

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office 30 SEP 1939)

Date of writing Report 18/9 39 When handed in at Local Office _____
 Port of Copenhagen
 No. in Reg. Book. 33954 Survey held at AARHUS - ODENSE Date: First Survey 26/4 1939 Last Survey 15/9 1939
 (No. of Visits 22)

on the Refrigerating Machinery and Appliances of the "SOMMELSDYK" Tons { Gross 7227.14
 Net 5517.53

Vessel built at Odense By whom built Odense Haalskibvaerft No. 77 When built 1939

Owners _____ Port belonging to Rothsildan Voyage U.S.A.

Refrigerating Machinery made by J. THOMAS THS. SABROE & Co. Machine No. 12446-7-8 When made 1939

Insulation fitted by Odense Haalskibvaerft When fitted 1939 System of Refrigeration CARB. ANHYD.

Method of cooling Cargo Chambers Brine & Air Insulating Material used Flab cork

Number of Cargo Chambers insulated 6 Total refrigerated cargo capacity 9400 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed on platform deck, pt. side for. used in engine room

Refrigerating Units, No. of 3 Single, double, or triple single Cubic feet of air delivered per hour 532.800

Total refrigeration or ice-melting capacity in tons per 24 hours 22.1 Are all the units connected to all the refrigerated chambers Yes

Compressors, driven direct or through single reduction gearing. Compressors, single or double acting single acting No. of cylinders 3

Diameter of cylinders 60 in Diameter of piston rod 30 in Length of stroke 140 in No. of strokes per minute 400

Motive Power supplied from 3 of 240 kwh generators, each driven by a 6-cyl. DeSVA oil engine.

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 _____

Electric Motors, type D.C. dip pump, ventilator No. of 3 Rated 23 H.P. Kilowatts 220

Volts at 400 revolutions per minute. Diameter of motor shafts at bearings 60 in

Reduction Gearing, maximum shaft horse power at 1st pinion _____ Revolutions per minute at full power at 1st pinion _____

1st 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 _____

_____ Diameter at wheel shroud, 1st _____ Main _____

Condensers, No. of 3 Cast iron or steel casings cast iron Cylindrical or rectangular cylindrical

of coils in each 1 Material of coils copper 18/24 in dia. Can each coil be readily shut off or disconnected Yes

Brine Circulating Pumps, No. and size of 1 of 3.6 t/h 2 of 5.0 t/h 1 of 130 in. how worked electrically Oil Gas Separators, No. of 3

Evaporators, No. of 3 Cast iron or steel casings steel plate, cylindrical Pressure or gravity type pressure type

of coils in each casing 1 Material of coils steel, 25/33 in Can each coil be readily shut off or disconnected Yes

Expansion or Brine Cooled Batteries, No. of 4 Are there two separate systems, so that one may be in use while the other is being

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

connected _____ Total cooling surface of battery coils _____ Is a watertight tray fitted under each battery _____

Circulating Fans, Total No. of 6 each of 1720-1720-1720 cubic feet capacity, at 1400-1400-1400 revolutions per minute

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 of 9 t/h how worked electrically

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

No. of brine sections in each chamber 2, only fitted in the two centre chambers.

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



CERTIFICATE

Surveyed the

vessel "SOM"

constructed

while being

Staalskipsvaerft

accordance

with the

Regulations

of the

Committee

of the

Shipping

Industry

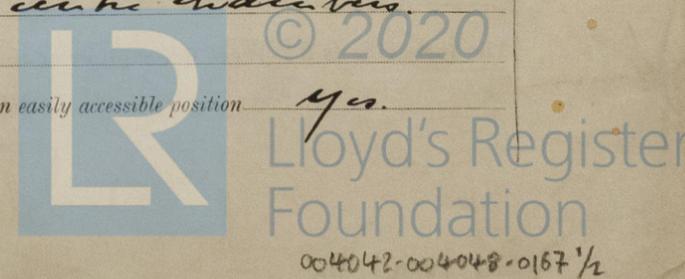
of the

United

Kingdom

of Great

Britain



Are thermometers fitted to the outflow and to each return brine pipe yes. Where the tanks are closed are they ventilated as per Rule open.

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

HYDRAULIC AND OTHER TESTS.

