493** cubic feet capacity, at **1350** **1100** **960** revolutions per minute ☒  
 Steam or electrically driven **Electrically** Are there spare fans supplied are these fitted in position ready for coupling up ☒  
 Brine Circulating Pumps, No. and size of, including the additional pump **4-66 l/h.** how worked **Electrically**  
 Brine Cooling System, closed or open **Open** Are the pipes and tanks galvanized on the inside **No**  
 No. of brine sections in each chamber **No. 1 upper inner dk=4 No. 2 upper inner dk=4 No. 2 lower inner dk=3 No. 3 lower inner dk=3 No. 3 hold=5 No. 4 upper inner dk. port side=6 No. 4 upper inner dk. starboard side=6 No. 4 lower inner dk.=6**  
 Can each section be readily shut off or disconnected **Yes** Are the control valves situated in an easily accessible position **Yes**



Are thermometers fitted to the outflow and to each return brine pipe? yes When the tanks are closed are they ventilated as per Rule

## HYDRAULIC AND OTHER TESTS

DESCRIPTION	Date of Test	Working Pressure	Hydraulic Test Pressure	Air Test Pressure	Stamped	REMARKS
ESCAPE CYLINDERS (IF TESTED)						
GAS COMPRESSORS						
SEPARATORS						
CONDENSER COILS	27.10.42	70 kg. cm <sup>2</sup>	210	105	Illegible	210/105 kg. AB 27.10.42
EVAPORATOR COILS						
CONDENSER HEADERS AND CONNECTIONS						
CONDENSER CASINGS						
EVAPORATOR CASINGS						
NH <sub>3</sub> CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE	25.1.43	18 kg.	36 kg. cm <sup>2</sup>	90 kg. cm <sup>2</sup>		
BRINE PIPES AFTER ERECTION IN PLACE	2.2.43					

**Cooling Test.** Has the refrigerating machinery been examined under full working conditions, and found satisfactory Yes

Dates of test	8 and 9-3-1943	Density of Brine	30.9°	by	Gramme	hydrometer
---------------	----------------	------------------	-------	----	--------	------------

or, delivery and return air at direct expansion or brine cooled batteries & , outflow and return brine  $-22.5^{\circ}\text{C}$  &  $-18.3^{\circ}\text{C}$

atmosphere  $+3.5^{\circ}\text{C}$  cooling water inlet and discharge  $+2.5^{\circ}\text{C}$  &  $+5.8^{\circ}\text{C}$  gas in condensers  $+18^{\circ}\text{C}$  and evaporators  $-25^{\circ}\text{C}$

The average temperature of the refrigerated chambers  $-10^{\circ}\text{C}$  -  $-14.5^{\circ}\text{C}$ . and the rise of temperature in these chambers upon the expiration of 12 hours

time after the machinery and cooling appliances have been shut off. 3.6°C in No. 4 upper inner duct spaces and 2.7°C in all others.

## SPACE GEAR

Are the machines in accordance with Section 4, Clause 2 of the Rules?

Spare gear or gear approved specifications placed  
onboard.

