CLAIMS

1. A transportation refrigeration system comprising:

a single distinct compartment to be conditioned;

a refrigeration circuit associated with an enclosure including a compressor, a condenser, an expansion valve upstream of a first evaporator and a second evaporator, wherein the first evaporator is in parallel with the second evaporator;

a first enclosure surrounding the first evaporator, wherein the first enclosure includes a first refrigerant detection sensor in communication with a controller; and

a second enclosure surrounding the second evaporator, wherein the second enclosure includes a second refrigeration detection sensor in communication with the controller,

wherein the first evaporator and the second evaporator are configured to condition the same compartment.

2. The transportation refrigeration system of claim 1, wherein the refrigeration circuit includes a first evaporator inlet shut-off valve and a first evaporator outlet shut-off valve.

3. The transportation refrigeration system of claim 2, wherein the refrigeration circuit includes a second evaporator inlet shut-off valve and a second evaporator outlet shut-off valve.

4. The transportation refrigeration system of claim 2, wherein the refrigeration circuit includes a first fan directed at the first evaporator.

5. The transportation refrigeration system of claim 3, wherein the refrigeration circuit includes a second fan directed at the second evaporator.

6. The transportation refrigeration system of claim 5, wherein the first fan and the second fan are independently operable.

7. The transportation refrigeration system of claim 3, wherein the first evaporator inlet shut-off valve, the first evaporator outlet shut-off valve, the second evaporator inlet shut-off valve and the second evaporator outlet shut-off valve are solenoid valves in communication with the controller.

8. The transportation refrigeration system of claim 3, wherein the first enclosure is separated from the second enclosure by a bulkhead.

9. The transportation refrigeration system of claim 3, wherein the first evaporator inlet shut-off valve, the first evaporator outlet shut-off valve, the second evaporator inlet shut-off valve and the second evaporator outlet shut-off valve are located outside of the compartment.

10. The transportation refrigeration system of claim 1, wherein the first refrigerant detection sensor is configured to identify the presence of refrigerant in an atmosphere of the first enclosure and the second refrigerant detection sensor is configured to identify the presence of refrigerant in an atmosphere of the second enclosure.

11. A method of operating a refrigeration cycle comprising the steps of:

conditioning a single distinct compartment with a refrigeration circuit to a first temperature, wherein the refrigeration circuit includes a compressor, a condenser, an expansion valve upstream of a first evaporator and a second evaporator, wherein the first evaporator is in parallel with the second evaporator;

detecting a refrigerant leak in a first enclosure including the first evaporator with a first refrigerant sensor; and

isolating the first evaporator from the refrigerant circuit by closing a first evaporator inlet shut-off valve and a first evaporator outlet shut-off valve.

12. The method of claim 11, including disabling a first fan located adjacent the first evaporator upon detecting a refrigerant leak in the first enclosure.

13. The method of claim 11, including conditioning the compartment with only the second evaporator to a second temperature greater than the first temperature.

14. The method of claim 11, including detecting a refrigerant leak in a second enclosure including the second evaporator with a second refrigerant sensor.

15. The method of claim 14, including isolating the second evaporator from the refrigerant circuit by closing a second evaporator inlet shut-off valve and a second evaporator outlet shut-off valve.

16. The method of claim 14, including disabling a second fan located adjacent the second evaporator upon detecting a refrigerant leak in the second enclosure.

17. The method of claim 11, wherein the first refrigerant sensor identifies the presence of refrigerant in the atmosphere of the first enclosure.

18. The method of claim 11, including providing equal amounts of conditioning with the first evaporator and the second evaporator to the compartment.