

# REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

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Date of writing Report 22/1/49 19 48 When handed in at Local Office 22/1/49 Port of GENOVA  
 No. in Reg. Book. Survey held at LA SPEZIA Date: First Survey 20th July Last Survey 13th December 19 48  
 (No. of Visits 13)

on the Refrigerating Machinery and Appliances of the SCREW VESSEL C.R.D.A.-YARD N.1741-42-47 Tons {Gross  Net

Vessel built at TRIESTE By whom built CANTIERI RIUNITI DELL'ADRIATICO Yard No. 1747 When built

Owners  Port belonging to  Voyage

Refrigerating Machinery made by ODERO TERNI ORLANDO STABILIMENTO TERMOMECCANICA Machine Nos. 33395/97 When made 1948

Insulation fitted by  When fitted  System of Refrigeration CO<sub>2</sub>

Method of cooling Cargo Chambers AIR CIRCULATING Insulating Material used

Number of Cargo Chambers insulated  Total refrigerated cargo capacity  cubic feet.

## DESCRIPTION OF REFRIGERATING MACHINERY.

Where placed

Refrigerating Units, No. of 2  No. of machines 2  Is each machine independent YES

Total refrigeration or ice-melting capacity in tons per 24 hours 26.4 Are all the units connected to all the refrigerated chambers

Compressors, driven direct or ~~through~~ reduction gearing. Compressors, single or double acting DOUBLE If multiple effect compression YES

Are relief valves or safety discs fitted YES  No. of cylinders to each unit 2  Diameter of cylinders 60 mm

Diameter of piston rod 30 mm Length of stroke 120 mm No. of revolutions per minute 400

Motive Power supplied from   
 (State number of boilers, oil engines or electric generators supplying the motive power.)

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 ..

### AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined .. What means are provided for cleansing their inner surfaces ..

Is there a drain arrangement fitted at the lowest part of each receiver .. If made under survey ..

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 D.40 No. of 2 Rated 33 Kilowatts 220

Volts at 1200 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 2  Cast iron or steel casings STEEL Tubes ~~XXXXXXXXXXXXXXXXXXXX~~ MULTITUBULAR Are safety valves fitted

to casings YES No. of ~~coils~~ tubes in each element 7 Material of ~~coils~~ COPPER Can each coil be readily shut off or disconnected No

Water Circulating Pumps, No. and size of pumps available Nº2-20 mc/h/ how worked electrically Gas Separators, No. of 2

Gas Evaporators, No. of 2  Cast iron or steel casings STEEL Pressure or gravity type Pressure If pressure type, are safety

valves fitted YES No. of coils in each casing 4 Material of coils STEEL Can each coil be readily shut off or disconnected No

~~XXXXXXXXXXXXXXXXXXXX~~ Brine Cooled Batteries, No. of 2  Are there two separate systems, so that one may be in use while the other is being

cleared of snow YES No. of coils in each battery 2 Material of coils STEEL Can each coil be readily shut off or

disconnected YES Total cooling surface of battery coils 420 sq. Is a watertight tray fitted under each battery YES

Air Circulating Fans, Total No. of 1 each of 500 mc/1' cubic-foot capacity, at 1900 revolutions per minute

Steam or electrically driven electrically Where spare fans are supplied are these fitted in position ready for coupling up

Brine Circulating Pumps, No. and size of, including the additional pump Nº2 - 13 mc/h. how worked electrically

Brine Cooling System, closed or open closed Are the pipes and tanks galvanised on the inside No

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.

*Y. R. M.*



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Are thermometers fitted to the outflow and to each return brine pipe  Where the tanks are closed are they ventilated as per Rule   
 Where the tanks are not closed is the compartment in which they are situated efficiently ventilated   
 Are the number and capacity of the machines and the number of pumps and sea connections in accordance with Section 2, Clause 1 of the Rules **YES**  
 Is the exhaust steam led to the main and auxiliary condensers

**HYDRAULIC AND OTHER TESTS.**

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)	9.10.48	85 Kg/cm <sup>2</sup>	210 Kg/cm <sup>2</sup>	105 Kg/cm <sup>2</sup>	D.G.	
GAS COMPRESSORS	13.12.48	85	210	105		
SEPARATORS	20.7.48 24.7.48	85	210	105		
MULTIPLE EFFECT RECEIVERS	26.8.48	85	210	105		
CONDENSER COILS	1.10.48	85	210	105		
EVAPORATOR COILS	26.8.48 2.9.48	85	210	105		
CONDENSER HEADERS AND CONNECTIONS	from 2.9.48 to 1.10.48	85	210	105		
CONDENSER CASINGS						
EVAPORATOR CASINGS	26.8.48 2.9.48	1.5			D.G.	
NH <sub>3</sub> CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE						
BRINE PIPING AFTER ERECTION IN PLACE						

