

ADDITIONAL REFRIGERATING MACHINERY.

Rpt. 17.

141482. *Liv*

No. 142498

Report on Refrigerating Machinery and Appliances.

27 JUL 1955

*1/12/55
27 Jul 55
19/11/55*

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 Veguack By whom built Bremer Vulkan Yard No. ✓ When built 1934

Owners Elers and Fryffe Ltd Port belonging to Voyage

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

Insulation fitted by Grayson, Rolfe & Clowes Dock St. 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 *Forecastle*

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} *reduction* ~~double~~ 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 inch piston* 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 ✓ Diameter ✓

Length of stroke ✓ Working pressure ✓ 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 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: 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 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 *Manie type drip proof* No. of 1 Rated 4 HP Kilowatts 220 Volts

at 1750 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 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 pumps how worked Electrically* Gas Separators, No. of 1

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

No. of coils in each casing Material of coils 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 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.

111.6.51. (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 ...						
Condenser Coils and covers ...	29-3-55	15	100	-	EMS	
Drum expansion grids	5-4-55					
Evaporator Coils ...	22-4-55	120	350	200	EMS	
Suction seal	22-3-55					
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					
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. A										
(Fore Peak) PORT CHAMBER										
Frame No. 148								FIBREGLASS	11 INS.	GALVANISED SHEET METAL
Frame No. 142								- DO -	6 INS	- DO -
								- DO -	6 INS	- DO -
STARBOARD CHAMBER										
Frame No. 155								- DO -	11 INS	- DO -
								- DO	11 INS	- DO -
Frame No. 148 (Boiler Room)										
Frame No. (Engine Room)										
Frame No.										
Frame No.										
Frame No.										
Frame No.										
Frame No. (After Peak)								INBOARD FIBREGLASS	11 INS	- DO -
Sides ...								OUTBOARD 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		<input checked="" type="checkbox"/>		Bottom	<input checked="" type="checkbox"/>			and Face	<input checked="" type="checkbox"/>	
Ribband on Top of Decks		<input checked="" type="checkbox"/>								
Side Stringers, Top		<input checked="" type="checkbox"/>		Bottom	<input checked="" type="checkbox"/>			and Face	<input checked="" type="checkbox"/>	
Web Frames, Sides		<input checked="" type="checkbox"/>		and Face	<input checked="" type="checkbox"/>					
Brackets, Top		<u>and</u>		Bottom	<u>and</u>			and Face	5 INS OVER.	
Insulated Hatches, Main		<input checked="" type="checkbox"/>		Bilge	<input checked="" type="checkbox"/>			Manhole	<input checked="" type="checkbox"/>	
Hatchway Coamings, Main		<input checked="" type="checkbox"/>		Bilge	<input checked="" type="checkbox"/>					
Hold Pillars		<input checked="" type="checkbox"/>								
Masts		<input checked="" type="checkbox"/>		Ventilators	<input checked="" type="checkbox"/>					
Are insulated plugs fitted to provide easy access to bilge suction roses... <input checked="" type="checkbox"/> tank, air, and sounding pipes... <input checked="" type="checkbox"/> heels of pillars... <input checked="" type="checkbox"/> and manhole doors of tanks... <input checked="" type="checkbox"/> Are insulated plugs fitted to ventilators... <input checked="" type="checkbox"/> cargo ports... <input checked="" type="checkbox"/> and side lights... <input checked="" type="checkbox"/> Is the insulation of the lower hold floor and tunnel top in way of the hatchways protected... <input checked="" type="checkbox"/> if so, how... <input checked="" type="checkbox"/>										
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... <input checked="" type="checkbox"/> and for draining the tank top... <input checked="" type="checkbox"/>										
Fireproof Insulation. Is the insulation and woodwork fireproof in way of bunkers or any surfaces exposed to excessive heat... <u>Yes</u> Where Cooling Pipes pass through watertight bulkheads or deck plating, are the fittings and packing of the stuffing boxes both watertight and fireproof... <u>Yes</u> Cargo Battens, Dimensions and spacing, sides <u>2" x 2" x 31"</u> floors <u>portable</u> tunnel top... <input checked="" type="checkbox"/> fixed or portable... <input checked="" type="checkbox"/> Are screens fitted over the brine grids at chamber sides... <u>Yes</u> hinged or permanently fixed <u>hinged</u> Thermometer Tubes, No. and position in each chamber. diameter... <input checked="" type="checkbox"/> are they fitted in accordance with Section 3, Clause 8... <u>Yes</u> Protection of Pipes. Are all pipes, including air and sounding pipes, which pass through or into insulated chambers, well insulated... <u>None</u> Draining Arrangements. What provision is made for draining the inside of the chambers... <u>2" Bon scupper overboard. Shipside valve controlled from deck.</u> Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off... <input checked="" type="checkbox"/> What provision is made for draining the refrigerating machinery room... <u>2" Bon scupper to overboard discharge valve controlled from deck.</u> brine return room... <input checked="" type="checkbox"/> fan room... <input checked="" type="checkbox"/> water circulating pump room... <u>To engine room bilge</u> Are all air spaces behind insulation arranged to drain to the bilges, bilge wells, or gutterways of the respective chambers... <input checked="" type="checkbox"/>										

© 2020

Lloyd's Register Foundation

0276 212

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 + LLOYD'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 £20-8-6
 Fee £40 : 10 : 0 Fee applied for, 22 JUL 1955
 Travelling Expenses £1 : 14 : 0 Received by me, 19

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

Committee's Minute **LIVERPOOL** 26 JUL 1955

Assigned *+ Lloyd's Rmc 6,55 to maintain temp 15°F in the port & starboard chambers with sea temp 85°F max.*



© 2020

Lloyd's Register Foundation

Certificate to be sent to