

## Report on Refrigerating Machinery and Appliances.

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 78568 (Number of Visits 3)

on the Refrigerating Machinery and Appliances of the m/v "Telemachus" Tons Gross 8265 Net 4857  
 Vessel built at Dundee By whom built Galedon S.S. & Co. Ltd. Card No. 397 When built 1943  
 Owners Ocean S.S. Co. Ltd. Port belonging to Liverpool Voyage —  
 Refrigerating Machinery made by J. & E. Hall Ltd. Machine Nos. 9993 & 9869 When made —  
 Insulation fitted by — When fitted — System of Refrigeration Carb. Ammonia  
 Method of cooling Cargo Chambers Brine & Air Insulating Material used CORK  
 Number of Cargo Chambers insulated 6 Total refrigerated cargo capacity — cubic feet

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed Engine Room Port side forward.  
 Refrigerating Units, No. of 2 No. of machines 2 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 ~~on the shaft~~ induction gearing. Compressors, single or double acting Single If multiple effect compression Yes

Are relief valves or safety discs fitted Yes No. of cylinders to each unit 2 Diameter of cylinders 3 1/2 in

Diameter of piston rod 1 1/32 in Length of stroke 7 in No. of revolutions per minute 360/240

Motive Power supplied from 4 Diesel 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 —

Breadth and thickness of crank webs — No. of sections in crank shaft — Revolutions of engines per minute —

Oil Engines, type Allison 2 or 4 stroke cycle Single or double acting Single B.H.P. 363

No. of cylinders 5 Diameter 325 mm Length of stroke 370 mm Span of bearings as per Rule —

Maximum pressure in cylinders — Diameter of crank shaft journals and pins 9 1/16 in 8 in

Breadth and thickness of crank webs 2 7/16 x 12 No. of sections in crank shaft 1 Revolutions of engine per minute 375

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 Yes

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

No. of Receivers 4 Cubic capacity of each 11 cu. ft. Internal diameter — thickness —

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

Electric Motors, type OPEN DRIP PROOF No. of TWO CONTINUOUSLY RATED 90 HP Kilowatts 220 Volts

at 240/360 revolutions per minute. Diameter of motor shafts at bearings 4 1/2 in

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 2 Cast iron or steel casings 16 in 1 Copper Cylindrical or rectangular 1 cyl. 1 bath Are safety valves fitted

to casings Yes No. of coils in each 11 x 6 Material of coils Copper Can each coil be readily disconnected Yes

Water Circulating Pumps, No. and size of pumps available 1 @ 24,000 S.F.H. how worked Electric Gas Separators, No. of 2

Gas Evaporators, No. of 2 Cast iron or steel casings 20 in 2 Steel Pressure or gravity type pressure If pressure type, are safety

valves fitted Yes No. of coils in each casing 9 Material of coils S.D. Steel Can each coil be readily disconnected Yes

Direct Expansion or Brine Cooled Batteries, No. of 2 Are there two separate systems, so that one may be in use while the other is being

cleared of snow Yes No. of coils in each battery 5 Material of coils S.D. Steel Can each coil be readily shut off or

disconnected Yes Total cooling surface of battery coils — Is a watertight tray fitted under each battery Yes

Air Circulating Fans, Total No. of 2 : 15 HP each of 15,000 2,000 cubic feet capacity, at 2,000 revolutions per minute

Steam or electrically driven ELECTRICALLY Where spare fans are supplied are these fitted in position ready for coupling up. SPARE STORED ON BOARD

Brine Circulating Pumps, No. and size of, including the additional pump 3 @ 13,000 S.F.H. how worked Electrically

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

No. of brine sections in each chamber L.T.D. P. & S. Lockers 4 in each, Centin Lockers 2 in each

square of hold 2

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

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

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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... 44 2  
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... British Corporation Rules Yes  
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)						
Gas Compressors						
Separators						
Multiple Effect Receivers						
Condenser Coils (Aft)	9/4/51	980.	-	2000	-	Satisfactory
Evaporator Coils (Port)	9/4/51	250.	-	2000.	-	Satisfactory
Condenser Headers and Connections						
Condenser Casings						
Evaporator Casings						
NH <sub>3</sub> Condenser, Evaporator and Air Cooler Coils after erection in place						
Brine Piping after erection in place...	9/4/51	20	45	-	-	Satisfactory

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 46°F by Woodhall 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 -6°F & 8°F, outflow and return brine -20°F & -15°F

atmosphere 45°F cooling water inlet and discharge 42°F & 45°F gas in condensers 53°F and evaporators -21°F

the average temperature of the refrigerated chambers 11°F 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... Yes.

Additional Spare Gear Supplied: 1 - Compressor crankshaft.  
1 - Compressor lines  
1 - set of main bearings.  
1 - brine pump impeller & shaft.  
1 - circulating pump impeller & shaft.

The foregoing is a correct description of the Refrigerating Machinery.

Manufacturer.

### DESCRIPTION OF INSULATION.

IN LOWER HOLD CHAMBERS.

IN 'TWEEN DECK CHAMBERS.

BULKHEADS.