Have important steel castings and forgings been tested in accordance with the Rules **YES**   
**Cooling Test.** Has the refrigerating machinery been examined under full working conditions, and found satisfactory   
 Dates of test  Density of Brine  by  hydrometer   
 Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at direct expansion or brine cooled batteries   
 atmosphere  cooling water inlet and discharge  outflow and return brine   
 gas in condensers  and evaporators   
 the average temperature of the refrigerated chambers  and the rise of temperature in these chambers upon the expiration of  hours   
 time after the machinery and cooling appliances have been shut off

**SPARE GEAR.**

Are the working parts of the machines, pumps and motors respectively, interchangeable **YES**   
 Has the spare gear required by the Rules been supplied   
 Additional Spare Gear Supplied:-  
**TO BE SUPPLIED AT TRIESTE**

The foregoing is a correct description of the Refrigerating Machinery. **ODERO - TERMI - ORLANDO**  
 by la Cantierina di Bari, Esperto ed Artigiano  
 STABILIMENTO TERMOCANTIERI  
 Manufacturer.

**DESCRIPTION OF INSULATION.**

	IN LOWER HOLD CHAMBERS.					IN 'TWEEN DECK CHAMBERS.				
	Air Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.	Inner Lining.	Air Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.	Inner Lining.
FRAME No. (Fore Peak)	A									
FRAME No.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No. (Boiler Room)	A									
FRAME No. (Engine Room)	A									
FRAME No.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No. (After Peak)	F									
SIDES										
OVERHEADING										
FLOORS OF CHAMBERS										
TRUNK HATCHWAYS										
THRUST RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										

**BULKHEADS.**  
 FRAMES OR REVERSE FRAMES, FACE  
 BULKHEAD STIFFENERS, TOP  BOTTOM  AND FACE   
 RIBBAND ON TOP OF DECK   
 SIDE STRINGERS, TOP  BOTTOM  AND FACE   
 WEB FRAMES, SIDES  AND FACE   
 BRACKETS, TOP  BOTTOM  AND FACE   
 INSULATED HATCHES, MAIN  BILGE  MANHOLE   
 HATCHWAY COAMINGS, MAIN  BILGE   
 HOLD PILLARS   
 MASTS  VENTILATORS   
 Are insulated plugs fitted to provide easy access to bilge suction roses  tank, air, and sounding pipes  heels of pillars   
 and manhole doors of tanks  Are insulated plugs fitted to ventilators  cargo ports  and side lights   
 Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected  if so, how   
**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 bulkhead plating   
 and for draining the tank top   
**Fireproof Insulation.** Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat   
 Where **Cooling Pipes** pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof   
**Cargo Battens,** Dimensions and spacing, sides  floors  tunnel top   
 fixed or portable  Are screens fitted over the brine grids at chamber sides  hinged or permanently fixed   
**Thermometer Tubes,** No. and position in each chamber   
 diameter  are they fitted in accordance with Section 3, Clause 8   
**Protection of Pipes.** Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated   
**Draining Arrangements.** What provision is made for draining the inside of the chambers   
 Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off   
 What provision is made for draining the refrigerating machinery room   
 brine return room  fan room  water circulating pump room   
 Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers



**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 (If not, state date of approval) ✓

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

and Insulation ✓  
C.R.D.A. YARD N°1741-1742  
SEGENOA REP. N. 16824 & 16893

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

Plan of Ruxer  
Plan of Lucy  
Prof Sand

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

THE REFRIGERATING MACHINERY AND APPLIANCES HAVE BEEN CONSTRUCTED UNDER SPECIAL SURVEY OF TESTED MATERIALS AND THEY ARE IN ACCORDANCE WITH THE APPROVED PLANS SECRETARY'S LETTERS AND RULE REQUIREMENTS.  
THE MATERIAL AND WORKMANSHIP ARE GOOD - THESE PARTS ARE NOW BEEN DESPATCHED TO TRIESTE TO BE FITTED ON BOARD, AT ONE OF THE MESSR C.R.D.A. YARD 1741/42/47. ON THE SATISFACTORY COMPLETION THE INSTALLATION WILL BE ELEGIBLE FOR THE NOTATION IN THE SOCIETY'S REGISTER BOOK LLOYD'S R.M.C. (WITH DATE) FOR TEMPERATURE 34°F.

**PARTICULARS TO BE ENTERED IN REGISTER BOOK.**

REFRIGERATING MACHINES,					System of (1) Refrigerating (2) Insulating the Chambers.	Ice melting capacity per 24 hours.	Is Refrigerating Machinery Electrically Driven?	INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.				No.	Capacity. Cubic ft.
2	2	CARB AMHY	ODERO TERNI ORLANDO STABIL. TERMOMECCANICA	1948	AIR CIRCULATING	Tons. 26.4	YES	-	-

Fee Lit. 40,000. =  
Car Exps. fund " 2,400. =  
Travelling Expenses " 10,000. =  
Revenue Tax.. " 1,572. =  
Fee applied for, 22/1/ 1949.  
Received by me, 19

*Stone*  
Surveyor to Lloyd's Register.

Committee's Minute FRI, 11 FEB 1949

Assigned

*Deferred not*



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