

(Received at London Office 10 Oct 1928)

Port of *Rotterdam*

(No. of Visits 36 + 8.)

Tons { Gross 6249.73
Net 3422.56

Owners *Per: Axel: Schep: My* Port belonging to *Copenhagen* Voyage *—*

Insulation fitted by G. Smith & Co When fitted 1920 System of Refrigeration C₂ Brine

Number of Cargo Chambers insulated 2 Total refrigerated cargo capacity 41,000 cubic feet.

Refrigerating Units, No. of One Single, double, or triple Double Cubic feet of air delivered per hour 2

Compressors, driven direct ~~or through~~ ^{single} } reduction gearing. Compressors, single or double acting Double No. of cylinders 2

Diameter of cylinders (3) " Diameter of piston rod $1\frac{3}{8}$ " Length of stroke 13 " No. of strokes per minute 200

Motive Power supplied from *Direct acting cross compound engine*

Steam Engines, high pressure, compound, or triple expansion, surface condensing. No. of cylinders 2 Diameter HP 10 "LP 20"

Length of stroke 12" Working pressure 5-0 kg Diameter of crank shaft journals and pins 4 1/2"

Breadth and thickness of crank webs $6 \times 3\frac{1}{2}$ in $3\frac{1}{16}$ out No. of sections in crank shaft 270 Revolutions of engines per minute 100

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 ☒ No. of ☒ Name ☒

Voltage ☒ revolutions per minute Diameter of motor shafts at bearings ☒

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	✓
		1		But is on	Cylindrical or rectangular
					rectangular

Gas Condensers, No. of 2 Cast iron or steel casings Cast iron Cylindrical or rectangular Cylindrical
 63 42 Bares 3" x 12" Can each coil be readily shut off or disconnected Yes.

No. of coils in each 5 Material of coils C. S. W. G. No. 14 Can each coil be readily changed Yes
 Water Circulating Pump No. and size of 1 - 4" 4 1/2" & 8" A. how worked off crankshaft Gas Separators, No. of 2 delivery

Gas Evaporators No. of 3 combined in one Cast iron or steel casings Steel & casings Pressure or gravity type gravity ^{each side}

No. of coils in each casing 3 Material of coil C. D. Steel, 1/2" x 5/16" o.d. Can each coil be readily shut off or disconnected Yes

~~Direct Expansion or~~ Brine Cooled Batteries, No. of 3 Are there two separate systems, so that one may be in use while the other is being repaired? Yes

cleared of snow Yes No. of coils in each battery 4 - 12 Material of coils Gold 1 1/2 Core W. J. Gal. Can each coil be readily shut off Yes

disconnected Yes Total cooling surface of battery coils $1. D = 350$
 $HOLD = 460 \square ft$ Is a watertight tray fitted under each battery Yes

Air Circulating Fans, Total No. of 2 - 30 each of 16000 cubic feet capacity, at 320 revolutions per minute Maximum

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 *2-6 x 6 1/2 x 6 1/2 how worked Steam - direct*

Brine Cooling System, closed or open Open Are the pipes and tanks galvanneal on the inside Yes
 Offic. cooling 4-1 1/2" bore deliveries to Tr. D.K. Coolers

[illegible]

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

Can take section to meeting with a

NOTE.—THE WORDS WHICH DO NOT APPLY SHOULD BE DELETED.

2

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. *Yes*

Steam Condensing Plant. State what provision is made for condensing steam, in terms of Section 4, Clauses 13 and 14.
Machine exhaust to its own surface condenser

HYDRAULIC AND OTHER TESTS.