		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						No 3. LOWER TWEEN DECK.				
Frame No.	F										
Frame No. 104	A	FORE SIDE AFTER BUD NO 2 HOLD.	✓	2" AIR TANK 6" SPANNING.			PKS 84186. FORE SIDE.	✓	4" SOLICATE COTTON SLABS 8" GRANULATED COOK.	12"	1 1/2" T.G. SPRUCE.
	A	AFT SIDE	✓	GRAN COOK.	14"	1 1/2" T.G. SPRUCE.	PK 104. AFT SIDE.	✓	12" GRAN COOK.	12"	1 1/2" T.G. SPRUCE.
Frame No. 90	F	FORE SIDE.	✓	GRAN COOK.	12"	1 1/2" T.G. SPRUCE.					
	A										
Frame No. 84. (Boiler Room)	F	FORE SIDE.	✓	GRAN COOK.	8"	1 1/2" T.G. SPRUCE.					
	A						F.A.A. Lining 6" Gran Cook on Each Side of Bulkhead + 1 1/2" T.G. Spruce except in way of Hatch when it is 9" Gran Cook + 3" Sub Cook + 1 1/2" T.G. Spruce Lining				
Frame No. (Engine Room)	A						Overheading: 13" Gran Cook + 1 1/2" T.G.				
Frame No.	F						Floor: Blue Steel Deck.				
	A										
Frame No.	F										
	A										
Frame No. (After Peak)	F										
Sides		✓	✓	GRAN COOK.	15 1/2"	1 1/2" T.G.					
Overheading		✓	✓	GRAN COOK.	14"	1 1/2" T.G.					
Floors of Chambers				SLAB COOK	9" AT SIDES. 14" IN WAY OF 1 1/2" OUTER LINING. HATCH.						
Trunk Hatchways											
Thrust Recess, Sides and Top											
Tunnel Sides and Top											
Tunnel Recess, Front and Top											

Frames or Reverse Frames, Face 2 1/2" Insulation

Bulkhead Stiffeners, Top ✓ Bottom ✓ and Face 6" Insulation

Ribband on Top of Decks ✓

Side Stringers, Top ✓ Bottom ✓ and Face ✓

Web Frames, Sides ✓ and Face ✓

Brackets, Top ✓ Bottom ✓ and Face 2" Insulation

Insulated Hatches, Main 5" Oak Hair + 1 1/2" T.G. Top & Bottom Bilge 7" Oak Hair + 1 1/2" Double Top & Bottom Manhole 6" Oak Hair + 1 1/2" Double Top & Bottom

Hatchway Coamings, Main Solid Pine fixed face Bilge ✓

Hold Pillars 3" Oregon Pine + 3/16" Galvanized Iron Plates

Masts ✓ Ventilators ✓

Are insulated plugs fitted to provide easy access to bilge suction roses Yes tank, air, and sounding pipes Yes heels of pillars ✓

and manhole doors of tanks Yes 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 Yes if so, how Galv.

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 Yes

Cargo Battens, Dimensions and spacing, sides 2" x 2" Spruce 14" apart floors 3" x 3" Elm 15" apart tunnel top ✓

fixed or portable Fixed Are screens fitted over the brine grids at chamber sides ✓ hinged or permanently fixed ✓

Thermometer Tubes, No. and position in each chamber L.H., P.S. and square of hold - 1 fixed & 1 off. in each. 1 in each other chamber.

diameter 3" 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 Yes

Draining Arrangements. What provision is made for draining the inside of the chambers brine sealed scuppers

Where sluices, scupper pipes, and drain pipes are fitted are means provided for blanking them off A. P. Valve

What provision is made for draining the refrigerating machinery room Engine room bilge

brine return room direct to E.R. bilge fan room hatch ling scupper water circulating pump room E.R. 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 *None.*  
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. *Beaded in between*  
Air Trunkways in Chambers. Are the arrangements satisfactory and in accordance with the approved plans. *✓*  
Are they permanently fixed or collapsible, or portable. *Permanent*  
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 *1 3/32 in.* Minimum thickness *7.0 g.* Are they galvanised externally. *Yes.*  
How are they arranged in the chambers. *Roof & side grids in L.T.D. P.S. side & center webbers and square of hatch. Batteries in L.H.*  
Thawing Off, what provision is made for removing the snow from the cooling pipes in the chambers. *Hot brine from steam brine heater.*  
The foregoing is a correct description of the Insulation and Appliances.

Plans. Are approved Plans or Specifications forwarded herewith for the Refrigerating Machinery and Insulation. *✓*  
(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. *Complete.*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*Outboard and inboard compressor cylinders, pistons, rods, valves, bearings and cranks shafts examined.*  
*All three brine pumps and the S.W. circulating pump opened & examined.*  
*Brine piping examined & tested to 45 lbs./sq. in.*  
*Condenser and evaporator coils examined and a submersion test to 2000 lbs./sq. in. was carried out on the after condenser and port evaporator coils.*  
*All thermometers checked for accuracy.*  
*No. 2. (port forward) diesel generator engine cylinders, pistons, rod, valves & gears, bearing and cranks shaft examined.*  
*ELECTRICAL EQUIPMENT. The electric motor, control gear and cables for the compressors, brine pumps, circulating pump and fans of the refig. installation also Port side generators and switchboards, examined and insulation resistance measured.*  
*Examination of No. 3. Lower Green Dk and Hold Insulation completed.*  
*The refrigeration machinery and appliances of this vessel, so far as now seen, are eligible to be classed RMC 451 To maintain temperature of 0°F in any one 'tween deck chamber, and 10°F in all other spaces, with sea temperature 90°F maximum and with the  $\pm$  below the notation.*

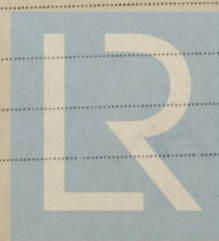
PARTICULARS TO BE ENTERED IN REGISTER BOOK.

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.
2	4	Carb. Amby.	J. & E. Hall.	Grand Slab Cork and Cotton silicate.	Brine & Air	46.	Yes.	6	

Fee £ : : Fee applied for, 19.  
Travelling Expenses £ : : Received by me, 19.

Committee's Minute.

Assigned. *RMC (in black) 451 " 20*  
*Maintain temperature 0°F. in any one 'tween deck chamber, & 10°F. in all other spaces, with sea temp. 90°F max*



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