

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

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No. in Reg. Book 95603 Survey held at Trieste Date: First Survey 7TH JAN. 1949 Last Survey 12TH MAR. 1949

Suppl. 8 (No. of Visits 8)

on the Refrigerating Machinery and Appliances of the M/v. "Port Said" Tons ^{Gross} 6250 _{Net} ✓

Vessel built at Trieste By whom built Cant. Riun. dell' Adriat. Yard No. 1747 When built 1949

Owners Misr Navigation Co. Port belonging to Alexandria Voyage ✓

Refrigerating Machinery made by O.T.O. Stab. Termomecc. Machine Nos. 33395/97 When made 1949

Insulation fitted by Cant. Riun. dell' Adriatico When fitted 1949 System of Refrigeration CO₂

Method of cooling Cargo Chambers air Insulating Material used slab cork

Number of Cargo Chambers insulated one Total refrigerated cargo capacity 19.250 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed main engine room

No. of 2 No. of machines 2 Is each machine independent yes

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

in direct or through by belts Compressors, single or double acting double If multiple effect compression ✓

safety discs fitted yes No. of cylinders to each unit 2 Diameter of cylinders 60 mm.

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

THL applied from 3 auxiliary oil engines
(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 46840 Revolutions of engine per minute ✓

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

Can the internal surfaces of the receivers be examined see RPS 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 ✓

Unless lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓

Electric Motors, type protected-ventilated No. of 2 Rated 33 Kilowatts 220

Revolutions at 1200 revolutions per minute. Diameter of motor shafts at bearings 71 mm.

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 Multitubular 8 elements Are safety valves fitted ✓

to casings yes No. of tubes in each element 7 Material of tubes copper Can each coil be readily shut off or disconnected no

Water Circulating Pumps, No. and size of 2 of 20 mc/h. how worked electric motors 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

~~Direct Expansion or 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. metres Is a watertight tray fitted under each battery yes

Air Circulating Fans, Total No. of 1 each of 500 mc/h. cubic feet 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 yes

Brine Circulating Pumps, No. and size of, including the additional pump 2 of 13 mc/h. how worked electric motors

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

No. of brine sections in each chamber double air cooler only

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

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Are thermometers fitted to the outflow and to each return brine pipe yes Where the tanks are closed are they ventilated as per Rule yes
 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)						
GAS COMPRESSORS						
SEPARATORS						
MULTIPLE EFFECT RECEIVERS						
CONDENSER COILS						
EVAPORATOR COILS						
CONDENSER HEADERS AND CONNECTIONS						
CONDENSER CASINGS						
EVAPORATOR CASINGS						
NH ₃ CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE						
BRINE PIPING AFTER ERECTION IN PLACE	21.1.49	1.5 Kgcm ²	3.5 Kgcm ²			

See Genova Rpt. No. 16984

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 yes
 Dates of test 9-10 March 1949 Density of Brine 47° by Twaddell hydrometer
 Temperatures (when the cargo chambers are cooled down to the required test temperatures)
 or, delivery and return air at direct expansion or brine cool batteries -19°c & -15.5°c, outflow and return brine -24.5°c & -20°c
 atmosphere +6°c cooling water inlet and discharge +7°c & +11°c gas in condensers +19°c and evaporators -32°c
 the average temperature of the refrigerated chambers -14°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 12 hrs 7°c (-7°c)

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 yes including spare fan and motor -
 Additional Spare Gear Supplied: miscellaneous small gear.

The foregoing is a correct description of the Refrigerating Machinery.

