CLAIMS

1. A container box, comprising:

a container controller for controlling the container box, one or more pressure transducers disposed within the container box, the one or more pressure transduces operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the container box configured to perform an airtightness test, including:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement wherein the container box is a cargo container, and the cargo container monitors for a trigger event to initiate the airtightness test, wherein the trigger event is one or more of:

an elapsed of a predetermined period of time;

a predetermined activity in a transportation cycle, including being loaded onto or unloaded from a transportation vehicle, arriving at or departing from a loading or unloading destination, arriving at one or more predetermined geographic locations; and

manual initiation of a leakage test.

2. The container box of claim 1 wherein the transportation vehicle is one or more of a roadway based vehicle, a railway based vehicle and a waterway based vehicle.

3. The container box of claim 1 including a compressor and a compressor controller for controlling the compressor, the container controller being in operational communication with the compressor controller, wherein pressurizing the container box includes the container controller controlling the compressor to pressurizing container box until pressure in the container box is above the first threshold.

4. A container box, comprising:

a container controller for controlling the container box, one or more pressure transducers disposed within the container box, the one or more pressure transduces

operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the container box configured to perform an airtightness test, including:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement,

wherein the container box is a cargo container, the first threshold is two inches water-gauge and the second threshold is one inch-water gauge.

5. The container box of claim 4 wherein the container box is a forty foot cargo container and, the acceptable duration range is greater than eight minutes.

6. The container box of claim 4 wherein the container box is a twenty foot cargo container and, the acceptable duration range is greater than four minutes.

7. A container box, comprising:

a container controller for controlling the container box, one or more pressure transducers disposed within the container box, the one or more pressure transduces operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the container box configured to perform an airtightness test, including:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement,

wherein the container box monitoring implement is a mobile device.

8. The container box of claim 4 wherein the cargo container includes a front end and a rear end, the rear end including a rear curtain for enclosing cargo within the cargo container.

9. The container box of claim 4 wherein the cargo container includes a front end and a rear end, the front end including an access panel housing therein the container controller, the access panel being connected to the front of the cargo container by a plurality of bolts and the access panel being fluidly secured to the cargo container by a plurality of gaskets.

10. A method for performing an airtightness test on a container box,

wherein the container box includes: a container controller for controlling the container box, and one or more pressure transducers disposed within the container box, the one or more pressure transduces operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the method comprising:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement, wherein the container box is a cargo container, and the cargo container monitors for a trigger event to initiate the airtightness test, wherein the trigger event is one or more of:

an elapsed of a predetermined period of time;

a predetermined activity in a transportation cycle, including being loaded onto or unloaded from a transportation vehicle, arriving at or departing from a loading or unloading destination, arriving at one or more predetermined geographic locations; and

manual initiation of a leakage test.

11. The method of claim 10 wherein the transportation vehicle is one or more of a roadway based vehicle, a railway based vehicle and a waterway based vehicle.

12. The method of claim 10 including a compressor and a compressor controller for controlling the compressor, the container controller being in operational communication with the compressor controller, wherein pressurizing the container box includes the container controller controlling the compressor to pressurizing container box until pressure in the container box is above the first threshold.

13. A method for performing an airtightness test on a container box,

wherein the container box includes: a container controller for controlling the container box, and one or more pressure transducers disposed within the container box, the one or more pressure transduces operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the method comprising:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement,

wherein the container box is a cargo container, the first threshold is two inches water-gauge and the second threshold is one inch-water gauge.

14. The method of claim 13 wherein the container box is a forty foot cargo container and, the acceptable duration range is greater than eight minutes.

15. A method for performing an airtightness test on a container box,

wherein the container box includes: a container controller for controlling the container box, and one or more pressure transducers disposed within the container box, the one or more pressure transduces operatively connected to the container box, wherein the container box is configured for monitoring pressure within the container box with the pressure transducers,

the method comprising:

pressurizing the container box until pressure in the container box is above a first threshold;

monitoring pressure in the container box to determine when pressure in the container box is proximate the first threshold;

monitoring a first duration during which pressure in the contain box drops from the first threshold to a second threshold;

determining whether the first duration is within an acceptable range, and

when the duration is outside the acceptable range, communicating an alert to a container box monitoring implement,

wherein the container box is a twenty foot cargo container and, the acceptable duration range is greater than four minutes.

16. The method of claim 10 wherein the container box monitoring implement is a mobile device.

17. The method of claim 13 wherein the cargo container includes a front end and a rear end, the rear end including a rear curtain for enclosing cargo within the cargo container.

18. The method of claim 13 wherein the cargo container includes a front end and a rear end, the front end including an access panel housing therein the container controller, the access panel being connected to the front of the cargo container by a plurality of bolts, and the access panel being fluidly secured to the cargo container by a plurality of gaskets.