

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

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Date of writing Report

10

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Port of Rotterdam

No. in

Reg. Book.

Survey held at Schiedam Date: First Survey 5 June 1929. Last Survey 22 Oct. 1929.

(No. of Visits

24

on the Refrigerating Machinery and Appliances of the m.v. "Delfdijk" Tons { Gross 10220. Net 6305.

Vessel built at Schiedam By whom built Wilton's Eng. & Shipyard No. 310 When built 1929.

Owners Holland Amerika Lijn Port belonging to Rotterdam Voyage

Refrigerating Machinery made by Hall Machine No. 4920-21-22 80-43. When made 1929.

Insulation fitted by Heertel & Co. When fitted 1929. System of Refrigeration CO₂

Method of cooling Cargo Chambers 15 by air & 4 by grids. Insulating Material used Cork slab Cement finish.

Number of Cargo Chambers insulated 19. Total refrigerated cargo capacity 155470. cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed D. deck after engine room.

Refrigerating Units, No. of 4. Single, double, or triple See enclosed report. 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

Compressors, driven direct or through single } reduction gearing. Compressors, single or double acting No. of cylinders

Diameter of cylinders Diameter of piston rod Length of stroke No. of strokes per minute

Motive Power supplied from

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

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 Shunt compound. No. of 4 Rated 59 Kilowatts 2200.

Volts at 112 - 150 revolutions per minute. Diameter of motor shafts at bearings 5.4"

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 shroud, 1st Main

Gas Condensers, No. of 4 Cast iron or steel casings double pipe contra flow. Cylindrical or rectangular

No. of coils in each 42. Material of coils seamless steel inner tubes copper lined. Can each coil be readily shut off or disconnected Yes

Water Circulating Pumps, No. and size of 2 x 3532 cub. ft. p. h. how worked electrically Gas Separators, No. of 4

Gas Evaporators, No. of 4 Cast iron or steel casings 4 steel Pressure or gravity type Yes

No. of coils in each casing 1 coil Material of coils steel Can each coil be readily shut off or disconnected Yes

Direct Expansion or Brine Cooled Batteries, No. of 9 air coolers Are there two separate systems, so that one may be in use while the other is being

cleared of snow Germania new patent 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 9 each of 1- 1765000 2- 353000 3- 2472000 4- 2119000 cubic feet capacity, at 720 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 4- 003 2- 212 cubic feet. how worked electric driven.

Brine Cooling System, closed or open open Are the pipes and tanks galvanised on the inside

No. of brine sections in each chamber 0 grids

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



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Where the tanks are not closed is the compartment in which they are situated efficiently ventilated Yes

Steam Condensing Plant. *State what provision is made for condensing steam, in terms of Section 4, Clauses 13 and 14.* ✓

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)						
GAS COMPRESSORS						
„ SEPARATORS						
„ 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..						

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

Dates of test 21st of Oct 1929 Density of Brine 45 by Twaddle's hydrometer

Temperatures (when the cargo chambers are cooled down to the required test temperatures) of air at the snow box and of the return air _____ & _____

or, delivery and return air at direct expansion or brine cooled batteries..... &, outflow and return brine.....

atmosphere 44°F. cooling water inlet and discharge 54°F. & 50°F. gas in condensers $\pm 65^{\circ}\text{F.}$ and evaporators -10 to -29 20 to 180 ft.

the average temperature of the refrigerated chambers -10°F. and the rise of temperature in these chambers upon the expiration of 24 hours

time after the machinery and cooling appliances have been shut off

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery.

Manufacturer.

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.	
BULKHEADS.	FRAME No. (Fore Peak)	A									
	FRAME No.	F									
		A									
	FRAME No. 123	F	✓	✓	slab cork	13 1/2" exp. mat.	✓	✓	slab cork	11" exp. mat.	
		A	✓	✓	do	do	✓	✓	do	do	
	FRAME No.	F									
		A									
	FRAME No. (Boiler Room)	F									
		A									
	FRAME No. (Engine Room)	A									
FRAME No. 64	F	✓									
	A	✓	✓			✓	✓	do	do		
FRAME No. 61	F										
	A	✓	✓			✓	✓	do	do		
FRAME No. 34	F	✓	✓			✓	✓	do	do		
	A										
FRAME No. (After Peak)	F										
SIDES ...	✓	✓	do	10 1/2"	do						
OVERHEADING ...	✓	✓	do	10 1/2"-11 1/2"-12 1/2"	do	✓	✓	do	do	do	
FLOORS OF CHAMBERS	2"	1/2" T.S.G.	Green cork.	6 1/2"	2 1/2" T.S.G.						
TRUNK HATCHWAYS						
THRUST RECESS, SIDES AND TOP						
TUNNEL SIDES AND TOP						
TUNNEL RECESS, FRONT AND TOP...						

FRAMES OR REVERSE FRAMES, FACE	$2\frac{1}{2}$ " slab cork $\frac{1}{2}$ " cement finish.		
BULKHEAD STIFFENERS, TOP	✓	BOTTOM	✓ AND FACE $1\frac{1}{2}$ " slab. $\frac{1}{2}$ " cement.
RIBBAND ON TOP OF DECKS	✓		
SIDE STRINGERS, TOP	none	BOTTOM	none AND FACE none
WEB FRAMES, SIDES	✓	AND FACE	✓
BRACKETS, TOP	$2 \times 1\frac{1}{2}$ " slab. $\frac{1}{2}$ " cement.	BOTTOM	✓ AND FACE 2 " slab $\frac{1}{2}$ " cement
INSULATED HATCHES, MAIN	$2\frac{1}{2}$ " P.P. 5" cork. $2 \times 1\frac{1}{4}$ W.P. T.S. g.	BILGE	$2\frac{1}{2}$ " P.P. 6" cork $2 \times 1\frac{1}{4}$ W.P. T.S. g. MANHOLE $2 \times 1\frac{1}{4}$ T.S. g. 9" cork $2\frac{1}{2}$ " P.P.
HATCHWAY COAMINGS, MAIN	flugs level with deck below coaming.	BILGE	$2\frac{1}{2}$ " P.P. T.S. g. 9" cork $2\frac{1}{2}$ " P.P. T.S. g.
HOLD PILLARS	1" T.S. $1\frac{1}{2}$ " W.P.		

MASTS

VENTILATORS

Are insulated plugs fitted to provide easy access to bilge suction roses Yes tank, air, and sounding pipes Yes heels of pillars Yes

and manhole doors of tanks Yes Are insulated plugs fitted to ventilators Yes cargo ports none and side lights none

Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected Yes if so, how 2 1/2" wood

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

Coal Bunker Bulkheads, and Brine 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 Battens, *Dimensions and spacing,* sides $2" \times 2" - 14"$ floors $3" \times 3"$ tunnel top \checkmark

fixed or portable flours portable Are screens fitted over the brine grids at chamber sides Yes hinged or permanently fixed hinged

Thermometer Tubes, No. and position in each chamber *as per approved plan*

diameter 4" are they fitted in accordance with Section 3, Clause 8 Yes.

Protection of Pipes. Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated Yes

Draining Arrangements. *Where the chambers are situated below the load water line, what provision is made for draining the inside of the chambers*

Special patent drain pots. 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 in helges engine room.

brine return room ☒ fan room ☒ water circulating pump room ☒ in engine room.

Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers

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