Manufacturer:
 CANTIERI REUNTI DELL'ADRIATICA
 1947

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. 112 F						✓	✓	✓	✓	✓
FRAME No. 82 F						nil	15 mm. cem slab cork	160 mm.	nil	nil
BULKHEADS: FRAME No. (Boiler Room) A						nil	15 mm. cem slab cork	160 mm.	nil	nil
FRAME No. (Engine Room) A						✓	✓	✓	✓	✓
FRAME No. F										
FRAME No. A										
FRAME No. F										
FRAME No. A										
FRAME No. F										
FRAME No. A										
FRAME No. (After Peak) F										
SIDES						nil	15 mm. cem slab cork	210 mm.	180 mm.	nil
OVERHEADING						nil	15 mm. cem slab cork	250 mm.	nil	nil
FLOORS OF CHAMBERS						nil	30 mm. cem slab cork	160 mm.	nil	nil
TRUNK HATCHWAYS						nil	15 mm. cem slab cork	160 mm.	nil	nil
THRUST RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										
FRAMES ON REVERSE FRAMES, FACE										
BULKHEAD STIFFENERS, TOP		30 mm.								
BOTTOM										
AND FACE										
RIBBAND ON TOP OF DECKS										
SIDE STRINGERS, TOP		✓								
BOTTOM										
AND FACE										
WEB FRAMES, SIDES		✓								
AND FACE										
BRACKETS, TOP		Beam knees 30 mm.								
BOTTOM										
AND FACE										
INSULATED HATCHES, MAIN		none								
BILGE										
AND FACE										
HATCHWAY COAMINGS, MAIN		none								
BILGE										
AND FACE										
HOLD PILLARS		50 mm.								
MASTS		✓								
VENTILATORS										
Are insulated plugs fitted to provide easy access to bilge suction roses			scuppers only							
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										
vertical screens										
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 chamber										
1 P. & 1 S. also 6 electrical & 2 normal type at fan										
diameter		65 mm.								
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										
scuppers										
Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off										
no										
What provision is made for draining the refrigerating machinery room										
in main engine room										
brine return room		scuppers								
fan room		scuppers								
water circulating pump room										
in main eng. 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 ✓ yes
 Are all wood linings tongued and grooved none ✓ Are cement facings reinforced with expanded steel lattice ✓ yes
 How is the expanded metal secured in place wood screws - welded clips ✓
 How are the cork slabs secured to the steel structure of the vessel wood battens on frames ✓
Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans ✓ yes ✓
 Are they permanently fixed or collapsible, or portable fixed

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 none ✓ **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 brine heater

The foregoing is a correct description of the Insulation and Appliances. **CANTIERI RIUNITI DELL'ADRIATICO**
 Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery and Insulation ✓ yes
 (If not, state date of approval) App. for Genoa Office ✓
 Is the Refrigerating Machinery and Appliances duplicate of a previous case yes ✓ If so, state name of vessel "Star of Suez" Yard 1742 ✓
 If the survey is not complete, state what arrangements have been made for its completion and what remains to be done ✓ complete

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The refrigerating machinery of this vessel was constructed under the special survey of the Genoa Surveyors (please see Genoa Rpt. 16894). -
 The insulation and fittings in the cargo chamber were carried out under survey and in accordance with the approved plans and Secretary's letters. -
 The workmanship and materials are good. -
 The fan motors were constructed and tested under survey and the machinery and appliances fitted on board in an efficient manner. -
 On completion the chamber was cooled down to -14°C and all found satisfactory. -
 In my opinion the installation is eligible to be classed with notation of
 ⚡ Lloyd's R.M.C. 3-49 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.
2 ✓	2 ✓	CO ₂ ✓	Odero-Terni Orlando (O.T.O.) Stabil. Termomecc.	1948 ✓	Brine & Air Slab Cork	26.4 Tons	yes ✓	1	19,250 Cubic ft.

Fee £. 57'600. = (Fee applied for, ✓ 19
 Travelling Expenses £ : ✓ : Received by me, ✓ 19
 Committee's Minute **FRI. 22 APR 1949**
 Assigned + Lloyd's R.M.C. 3.49
 In temp. 34° F

Rm Surveyors
 Certificate to be sent to
 best

John W. Lee
Luigi Desari
 Surveyor to Lloyd's Register.