DESCRIPTION.	Date of Test.	Working Pressure.	Hydraulic Test Pressure.	Air Test Pressure.	Stamped.	REMARKS.
ENGINE CYLINDERS (IF TESTED)						
GAS COMPRESSORS	26/4 39	ca. 70 lbs	210 lbs	105 lbs	LLOYD TEST H.P. 210 ATT. R.A.P. 105 ATT. CU 26.4.39	
SEPARATORS						
CONDENSER COILS	17/5 39	"	"	"	H.P. 210 ATT. R.A.P. 105 ATT. CU 17.5.39	
EVAPORATOR COILS						
MULTIPLE EFFECT RECEIVERS	14/6 39	"	"	"	H.P. 210 ATT. R.A.P. 105 ATT. CU 14.6.39	
CONDENSER CASINGS	17/5 39	ca. 5 lbs	15 lbs		LLOYD TEST 15 LBS CU 17.5.39	
EVAPORATOR CASINGS	17/5 39	ca. 1.5 lbs	3.5 lbs		CU	
NH ₃ CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE						
BRINE PIPING AFTER ERECTION IN PLACE	28/8 39			90 lbs		

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

Dates of test 5/9, 19, 21/9 Density of Brine 28° by Samuel 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 ~~the~~ brine cooled batteries -17° & -12.8°, outflow and return brine atmosphere 19.5° cooling water inlet and discharge 19.5° & 21.6° gas in condensers +24.5° and evaporators -20°
 the average temperature of the refrigerated chambers 1.05 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 5.05 8.13° C.

SPARE GEAR.

Are the machines in accordance with Section 4, Clause 2 of the Rules yes.

Are the working parts of the machines, pumps and motors respectively, interchangeable yes.

ARTICLES SUPPLIED AS PER APPROVED SPECIFICATION ADDITIONAL SPARE GEAR SUPPLIED.

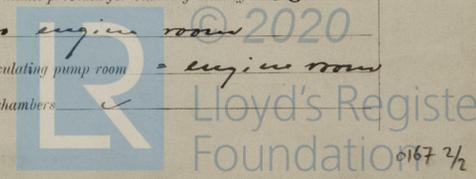
- 1 set of crank shaft coupling bolts.
 - 1 compressor piston & piston rod.
 - 1 set piston rings.
 - 1 connecting rod bottom end bearing w. bolts.
 - 1 connecting rod top end bearing.
 - 1 crosshead pin.
 - 1 set main bearing brasses with bolts.
 - 2 delivery valves complete.
 - 2 suction valves.
 - 2 delivery & 2 suction valve springs.
 - 1 set metallic packings for 1 piston rod.
 - 25 safety ties 1/40 dia.
 - 25 " " 80 dia.
 - 1 length of coil and brine pipes of each size.
 - 6 sets of pipe joint rings of each size.
 - 1 set of pipe joint material.
 - 1 spindle for coil gas regulating valve.
 - 1 " " each size of brine valves.
 - 1 sieve for seal trap.
 - 1 coil pressure gauge.
 - 1 coil charging pipe.
 - 1 thermometer.
 - 3 brine thermometers.
 - 2 cooling water thermometers.
 - 1 valve spindle for each coil valve.
 - 12 sockets to back ends for each size of brine pipes.
 - 2 set of flanges for each size of coil pipes.
 - 1 set of washers for multiple flange joints.
 - 1 set of studs, nuts, washers, flanges & fittings.
- FOR EACH SIZE OF BRINE PUMP AND COOLING WATER PUMP.
- 1 impeller with shaft.
 - 1 set of bearings.
 - 1 armature with bearing.
 - 1 set of field & interpole coils.
 - 1 set of carbon brushes.
 - 1 set of brush holders.
 - isolated small parts for motor shafts.
- FOR COMPRESSOR MOTORS:
- 1 armature.
 - 1 set of bearings.
 - 1 set of field & interpole coils.
 - 1 set of carbon brushes.
 - 1 set of brush holders.
 - isolated small parts for motor shafts.
- FOR EACH SIZE OF FAN WITH MOTOR:
- 1 propeller.
 - 1 armature with bearing.
 - 1 set of field coils & interpole coils.
 - 1 set of carbon brushes.
 - 1 set of brush holders.
 - isolated small parts for motor shafts.