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)	HP 4-6-10 LP 6-6-10	---	350 lbs. sq. in.	---	---	---
GAS COMPRESSORS	11-6-10	100 lbs. sq. in.	300 lbs. sq. in.	150 lbs. sq. in.	C.N.H.	---
SEPARATORS	13-5-10	do	do	do	89.	---
CONDENSER COILS	9-5-10	do	do	do	89.	---
EVAPORATOR COILS	30-5-10	do	do	do	89.	---
CONDENSER HEADERS AND CONNECTIONS	13-5-10	do	do	do	89.	---
CONDENSER CASINGS	10-6-10	5 to 10 lbs. sq. in.	10 lbs. sq. in.	---	A.E.	---
EVAPORATOR CASINGS	---	---	---	---	---	Open top.
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 *26-27 Sept: 10* Density of Brine *43* by *W. Haddel* 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 *+10°F & +15°F*, outflow and return brine *-15°C. & -12°C.*

atmosphere *12°C.* cooling water inlet and discharge *14.5°C. & 16°C.* gas in condensers *59-64* and evaporators *16.5-16*

the average temperature of the refrigerated chambers *12.5°F* and the rise of temperature in these chambers upon the expiration of *12-24* hours

time after the machinery and cooling appliances have been shut off *16°F - 21.6°F*

SPARE GEAR.

ARTICLES SUPPLIED AS PER RULE.	ADDITIONAL SPARE GEAR SUPPLIED.
1 half crankshaft: 1 steam piston rod and nut	2 sets of 4 valves & springs for comp.
1 piston for H.P. cylinder with rings	12 ball springs for comp. valves.
1 set piston rings for H.P. & L.P. cylinder.	1 guide for grinding in comp. valves.
1 set spring rings for each compressor piston.	1 set valve springs for brine pump
2 compressors pistons & rods complete.	1 set steam piston rings
1 plunger bucket & conn. rod with brayer for air pump.	1 Springs for water relief valve
1 bucket & rod for water pump. 1 H.P. slide valve piston type.	1 " " brine " "
1 H.P. slide valve spindle & nuts 1 additional brine pump in E.R.	3 " CO ₂ safety valves.
1 eccentric sheave, strap rod & brayer each piston	2 bolts & nuts for comp. rod coupl.
2 bolts & nuts for main bearings: 2 bolts & nuts for conn. rod	1 Pump for pressure lubricator.
top & bottom ends: 1 set of valves for	1 CO ₂ gauge.
air pump, water pump, brine pump & feed pump.	1 Dry thermometer.
1 set of 2 leather moulds	2 brass faced thermometers.
6 tubes & 24 ferrules for steam condenser.	12 Copper safety discs.
3 lengths each 1 1/2" x 1 1/2" piping and 3 1/2" bends.	1 1/2" CO ₂ gauge valve & 3 spare pipes
12 1/2" sockets & lock nuts each 1 1/2" x 1 1/2"	1 fitted box for comp. parts.
1 set catchet screwing disc 1 1/2" x 1 1/2": 1 regular valve spindle	1 Fan Motor Spares
Assorted bolts & nuts. 12 lubricator piston leather	1 Air machine packed for storage.
12 lubricator piston leather. 2 sets of copper joint rings	1 set field coils: 2 sets of fan brushes
for compressor joints and for other joints	1 line of brush holders 1 set bearings
2 sets of special metal packing rings for each comp. gland.	---

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery.

Manufacturer.

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DESCRIPTION OF INSULATION.

