

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

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Date of writing Report 22/2 19 39 When handed in at Local Office Port of Rotterdam
 No. in Reg. Book. 80430 Survey held at Rotterdam Date: First Survey 15/2 '39 Last Survey 17/2 '39
 (No. of Visits three)

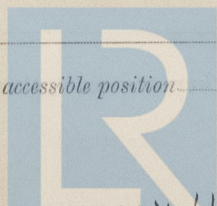
on the Refrigerating Machinery and Appliances of the ^{TWSC} M. V. NOORDAM Tons { Gross 5239 10726
 Net 5102 6236
 Vessel built at Rotterdam By whom built N. V. P. Smid & Z. Yard No. 515 When built 9/7/0
 Owners Med. Amerik. Stoom. Mij. Port belonging to Rotterdam Voyage -
 Refrigerating Machinery made by Reinhold Bosch & Co. Machine Nos. - When made 1938
 Insulation fitted by N. V. P. Smid & Z. When fitted 1938 System of Refrigeration CO₂
 Method of cooling Cargo Chambers air Insulating Material used granulated cork
 Number of Cargo Chambers insulated 6 Total refrigerated cargo capacity 16832 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

Refrigerating Units, No. of - No. of machines - Is each machine independent? -
 Total refrigeration or ice-melting capacity in tons per 24 hours - Are all the units connected to all the refrigerated chambers? -
Compressors, driven direct or through ^{single} reduction gearing. ^{double} 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 - (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 - 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 - Cast iron or steel casings - 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 - how worked - **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 -
Air Circulating Fans, Total No. of - each of - cubic feet capacity, at - revolutions per minute -
 Steam or electrically driven - 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 - 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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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 ₃ 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 15-16-17/2 '39 Density of Brine 30° by Beaumé hydrometer
Temperatures (when the cargo chambers are cooled down to the required test temperatures)
or, delivery and return air at direct expansion or brine cooled batteries & outflow and return brine -17.5 & -8 F
atmosphere 46 F. cooling water inlet and discharge 43 F & 45 F gas in condensers 50 F and evaporators -32 F
the average temperature of the refrigerated chambers -1 1/4 F and the rise of temperature in these chambers upon the expiration of 19 F in 24 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
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.					
BULKHEADS.		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									
		A									
	FRAME No.	F									
		A									
	FRAME No.	F									
		A									
	FRAME No. (Boiler Room)	F									
		A									
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	...	...	...	...	...	...
OVERHEADING	...	...	...	...	...	...
FLOORS OF CHAMBERS	...	...	...	...	...	...
TRUNK HATCHWAYS	...	...	...	...	...	...
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 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 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.) This vessel is refrigerating machinery and appliances being now in efficient condition, I am of opinion the vessel is eligible for the record of LLOYD'S R.M.C 2-39.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

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

Fee £ : : { Fee applied for, 19
Travelling Expenses £ : : { Received by me, 19

Surveyor to Lloyd's Register.

Committee's Minute TUE 28 FEB 1939

Assigned

See Rot. Amb. 27875



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