DESCRIPTION OF INSULATION										
IN LOWER HOLD CHAMBERS.						IN TWEEN DECK CHAMBERS.				
FRAME NO.	AL. SPACE	INSUL. LINING	INSUL. LINING	INSUL. LINING	INSUL. LINING	AL. SPACE	INSUL. LINING	INSUL. LINING	INSUL. LINING	INSUL. LINING
FRAME NO. 171 (Fore Peak)						✓	✓	Insulated cork	300 mm.	2 of 7/8"
FRAME NO. 146						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 122						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 121						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 107 (Double Bottom)	2"	1 of 7/8"				✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 67 (Double Bottom)						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 65						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. 39						✓	✓	"	300 mm.	2 of 7/8"
FRAME NO. (After Peak)						✓	✓	"	300 mm.	2 of 7/8"
SIDES	✓	✓	"	300 mm.	2 of 7/8"	✓	✓	"	300 mm.	2 of 7/8"
OVERHEADING	✓	✓	"	300 mm.	2 of 7/8"	✓	✓	"	300 mm.	2 of 7/8"
FLOORS OF CHAMBERS	2"	1"	"	175 mm.	1 of 7/8"					
TUNNEL HATCHWAYS						✓	✓	"	300 mm.	2 of 7/8"
TUNNEL RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										
FRAMES OF REVERSE FRAMES, FACE	2" grounds as per approved plans.									
BULKHEAD STIFFENERS	2" grounds.									
RIBBAND ON TOP OF DECK	✓									
SIDE SPRINGERS, TOP	✓			BOTTOM	✓			AND FACE	✓	
WEB FRAMES, SIDES	✓			AND FACE	✓					
BRACKETS, TOP	✓			BOTTOM	✓			AND FACE	✓	
INSULATED HATCHES, MAIN DECK	Plug hatch has 300 mm. Ins. cork. Plug hatch has 175 mm. Ins. cork. Plug hatch has 175 mm. Ins. cork.									
HATCHWAY COAMINGS, MAIN DECK	110 x 185 x 300 mm. 24 mm. gable. Bilge 100 x 140 x 245 mm.									
HOLD PILLARS	40 mm. slab cork and 2" lining.									
MAINT.	✓			VENTILATORS	40 mm. slab cork and 2" lining.					
Are insulated plugs fitted to provide easy access to bilge suction roses										
Are insulated plugs fitted to ventilators										
Is the insulation of the lower hold floor and tunnel top in way of the hatchways provided										
Oil Storage Tanks, where adjacent to the insulated chambers, state what provision has been made for ventilating the air space between the insulation and the tank head plating.										
Coal Bunker Bulkheads, and Drine Outflow and Return Pipes passing through coal bunkers. Is the insulation, so far as practicable, fireproof										
Where Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof										
Cargo Bunkers, Tankers and stowage, sides										
Are all pipes, including air and cooling pipes, which pass through or into insulated chambers, well insulated										
Drainage Arrangements. Where the chambers are situated below the load water line, what provision is made for draining the inside of the chamber										
What provision is made for draining the refrigerating machinery room										
Are all air spaces between insulation arranged to drain to bilge wells, or gutters, or the nearest drain										

Hochmums mch. Verbestads 9. B.  
sgd/ G. Lundsqvist *Manufaktur*  
C. D. 7



How are the work slabs secured to the steel structure of the vessel? Steel wire running diagonally

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

*General Remarks* (State quality of workmanship, opinions as to class, etc.) The refrigerating machinery of this vessel has been installed onboard and the installation fitted under our inspection and to our satisfaction. The installation is good and in accordance with the approved plans. The electric current for the refr. plant is supplied by four diesel oil engine driven generators of 100 K.W. each. The spare gear has been checked onboard. The refrigerating machinery has been surveyed during construction by the Copenhagen Surveyors (See Copenhagen Rpt. No. 11411 dated 27<sup>th</sup> February 1942)

The refrigerating installation of this vessel is eligible, in our opinion, to be classed in the Register Book and to have record of **⊗ Lloyd's R.M.C. 4.43**. No. 4 upper trunk deck spaces for temp  $-12^{\circ}\text{C}$ . All other chambers for temp  $-0.5^{\circ}\text{C}$ .

## PARTICULARS TO BE ENTERED IN REGISTER BOOK

REFRIGERATING MACHINE					POWER		INSTALLED CAPACITY		
Make and Model of Machine	Manufacturer	Date of Construction	System	Type	(1) Refrigerating (2) Heating the structure	Gross feet of air delivered per hour	No. machines operating per 24 hours	No.	Rated capacity
2 double	W. S. Thomas Thos. Salvor & Co.	1943	Carbonic & Ammonia		Thomas & Co. 2/4 ammoniated water.	74.43	8		96100

Dec. 17th. 226.00 (Per applied, 15<sup>th</sup> April, 43)  
 Working Expenses 17th. 0.00 (Received by me, 3<sup>rd</sup> May, 43)  
 Late fee 873-43 fr. 25.00  
 Committee's Minute TUES. 8 JUN 1943

Committee's Minute TUES. 8 JUN 1943

FRI. 9 JUL 1943

+ Lloyds Rmc 4.43  
N<sup>o</sup> 4 upper five or six  
chambers for 1007  
all other chambers for 303  
~~white box~~