

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office OCT 10 1938)

Date of writing Report 28th March 1938. When handed in at Local Office

Port of **STETTIN**

No. in

Reg. Book.

Survey held at **Berlin-Tegel** Date: First Survey 23rd July 37. Last Survey 15th Febr. 1938

(No. of Visits 13.)

on the Refrigerating Machinery and Appliances of the **W. V. P. Smit jr.** Tons { Gross.....
Net.....Vessel built at **Rotterdam** By whom built **W. V. P. Smit jr.** Yard No. **515**. When built **1938**.

Owners

Port belonging to

Voyage

Refrigerating Machinery made by **Rheinmetall-Borsig & Co.** Machine No. **1129/46**. When made **1938**.Insulation fitted by When fitted System of refrigeration **CO₂**.

Method of cooling Cargo Chambers

Insulating Material used

Number of Cargo Chambers insulated

Total refrigerated cargo capacity

cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed

Refrigerating Units, No. of **3**. No. of machines **3**. Is each machine independent **yes**.Total refrigeration or ice-melting capacity in tons per 24 hours Are all the units connected to all the refrigerated chambers **yes**.Compressors, driven direct ~~or through~~ ^{single} ~~double~~ reduction gearing. Compressors, single or double acting **double**. If multiple effect compressionare relief valves or safety discs fitted **yes**. No. of cylinders to each unit **2**. Diameter of cylinders **65 mm.**Diameter of piston rod **35 mm.** Length of stroke **110 mm.** No. of revolutions per minute **340**.

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 **3**.

Cast iron or steel casings

Double pipe

Cylindrical or rectangular

Are safety valves fitted

to casings

No. of coils in each

Material of coils **S. H. steel**.Can each coil be readily shut off or disconnected **yes**.Water Circulating Pumps, No. and size of **1 rotary of 36 cm³/s**

how worked

el. motor.Gas Separators, No. of **3**.Gas Evaporators, No. of **Compartments**

Cast iron or steel casings

steel.Pressure or gravity type **Open**.

If pressure type, are safety

valves fitted

No. of coils in each casing **3**.Material of coils **S. H. Steel**.Can each coil be readily shut off or disconnected **yes**.

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 **3**.each of **1800/3000** cubic m capacity, at**1400**

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 rotary, each 9 cm³/s

how worked

electrically.

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

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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)			kg per sq cm.			
GAS COMPRESSORS	13.12.34	90 kg.	210	105.		LLOYD'S TEST 210/105 ATs. NS. & date.
" SEPARATORS	12.2.38	"	"	"	"	
" INTERCOOLERS	"	60 kg.	"	"	"	
" CONDENSER COILS	"	90 "	"	"	"	
" EVAPORATOR COILS	22.12.34	20 "	"	"	"	(as Fisa)
" CONDENSER HEADERS AND CONNECTIONS	12.2.38	90 "	"	"	"	
" CONDENSER CASINGS	4.2.38	"	"	"	"	LLOYD'S TEST 0.1 ATs.
" EVAPORATOR CASINGS	20.1.38	-	0.1	-		
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 Density of Brine by 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 &

atmosphere cooling water inlet and discharge & gas in condensers and evaporators

the average temperature of the refrigerated chambers and the rise of temperature in these chambers upon the expiration of 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 yes

Has the spare gear required by the Rules been supplied As approved.

Additional Spare Gear Supplied:-

The foregoing is a correct description of the Refrigerating Machinery.

RHEINMETALL-BORSIG
AKTIEGESELLSCHAFT WERK BORSIG BERLIN-TEGEL

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.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No.	A									
FRAME No.	F									
FRAME No. (Boiler Room)	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

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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 *yes, under* and Insulation *separate cover.*
(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.)

The compressors, condensers, evaporators, oil separators, strainers and intercoolers of this installation are made under Special Survey in accordance with the approved plans and the Secretary's letters. They have been tested as required and were found tight and sound, also in all parts of efficient workmanship.

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.				No.	Capacity.
3	3	CO ₂	Phinmhall - Boreig, Ag.	1938	Brine & air	Tons.	yes.		Cubic ft.

Fee RM 160 - { Fee applied for, 26.2. 1938.
Travelling Expenses # 1.15: { Received by me, 31.3 1938

M. G. G. G.
Surveyor to Lloyd's Register.

Committee's Minute TUE 8 NOV 1938

Assigned See RMC 68058



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