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery. THOMAS THS. SABROE & CO. 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. 101	F					✓	✓	cake slabs	338	Expanded steel lattice & 1 1/2" cement
	A					✓	✓	"	50	2 1/2" Pine
FRAME No. 106	F					✓	✓	cake slabs	250	Expanded steel lattice & 1 1/2" cement
	A					✓	✓	"	100	"
FRAME No. 111	F					✓	✓	"	75	"
	A					✓	✓	"	75	"
FRAME No. (Boiler Room)	F									
FRAME No. (Engine Room)	A									
FRAME No. 119	F					✓	✓	cake slabs	50	2 1/2" Pine
	A					✓	✓	"	300	Expanded steel lattice & 1 1/2" cement
FRAME No.	F									
	A									
FRAME No.	F									
	A									
FRAME No. (After Peak)	F									
SIDES						✓	✓	cake slabs	338	Expanded steel lattice & 1 1/2" cement
OVERHEADING						✓	✓	"	365	"
FLOORS OF CHAMBERS						✓	✓	"	350	19+25" Pine
TRUNK HATCHWAYS										
THRUST RECESS, SIDES AND TOP										
TUNNEL SIDES AND TOP										
TUNNEL RECESS, FRONT AND TOP										
FRAMES OR REVERSE FRAMES, FACE										
BULKHEAD STIFFENERS, TOP										
RIBBAND ON TOP OF DECKS										
SIDE STRINGERS, TOP										
WEB FRAMES, SIDES										
BRACKETS, TOP										
INSULATED HATCHES, MAIN										
HATCHWAY COAMINGS, MAIN										
HOLD PILLARS										
MASTS										
Are insulated plugs fitted to provide easy access to bilge suction roses						✓				✓
and manhole doors of tanks						✓				✓
Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected						✓				✓
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						✓				✓
fixed or portable						✓				✓
Are screens fitted over the brine grids at chamber sides						✓				✓
Thermometer Tubes, No. and position in each chamber						1				✓
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. Where the chambers are situated below the load water line, 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						1 of 1 1/2" scupper to engine room				✓
brine return room						1 of 2 1/2" scupper to engine room				✓
water circulating pump room						1 of 2 1/2" scupper to engine 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 nailed with galv. steel cramps.
 How are the cork slabs secured to the steel structure of the vessel laid in glue and the outer layers nailed together with bar nails and
Air Trunkways in Chambers, inside dimensions, main 520 x 280 Z and branch 350 x 70 Z to wood spars with nails of galv. steel
 Are they permanently fixed or collapsible, or portable. permanent State position in chambers under deck.
 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 lower deck
Cooling Pipes in Chambers, diameter 38/48 in. Are they galvanised externally. yes.
 How are they arranged in the chambers in flat girds under deck and on open wood bulkheads - only fitted in the two centre chambers
Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers Brine heater fitted.

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

Wm. Petersen Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery 24/4 39 and Insulation 12/1 39.
 (If not, state date of approval)
 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.) The Refrigerating machinery with Appliances herein described has been constructed and fitted under special survey and in accordance with the Society's Rules, the approved plans and specifications and the requirements contained in the Secretary's letters E dated 12/1 1939.

On completion of the installation the machinery was tried under working conditions and found to work satisfactorily and the insulation tested as stated on page 2 of this report.

Recommend the vessel to have notation of + LLOYD'S R.M.C. 9.39
 It is submitted that this vessel is eligible for THE RECORD, + Lloyd's R.M.C. 9.39 R.M. 3/10/39.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	POWER.		INSULATED CARGO CHAMBERS.	
No. of Units.	No. of Compressors.	System.	Makers.	Date of Construction.		Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No.	Capacity. Cubic ft.
3	3	CARBONIC ANHYDRID	AS THOMAS THS. JABROE & CO.	1939	1/2 BRINE & AIR 2/2 SLAB CORK cement faced	532800	22.1	6	9400

Fee KR. 375.00 { Fee applied for, 28.9.1939
 Travelling Expenses & hall fee " 66.00 { Received by me, 20.1.1940
 Committee's Minute

Christoffer S. Sanderson
 Surveyor to Lloyd's Register.

Assigned *W. A. G. + Lloyd's R.M.C. 9.39*

CERTIFICATE WRITTEN.



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Certificate to be sent to