

# Report on Refrigerating Machinery and Appliances.

Received at London Office 4-NOV-1954

Date of writing Report 5-10-1954 When handed in at Local Office 19 Port of Groningen

No. in Reg. Book. Survey held at Waddhuizen Date: First Survey 22-2-1954 Last Survey 3-9-1954 (Number of Visits 28)

on the Refrigerating Machinery and Appliances of the m.v. "ORANJEPOLDER" Tons Gross 499.75 Net 230.33

Vessel built at Waddhuizen By whom built Jhr. Waddhuizen Yard No. 219 When built 1954

Owners Jhr. van der Westhoven Port belonging to Rotterdam Voyage

Refrigerating Machinery made by M. Jansen Mech. Fab. Machine Nos. 541585/4 When made 1954

Insulation fitted by Messrs. Kari - Products When fitted 1954 System of Refrigeration NH3

Method of cooling Cargo Chambers. Direct Expansion Insulating Material used cork & cement

Number of Cargo Chambers insulated 2 Total refrigerated cargo capacity 2530 cubic feet

## DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Shelter deck forward.

Refrigerating Units, No. of 34 No. of machines 34 Is each machine independent

Total refrigeration or ice-melting capacity in tons per 24 hours 34 Are all the units connected to all the refrigerated chambers

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

Are relief valves or safety discs fitted. No. of cylinders to each unit. Diameter of cylinders

Diameter of piston rod. Length of stroke. No. of revolutions per minute

Motive Power supplied from 2 diesel generators @ 40 kW, 1 @ 20 kW. (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: 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 2 Cast iron or steel casings Shell & tube. Cylindrical or rectangular. Are safety valves fitted to casings.

No. of coils in each. Material of coils. Can each coil be readily shut off or disconnected.

Water Circulating Pumps, No. and size of pumps available. 1 @ 7 1/2 hp. how worked electrically. Gas Separators, No. of.

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

No. of coils in each battery. Material of coils. Can each coil be readily shut off or disconnected.

Total cooling surface of battery coils. Is a watertight tray fitted under each battery. yes.

Air Circulating Fans, Total No. of 2 + 14 spares each of 1180 cfm cubic feet capacity, at 2800 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. 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.

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...   
 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 <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...   
**Cooling Test.** Has the refrigerating machinery been examined under full working conditions, and found satisfactory...   
 Dates of test 29/20-8-54, 2/3-9-54 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 7-20°/-22° 7-22°/-24° & 5-20°/-22° 5-20°/-24° outflow and return brine  &  atmosphere 17° cooling water inlet and discharge 17° & 21° gas in condensers 19° and evaporators 20°  
 the average temperature of the refrigerated chambers 5-20° 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 10°

**SPARE GEAR.**

Are the working parts of the machines, pumps and motors respectively, interchangeable...   
 Has the spare gear required by the Rules been supplied...   
 Additional Spare Gear Supplied:

The foregoing is a correct description of the Refrigerating Machinery.

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. 106 F						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	cash	2x12cm	closed
Frame No. 94 F						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"	"	"
Frame No. A						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"	"	"
BULKHEADS. Frame No. F										
Frame No. A										
Frame No. (Boiler Room) F										
Frame No. A										
Frame No. (Engine Room) A								long 1/2" x 1/2" Cork	1x10cm	
Frame No. F								Chambers	1x10cm	
Frame No. A										
Frame No. F										
Frame No. A										
Frame No. F										
Frame No. (After Peak) F										
Sides ...						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	cash	2x12cm	closed
Overheading ...						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"	2x12cm	"
Floors of Chambers ...						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"	1x10cm	"
Trunk Hatchways ...						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	"	2x12cm	"
Thrust Recess, Sides and Top ...										
Tunnel Sides and Top ...										
Tunnel Recess, Front and Top ...										

Frames or Reverse Frames, Face   
 Bulkhead Stiffeners, Top  Bottom  and Face   
 Ribband on Top of Decks   
 Side Stringers, Top  Bottom  and Face   
 Web Frames, Sides  and Face   
 Brackets, Top  Bottom  and Face   
 Insulated Hatches, Main 1 each bulk 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 65x35/300 floors 50x35 4ply tunnel top...   
 fixed or portable portable Are screens fitted over the brine grids at chamber sides...  hinged or permanently fixed...

**Thermometer Tubes,** No. and position in each chamber... 3 bulk, 2 bilge, 104/105, 106/107, 108/109  
 diameter 2" 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... 2 liquid seal traps, deck  
 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... hand pump  
 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... yes Are cement facings reinforced with expanded steel lattice... yes  
 How is the expanded metal secured in place... special pin (chicken shape)  
 How are the cork slabs secured to the steel structure of the vessel... bitumastic.  
 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... yes Where are the doors worked from... dummy doors.  
 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... circulating hot gas

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

R. V. SCHEEPSWERF  
 W. VERBODEN  
 BUILDERS

Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery... no and Insulation... 26-5-54  
 (If not, state date of approval) 6-7-54  
 Is the Refrigerating Machinery and Appliances duplicate of a previous case... no 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.)  
 This installation was constructed and fitted under special survey in accordance with the approved plans, design of Rules and Secretary's Office. The workmanship was found good. The machinery has been tested under full working conditions and found working satisfactorily. An insulation test was held to satisfaction.  
 In my opinion the machinery merits the approval of the Committee and be recorded in the Society's Register Book + Lloyd's RMC - 9-54.

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.				Tons.	No.
2	2	ammonia	Spencer's Mach. Co. is. Montego Bay	1954	direct expansion slab and	54	yes	2	5530.

Fee ..... \$ 236.- (Fee applied for, 18-9-1954)  
 Travelling Expenses \$ : 74.- (Received by me, 19.....)

*[Signature]*  
 Surveyor to Lloyd's Register.

Committee's Minute... FRIDAY 19 NOV 1954

Assigned... + Lloyd's RMC 9.54 To maintain temp min 40°F with sea temp 86°F max.

\* 2-12-54



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