CLAIMS:

1. A transportation cargo refrigeration system comprising:
a refrigeration unit to provide a flow of supply air for a refrigerated cargo container;
a refrigeration system outlet to allow the flow of the supply air into the cargo container; and
a mixing chamber disposed between the refrigeration unit and the refrigeration system outlet for mixing the flow of supply air and thereby reducing supply air temperature fluctuation at the refrigeration system outlet wherein a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, is directed into the mixing chamber to mix with the supply air, bypassing the refrigeration unit.

2. The refrigeration system of Claim 1, wherein the refrigeration system outlet includes a movable closure to retain the flow of supply air in the mixing chamber to enhance mixing.

3. The refrigeration system of Claim 1, wherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration system.

4. The refrigeration system of Claim 1, further comprising a temperature sensor disposed in the mixing chamber.

5. The refrigeration system of Claim 1, further comprising a fan disposed in the mixing chamber to improve mixing of the supply air.

6. A method of operating a refrigeration system for a refrigerated cargo container comprising:
flowing supply air through a refrigeration unit thereby reducing a temperature of the supply airflow;
directing the supply air into a mixing chamber;
mixing the supply air in the mixing chamber until a selected supply air temperature is achieved; and
directing the supply air through a refrigeration system outlet and into an interior of a cargo container;
directing a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, into the mixing chamber to mix with the supply air, the return air bypassing the refrigeration unit.

7. The method of Claim 6, further comprising retaining the supply air in the mixing chamber via a movable closure to facilitate mixing of the supply air.

8. The method of Claim 7, wherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration system.

9. The method of Claim 6, further comprising detecting a supply air temperature in the mixing chamber via a temperature sensor.

10. The method of Claim 6, enhancing mixing of the supply air in the mixing chamber via a fan.

11. The method of Claim 6, further comprising:
directing a flow of return air from the cargo container into the mixing chamber; and
mixing the return air and the supply air in the mixing chamber.

12. The method of Claim 11, wherein the flow of return air bypasses the refrigeration unit.

13. The method of Claim 11, further comprising directing the flow of return air into the mixing chamber when a compressor of the refrigeration unit is operating.

14. The method of Claims 13, further comprising stopping the flow of return air into the mixing chamber when a compressor of the refrigeration unit is not operating.

15. A refrigerated transportation cargo container comprising:
a transportation cargo container;
a refrigeration unit to provide a flow of supply air for the transportation cargo container;
a refrigeration system outlet to allow the flow of supply air into the transportation cargo container; and
a mixing chamber disposed between the refrigeration unit and the refrigeration system outlet for mixing of the flow of supply air thereby reducing supply air temperature fluctuation at the refrigeration system outlet; and

means for directing a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, into the mixing chamber (bypassing the refrigeration unit) to mix with the supply air,.

16. The transportation cargo container of Claim 15, wherein the refrigeration system outlet includes a movable closure to retain the flow of supply air in the mixing chamber to enhance mixing.

17. The transportation cargo container of Claim 16, wherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration unit.

18. The transportation cargo container of Claim 15, wherein a flow of return air from the cargo container is directed into the mixing chamber to mix with the supply air.

19. The transportation cargo container of Claim 18, wherein the flow of return air into the mixing chamber is stopped when a compressor of the refrigeration unit is not operating.

CLAIMS:

1. A transportation cargo refrigeration system comprising:
a refrigeration unit to provide a flow of supply air for a refrigerated cargo container;
a refrigeration system outlet to allow the flow of the supply air into the cargo container; and
a mixing chamber disposed between the refrigeration unit and the refrigeration system outlet for mixing the flow of supply air and thereby reducing supply air temperature fluctuation at the refrigeration system outlet wherein a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, is directed into the mixing chamber to mix with the supply air, bypassing the refrigeration unit wherein the refrigeration system outlet includes a movable closure to retain the flow of supply air in the mixing chamber to enhance mixing and wherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration system.

2. The refrigeration system of Claim 1, further comprising a temperature sensor disposed in the mixing chamber.

3. The refrigeration system of Claim 1, further comprising a fan disposed in the mixing chamber to improve mixing of the supply air.

4. A method of operating a refrigeration system for a refrigerated cargo container comprising:
flowing supply air through a refrigeration unit thereby reducing a temperature of the supply airflow;
directing the supply air into a mixing chamber;
retaining the supply air in the mixing chamber via a movable closure to facilitate mixing of the supply air wherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration system;
mixing the supply air in the mixing chamber until a selected supply air temperature is achieved; and
directing the supply air through a refrigeration system outlet and into an interior of a cargo container;
directing a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, into the mixing chamber to mix with the supply air, the return air bypassing the refrigeration unit.

5. The method of Claim 4, further comprising detecting a supply air temperature in the mixing chamber via a temperature sensor.

6. The method of Claim 4, enhancing mixing of the supply air in the mixing chamber via a fan.

7. The method of Claim 4, further comprising:
directing a flow of return air from the cargo container into the mixing chamber; and
mixing the return air and the supply air in the mixing chamber.

8. The method of Claim 7, wherein the flow of return air bypasses the refrigeration unit.

9. The method of Claim 7, further comprising directing the flow of return air into the mixing chamber when a compressor of the refrigeration unit is operating.

10. The method of Claims 9, further comprising stopping the flow of return air into the mixing chamber when a compressor of the refrigeration unit is not operating.

11. A refrigerated transportation cargo container comprising:
a transportation cargo container;
a refrigeration unit to provide a flow of supply air for the transportation cargo container;
a refrigeration system outlet to allow the flow of supply air into the transportation cargo container; and
a mixing chamber disposed between the refrigeration unit and the refrigeration system outlet for mixing of the flow of supply air thereby reducing supply air temperature fluctuation at the refrigeration system outlet; and
means for directing a flow of return air from the cargo container when a compressor of the refrigeration unit is not operating, into the mixing chamber (bypassing the refrigeration unit) to mix with the supply air;
wherein the refrigeration system outlet includes a movable closure to retain the flow of supply air in the mixing chamber to enhance mixing andwherein the moveable closure remains closed for at least one one/off cycle of a compressor of the refrigeration unit.

12. The transportation cargo container of Claim 11, wherein a flow of return air from the cargo container is directed into the mixing chamber to mix with the supply air.

13. The transportation cargo container of Claim 12, wherein the flow of return air into the mixing chamber is stopped when a compressor of the refrigeration unit is not operating.