

ADDITIONAL REFRIGERATING MACHINERY.

Rpt. 17.

141482.

Liv.

No. 142498.

Report on Refrigerating Machinery and Appliances.

27 JUL 1955

Date of writing Report 19 JUL 1955 When handed in at Local Office 19 JUL 1955 Port of LIVERPOOL

No. in Reg. Book. Survey held at LIVERPOOL Date: First Survey 9 6 55 Last Survey 26 6 55 (Number of Visits 8)

on the Refrigerating Machinery and Appliances of the M.V. PACUARE Tons Gross 3675 Net 2101

Vessel built at Vaguerak By whom built Bremer Vulkan Yard No. ✓ When built 1934

Owners. Elms and Jyffe Ltd Port belonging to Voyage.

Refrigerating Machinery made by J. & E. Hall Ltd Machine Nos. 81352 When made 1955

Insulation fitted by Grayson, Rolfe & Co. Ltd. When fitted 1955 System of Refrigeration FIR

Method of cooling Cargo Chambers Direct expansion Insulating Material used Slab cork and Fibreglass

Number of Cargo Chambers insulated 2 Total refrigerated cargo capacity cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed. Newcastle

Refrigerating Units, No. of 1 No. of machines 1 Is each machine independent. ✓

Total refrigeration or ice-melting capacity in tons per 24 hours 1.65 Are all the units connected to all the refrigerated chambers. ✓

Compressors, driven direct or through single or double reduction gearing. Compressors, single or double acting single If multiple effect compression no

Are relief valves or safety discs fitted Pressure cut out No. of cylinders to each unit 4 no. Diameter of cylinders 2 1/2 ins

Diameter of piston rod 3/8 ins Length of stroke 2 1/2 ins No. of revolutions per minute 500

Motive Power supplied from 4 - Main generators (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 1 Diameter 1.57 ins 1.75 ins

Length of stroke 10 ins Working pressure 100 psi Diameter of crank shaft journals and pins 1.57 ins 1.75 ins

Breadth and thickness of crank webs 4 5/8 dia x 1 1/4 No. of sections in crank shaft one Revolutions of engines per minute 500

Oil Engines, type 2 or 4 stroke cycle Single or double acting B.H.P.

No. of cylinders 2 Diameter 10 ins Length of stroke 10 ins Span of bearings as per Rule.

Maximum pressure in cylinders 100 psi Diameter of crank shaft journals and pins 1.57 ins 1.75 ins

Breadth and thickness of crank webs 4 5/8 dia x 1 1/4 No. of sections in crank shaft one Revolutions of engine per minute 500

Air Receivers: Have they been made under survey. State No. of Report or Certificate.

Is each receiver, which can be isolated, fitted with a safety valve as per Rule.

Can the internal surfaces of the receivers be examined and cleaned. Is a drain fitted at the lowest part of each receiver.

No. of Receivers 1 Cubic capacity of each 10 cu ft Internal diameter 10 ins thickness 1/2 ins

Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules.

Electric Motors, type Mann J type Grip Proof No. of 1 Rated 4 HP Kilowatts 2.20 Volts

at 1750 revolutions per minute. Diameter of motor shafts at bearings 1 1/2 ins

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 shaft, diameter at bearings Main wheel shaft, diameter at bearings

Gas Condensers, No. of 1 Cast iron or steel casings steel Cylindrical or rectangular cylindrical Are safety valves fitted

to casings no No. of coils in each 35 Material of coils Yoncalbro Can each coil be readily shut off or disconnected no

Water Circulating Pumps, No. and size of pumps available 3 Ballast Pump 79 gals/min. Electrically Gas Separators, No. of 1

Gas Evaporators, No. of 1 Cast iron or steel casings Pressure or gravity type If pressure type, are safety

valves fitted. No. of coils in each casing 14 Material of coils steel Can each coil be readily shut off or disconnected.

Direct Expansion or Brine Cooled Batteries, No. of 17 Are there two separate systems, so that one may be in use while the other is being

cleared of snow no No. of coils in each battery 2 in each space Material of coils steel Can each coil be readily shut off or

disconnected no Total cooling surface of battery coils 260 sq. ft. Is a watertight tray fitted under each battery. no

Air Circulating Fans, Total No. of 1 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.

1m. 6.5L (MADE AND PRINTED IN ENGLAND.)

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) ...		lbs/sq. ins.	lbs/sq. ins.	lbs/sq. ins.		
Gas Compressors ...	25-3-55	120	350	200	EMS	
Separators ...	25-3-55	120	350	200	EMS	
Crankcase ...	25-3-55	-	200	150	EMS	
Multiple Effect Receivers ...	25-3-55	-	200	150	EMS	
Condenser Coils and covers ...	29-3-55	15	100	-	EMS	
Drum expansion grids ...	5-4-55	120	350	200	EMS	
Evaporator Coils ...	22-4-55	120	350	200	EMS	
Suction vessel ...	22-3-55	120	350	200	EMS	
Condenser Headers and Connections ...	25-3-55	120	350	200	EMS	
Condenser Casings + tubes ...	22-3-55	120	350	200	EMS	
Evaporator Casings ...	25-3-55	120	350	200	EMS	
Condenser, Evaporator and Air Cooler Coils after erection in place ...	23-6-55	120	-	200	W.A.L.	
Brine Piping after erection in place...						

