

Rpt. 17.

REPORT ON REFRIGERATING MACHINERY AND APPLIANCES.

(Received at London Office 14 APL 1925)

Date of writing Report 14 APL 1925 When handed in at Local Office 14 APL 1925 Port of London
 No. in Reg. Book. Survey held at Dartford Date: First Survey 16th March Last Survey 2nd April 1925.
 (No. of Visits 6)

on the Refrigerating Machinery and Appliances of the S.S. "Ascania" Tons {Gross
 Net
 Vessel built at High Walker, Newcastle By whom built Sir A. Armstrong-Whitworth Yard No. 971 When built 1924-5
 Owners Cunard S.S. Co Port belonging to _____ Voyage _____
 Refrigerating Machinery made by J. & E. Hall Ltd. Dartford Machine No. 6149 When made 1925
 Insulation fitted by _____ When fitted _____ System of Refrigeration CO₂ + Brine
 Method of cooling Cargo Chambers Brine grids - Air blown over side grids Insulating Material used granul^d cork
 Number of Cargo Chambers insulated 4 Total refrigerated cargo capacity 54,250 cubic feet.

DESCRIPTION OF REFRIGERATING MACHINERY. Where placed "D" Deck by No 2 Hatch

Refrigerating Units, No. of Two Single, double, or triple Single Cubic feet of air delivered per hour _____
 Total refrigeration or ice-melting capacity in tons per 24 hours 40 tons Are all the units connected to FOR² the refrigerated chambers yes

Compressors, driven direct or through single reduction gearing. Compressors, single or double acting DA No. of cylinders one per mach
 Diameter of cylinders 3 3/4" Diameter of piston rod 2" Length of stroke 15" No. of strokes per minute 200

Motive Power supplied from Elec - Motors - direct coupled

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 = 5 1/2 jarn^s + pins
 Breadth and thickness of crank webs of CO₂ machs 7 3/4" X 3 9/16" No. of sections in crank shaft one Revolutions of CO₂ machines engines per minute 100

Oil Engines, type _____ 2 or 4 stroke cycle _____ Single or double acting _____
 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 Encl Ventilated No. of one per mach Rated 44 BHP Kilowatts _____
 Volts at 220 V @ 90/100 revolutions per minute. Diameter of motor shafts at bearings 4 3/4"

Reduction Gearing, maximum shaft horse power at 1st pinion _____ Revolutions per minute at full power at 1st pinion _____
 2nd 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 _____
 Main _____ Diameter at wheel shroud, 1st _____ Main _____

Gas Condensers, No. of 1 per mach Cast iron or steel casings CI Cylindrical or rectangular rectgl^d
 No. of coils in each 4 Material of coils 3/4" X 1" SD Copper Can each coil be readily shut off or disconnected yes

Water Circulating Pumps, No. and size of 1-7" X 8" X 8" VD how worked Steam DA Gas Separators, No. of 1 1 del^y per mach
 Gas Evaporators, No. of 1 per mach Cast iron or steel casings Steel RP Pressure or gravity type pressure

No. of coils in each casing 5 Material of coils 1" X 1 1/8" SD Steel Can each coil be readily shut off or disconnected _____
 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 2-12 1/2" each of Supplied by Shipbuilders revolutions per minute _____
 Steam or electrically driven Elec 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 2-2" bent. D/C to Motor how worked

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 = No 2 T.D. Port 2 = No 2 T.D. Stbd
5 = No 2 T.D. For 8 = No 2 Hold

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.

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

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	27.3.25	1000lb	3000lb	1500lb		
SEPARATORS	27.3.25	do	do	do		
CONDENSER COILS	22/24 Aug 24 / 18/19 Mar 25	do	do	do		
EVAPORATOR COILS	27.3.25	do	do	do		
CONDENSER HEADERS AND CONNECTIONS	16.3.25	do	do	do		
CONDENSER CASINGS	16.3.25 / 19.3.25	2000lb	500lb	✓		
EVAPORATOR CASINGS	2.4.25	2000lb	500lb	✓		
NH, CONDENSER, EVAPORATOR AND AIR COOLER COILS AFTER ERECTION IN PLACE						
BRINE PIPING AFTER ERECTION IN PLACE						

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) of air at the snow box and of the return air &

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.