IN LOWER HOLD CHAMBERS.					IN 'TWEEN DECK CHAMBERS.				
FRAME No.	Air Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.	Inner Lining.	Air Space.	Outer Lining.	Non-conducting Material.	Thickness of ditto.
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. 65 (Engine Room)	A	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None
FRAME No. 40	F	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None
FRAME No.	A								
FRAME No.	F								
FRAME No.	A								
FRAME No.	F								
FRAME No. (After Peak)	F								
SIDES	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
OVERHEADING	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
FLOORS OF CHAMBERS	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
TRUNK HATCHWAYS	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
THRUST RECESS, SIDES AND TOP	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
TUNNEL SIDES AND TOP	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
TUNNEL RECESS, FRONT AND TOP	None	2x3/4" fir	300" 3/4"	None	None	2x3/4" fir	300" 3/4"	None	None
FRAMES OR REVERSE FRAMES, FACE 2" cork 2x3/4" fir									
Only on C.A. side 2 1/2" cork 2x3/4" fir BOTTOM 2" cork 2x3/4" fir AND FACE 2 1/2" cork 2x3/4" fir.									
BULKHEAD STIFFENERS, TOP 2 1/2" cork 2x3/4" fir									
RIBBAND ON TOP OF DECKS									
SIDE STRINGERS, TOP									
WEB FRAMES, SIDES									
BRACKETS, TOP									
INSULATED HATCHES, MAIN 1 1/2" pine 1/4" cork 1/4" fir 1 1/2" pine BILGE 1 1/2" pine 1/4" cork 1/4" fir 1 1/2" pine MANHOLE 1 1/2" pine 1/4" cork 1/4" fir 1 1/2" pine									
HATCHWAY COAMINGS, MAIN 9 1/2" pine BILGE 10 1/2" pine									
HOLD PILLARS 50" m cork slabs 2x3/4" fir.									
MASTS									
Are insulated plugs fitted to provide easy access to bilge suction roses Yes tank, air, and sounding pipes heels of pillars No									
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 1/2" galv. iron plates on tunnel top.									
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 No oil storage tanks.									
Coal Bunker Bulkheads, and Brine Outflow and Return Pipes passing through coal bunkers. Is the insulation, so far as practicable, fireproof Yes.									
Where Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof Yes.									
Cargo Battens, Dimensions and spacing, sides 2" x 1 1/2" 1/2" spacing floors 2" x 2" 1/2" apart tunnel top 3" x 3" 1/2" apart.									
fixed or portable fixed. Are screens fitted over the brine grids at chamber sides to grids hinged or permanently fixed									
Thermometer Tubes, No. and position in each chamber 2 in lower hold beside pillars Port side: 4 on 2 main decks beside pillars P & S.									
diameter 1 1/2" internal 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									
2 sluicers in hold, 4 in 2 main deck Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off Wood plugs.									
What provision is made for draining the refrigerating machinery room to the bilge									
brine return room to the bilge fin room 2 sluicers. water circulating pump room to the bilge									
Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers No air spaces.									

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Sounding Pipes, No. and position in each chamber situated below the load water line

4 after bulkhead insulation.

Diameter $2\frac{1}{8}$ " 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 Yes

Are cement facings reinforced with expanded steel lattice Yes

How is the expanded metal secured in place Yes

How are the cork slabs secured to the steel structure of the vessel Yes

Air Trunkways in Chambers, inside dimensions, main 1200×620 mm. and branch $860 \times 620 - 890 \times 620$ mm.

Are they permanently fixed or collapsible, or portable permanently fixed. State position in chambers

Along bulkheads.

Where air trunkways pass through watertight bulkheads, are they fitted with watertight doors Yes Are the door frames efficiently insulated Yes

Are insulated plugs supplied for the doorways Yes

Where are the doors worked from Yes

Cooling Pipes in Chambers, diameter Yes

Are they galvanised externally Yes

How are they arranged in the chambers Yes

Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers Yes

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

MACHINEFABRIEK & SCHEEPSWERF

van P. SMIT Jr.

Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery (If not, state date of approval)

and Insulation 11-6-10

Is the Refrigerating Machinery and Appliances duplicate of a previous case No If so, state name of vessel Complete.

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 and appliances have been fitted and tested as required by the Society's rules, insulation and machinery all made as per approved specification. The whole was found in a good working condition during the test taken and I am of opinion that this vessel is eligible to be recorded in the Society's register book with record of **† LLOYD'S R.M.C. 10-28.**

It is submitted that this vessel is eligible for THE RECORD. + LLOYDS

R.M.C. 9.28.

CERTIFICATE WRITTEN: 11.10.28

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					POWER.		INSULATED CARGO CHAMBERS.	
No. and whether Single or Duplex.	Makers.	Date of Construction.	System.	Type.	System of (1) Refrigerating (2) Insulating the Chambers.	Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No. Capacity.
1 Double	J. & C. Hall Ltd.	1920	Carl Benz	Hall.	(1) Air (2) Green Gase Slab Cork.	224	2.4	2 41,000

Fee £94.00 Fee applied for, 5th 1922.

Travelling Expenses £21.00 Received by me, 10.1.1929

Committee's Minute

FRI. 12 OCT 1928

Assigned

+ Lloyd's R.M.C. 9.28

W. H. A. Redales

Mr. W. H. A. Redales

Surveyor to Lloyd's Register.



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