Have important steel castings and forgings been tested in accordance with the Rules Yes
Cooling Test. Has the refrigerating machinery been examined under full working conditions, and found satisfactory Yes
Dates of test 25-26/6/55 Density of Brine ✓ by ✓ hydrometer
Temperatures (when the cargo chambers are cooled down to the required test temperatures) of delivery and return air at direct expansion or brine cooled batteries ✓ & ✓, outflow and return brine ✓ & ✓
atmosphere 65°F cooling water inlet and discharge 61°F & 66°F gas in condensers 70°F and evaporators -20°F
the average temperature of the refrigerated chambers 0°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 33°F

SPARE GEAR.

Are the working parts of the machines, pumps and motors respectively, interchangeable ✓
Has the spare gear required by the Rules been supplied Yes
Additional Spare Gear Supplied: See London Report No R 7270

The foregoing is a correct description of the Refrigerating Machinery.

J. & E. HALL, Ltd.
51, EGERTON STREET,
BIRKENHEAD
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) PORT CHAMBER	A									
Frame No. 148	F					-	-	FIBREGLASS	11 INS.	GALVANISED SHEET METAL
Frame No. 142	F					-	-	DO	6 INS	DO
STARBOARD CHAMBER	A					-	-	DO	6 INS	DO
Frame No. 155	F					-	-	DO	11 INS	DO
Frame No. 148 (Boiler Room)	A					-	-	DO	11 INS	DO
Frame No. (Engine Room)	A									
Frame No.	F									
Frame No.	A									
Frame No.	F									
Frame No.	A									
Frame No. (After Peak)	F					-	INBOARD OUTBOARD	FIBREGLASS	11 INS	DO
Sides ...						-	DO	FIBREGLASS	13 INS	DO
Overheading ...						-	-	DO	11 INS	DO
Floors of Chambers ...						-	-	SLAB CORK	8 INS	CEMENT.
Trunk Hatchways ...										
Thrust Recess, Sides and Top ...										
Tunnel Sides and Top ...										
Tunnel Recess, Front and Top ...										

Frames or Reverse Frames, Face 4 INS. OVER.
Bulkhead Stiffeners, Top ✓ Bottom ✓ and Face ✓
Ribband on Top of Decks ✓
Side Stringers, Top ✓ Bottom ✓ and Face ✓
Web Frames, Sides ✓ and Face ✓
Brackets, Top and Bottom and and Face 5 INS OVER.
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 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 2" x 31" floors portable tunnel top ✓
fixed or 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
diameter ✓ 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 None
Draining Arrangements. What provision is made for draining the inside of the chambers 2" Bore trapped scupper overboard. Shipside valve controlled from deck.
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 2" Bore scupper to overboard discharge valve controlled from deck.
brine return room ✓ fan room ✓ water circulating pump room to engine room bilge
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.....Hot bitumen
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.....Yes
Are insulated plugs supplied for the doorways.....Yes Where are the doors worked from.....Forecastle alleyway.
Cooling Pipes in Chambers, diameter.....1 1/2 ins. Minimum thickness.....7wg Are they galvanised externally.....Yes
How are they arranged in the chambers.....1 Roof and 1 Side circuit
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.

John Bennett

For and on behalf of
GRAYSON, ROLLO & CLOVER DOCKS LTD. Builders.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery.....Yes and Insulation.....Yes
(If not, state date of approval)
Is the Refrigerating Machinery and Appliances duplicate of a previous case.....Yes If so, state name of vessel.....M.V. NICOSIA (Difference in capacity of chambers)
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 of this vessel have been constructed under Special Survey in conformity with the Society's Rules and Regulations and the Secretary's letters. The scantlings and arrangements are in accordance or equivalent to those shown on the approved plans. The materials and workmanship are good.
In my opinion the installation is eligible for Classification and the notation +1108D'S RMC 6.55 "to maintain temp 15°F in the Port and Starboard chambers with sea temp 85°F maximum"

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.
1	4	DICHLORO- DIFLUORO- METHANE	J & E HALL LTD.	1955	DIRECT EXPANSION FIBRE GLASS - CORK	1.65	YES	2	730

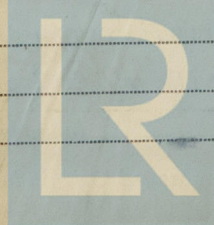
At Liverpool 20-8-55
Fee £40 : 10 : 0 Fee applied for, 22 JUL 1955
At London 20-1-6
Travelling Expenses £1 : 14 : 0 Received by me, 19

W. A. Legg
Surveyor to Lloyd's Register.

Committee's Minute

Assigned

+ Lloyd's Rmc 6.55
to maintain temp 15°F in the
port & starboard chambers with
sea temp 85°F max.



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Lloyd's Register
Foundation