ARTICLES SUPPLIED AS PER RULE.	ADDITIONAL SPARE GEAR SUPPLIED.
1 crankshaft	4 sets, each of 4 valves, seats & springs, for compsr
4- Comp. pistons & rods, complete	18 adal. valve springs
1 bucket & rod for duplex water pump	1- guide for grinding in comp. valves
1- adal. brine pump fitted in E.R.	4- springs for CO ₂ safety valves
2- bolts & nuts for main bearing	1- hand pump for pressure lubricator
2- do do for long rod big end.	2- CO ₂ pressure gauges
2- do do for head bearing	1- hydrometer
1- plunger sleeve ring for duplex brine pump	4- brass cased thermometers
1- set of valves & spring for do do	2- safety discs
1- set of rings for water pump bucket	1 1/8 CO ₂ gauge valve - 3 spare
1- set of valves for water pumps	1 fitted box
1- impeller & spindle for cent. brine pumps	1- set of steam piston rings for
3- lengths of 1/2" piping each 1 1/2' & 1 1/4' one	1 set of springs for <u> </u> <u> </u> <u> </u>
3- bands each 1 1/2' & 1 1/4'	
12 sockets & backnuts each 1 1/2' & 1 1/4'	
1 pr. of CO ₂ pipe flanges for each size fitted	
1- set of safety screws, discs for screwing 1 1/2' & 1 1/4' pipe	
2- regulator spindles	
2- sand of brine cocks & valves	
assorted bolts & nuts	
12- lubricator piston leathers	
12- do glands do	
4- sets of copper joint rings for comp. joints	
2- sets do do do for other joints	
2 sets spl metal ratch rings for	

ELECTRICAL SPARES

	for machine motors	motors for bent Brine Pumps	Motor for V.D. Water
Armature packed for storage	1	1	1
Field coil	1	1	1
Line of brush holders	1	1	1
Set of Carbon Brushes	1 set	1 set	1 set
Pair of bearing bushes	1	1	1
Starter Spares	1 set	1 set	1 set

ARTICLES REQUIRED BY RULES AND NOT YET SUPPLIED

The foregoing is a correct description of the Refrigerating Machinery.

J. & E. HALL, LTD Manufacturer.

J. Wells for DIRECTOR.

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. A										
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. F										
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	BOTTOM	AND 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

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 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. 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

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

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, inside dimensions, main _____ and branch _____

Are they permanently fixed or collapsible, or portable _____ State position in chambers _____

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 _____ 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 _____ 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 _____

General Remarks (State quality of workmanship, opinions as to class, &c.)

The refrigerating machinery has been examined under special survey during construction & the parts tested as set forth in report. The workmanship & materials are good. The machinery has now been forwarded to the Shipbuilders where it will be installed on board.

PARTICULARS TO BE ENTERED IN REGISTER BOOK.

REFRIGERATING MACHINES.					System of (1) Refrigerating (2) Insulating the Chambers.	POWER.		INSULATED CARGO CHAMBERS.	
No. and whether Single or Duplex.	Makers.	Date of Construction.	System.	Type.		Cubic feet of air delivered per hour.	Ice melting capacity per 24 hours. Tons.	No.	Capacity.
2 Single	J. R. Hall & Co	1925	Carlinby	Hall	(1) Brine		40		

Fee NWC 1/25 £ 9 :
 Travelling Expenses £ 1 : 16 : 5
 Committee's Minute
 Assigned

In NWC 4/4/25.
 (Fee applied for)
 Received by Joe J. Jordan
 See Report
 FRI. 15 MAY 1925
 P. J. Hodder
 Surveyor to Lloyd's Register.

See NWC 79194