CLAIMS

What is claimed is:

[Claim 1]. A flight recorder system for real-time monitoring an aircraft wherein said system is separate from the aircraft's own avionics, the system comprising:

(a) at least one percepting component for ascertaining a condition of an aircraft, the percepting component comprising at least one sensor for sensing a condition;

(b) wherein the percepting component is situated at a location on or within the aircraft from which information may be ascertained;

(c) a communication mechanism connected with said percepting component for transmitting and/or receiving communications over a communications network;

(d) a control mechanism connected with said percepting component to receive information from the percepting component and to communicate the information via the communication mechanism;

(e) wherein the said one or more sensors comprise one or more of a barometric pressure sensor, an accelerometer sensor, an altitude sensor, and wherein said one or more sensors are independent from the aircraft's avionics and guidance components;

(f) wherein said sensors are configured to detect an emergency condition experienced by the aircraft;

(g) wherein the system includes a speaker situated within the aircraft cockpit, and wherein said system is configured to issue an alert via said speaker, when the system detects an emergency condition;

(h) wherein said accelerometer, said attitude sensor and said barometric pressure sensor are combined and provide an indication of when the aircraft is taking off and climbing out, or landing, and wherein the system is programmed to only record, or only to record and transmit, during those periods when said aircraft is taking off and climbing out, or landing;

(i) further including a remotely situated ground operations portion configured to receive transmissions that include a monitored condition of the aircraft that includes at least an indication of when the aircraft is taking off and climbing out, or landing, said indication being provided by said accelerometer, said attitude sensor and said barometric pressure sensor;

(j) wherein said percepting component are provided on the aircraft portion of the system said aircraft portion including a communication mechanism having a satellite radio transceiver and an antenna for radiating signals for communicating via said satellite communications link with said ground operations portion; wherein said ground operations portion comprises a receiving component configured to receive communications transmitted from the communication mechanism of the aircraft portion; and wherein said aircraft portion communicates with said ground operations portion via a satellite communication link;

(k) wherein the ground operations portion includes a computer or with a processing component and software configured with instructions to instruct the processing component to analyze the information communicated from the aircraft portion by comparing the information to one or more threshold or predetermined values;

(l) wherein said system is configured to generate a response when a threshold value or predetermined value is detected;

(m) wherein said response comprises a communication to said aircraft cockpit;

(n) wherein said response is communicated through one or more components of the aircraft portion of the system;

(o) wherein said response is communicated via said ground operations portion satellite transceiver through a satellite link to said aircraft portion transceiver through said aircraft portion antenna;

(p) wherein the control mechanism comprises one or more of a computing component or control circuitry means;

(q) wherein said response is communicated to said computing component or control circuitry means;

(r) wherein said computing component or control circuitry means of said aircraft portion is configured to process said response received from said ground operations portion and issue an alert via one or more components of said aircraft portion; and

(s) wherein said ground operations portion comprises an artificial intelligence system configured to detect conditions of the aircraft from the communications providing information obtained by the percepting component of the aircraft portion of the system, wherein said conditions include unusual conditions detected by said accelerometer and said attitude sensor of said system.

~~2. The system of claim 1, further including a remotely situated ground operations portion configured to receive transmissions that include a monitored condition of the aircraft that includes at least an indication of when the aircraft is taking off and climbing out, or landing, said indication being provided by said accelerometer, said attitude sensor and said barometric pressure sensor.~~

~~3. The system of claim 2, wherein said percepting component are provided on the aircraft portion of the system said aircraft portion including a communication mechanism having a satellite radio transceiver and an antenna for radiating signals for communicating via said satellite communications link with said ground operations portion; wherein said ground operations portion comprises a receiving component configured to receive communications transmitted from the communication mechanism of the aircraft portion; and wherein said aircraft portion communicates with said ground operations portion via a satellite communication link.~~

~~4. The system of claim 3, wherein the ground operations portion includes a computer or with a processing component and software configured with instructions to instruct the processing component to analyze the information communicated from the aircraft portion by comparing the information to one or more threshold or predetermined values;~~

~~wherein said system is configured to generate a response when a threshold value or predetermined value is detected;~~

~~wherein said response comprises a communication to said aircraft cockpit;~~

~~wherein said response is communicated through one or more components of the aircraft portion of the system;~~

~~wherein said response is communicated via said ground portion satellite transceiver through a satellite link to said aircraft portion transceiver through said aircraft portion antenna;~~

~~wherein the control mechanism comprises one or more of a computing component or control circuitry means;~~

~~wherein said response is communicated to said computing component or control circuitry means;~~

~~wherein said computing component or control circuitry means of said aircraft portion is configured to process said response received from said ground operations system and issue an alert via one or more components of said aircraft portion;~~

~~wherein said ground operations system comprises an artificial intelligence system configured to detect conditions of the aircraft from the communications providing information obtained by the percepting component of the aircraft portion of the system, wherein said conditions include unusual conditions detected by said accelerometer and said attitude sensor of said system.~~

[Claim 2~~5~~]. The system of claim 4~~1~~, wherein said unusual conditions are communicated to the aircraft cockpit via said ground operations portion satellite transceiver through said satellite link to said aircraft portion transceiver through said aircraft portion antenna.

[Claim 3~~6~~]. The system of claim ~~5~~2, wherein the aircraft portion of said system includes a speaker provided in the cockpit, and wherein said communication of said unusual conditions comprises an audible communication through said speaker.

[Claim 4~~7~~]. The system of claim ~~5~~2, wherein~~.~~,

the aircraft being monitored has a cockpit and an instrument panel in said cockpit, and wherein the system includes one or more cameras situated in the cockpit, wherein at least one of said one or more cameras is positioned to record the instrument panel of the aircraft.

[Claim 5~~8~~]. The system of any one of claims 1 to ~~7~~4, wherein a threshold value or threshold change in a value for one or more conditions sensed by said one or more sensors is designated, and wherein information from the sensors is monitored and processed to determine whether a

threshold value or change in value has been met, and wherein when the threshold value or change in value has been met, said camera is actuated to record images.

[Claim 6~~9~~]. The system of claim ~~6~~3, wherein said communications take place via satellite communications between said ground operations portion and said aircraft to deliver the message through the cockpit speaker.

[Claim 7~~10~~]. The system of claim ~~9~~6, wherein said system is configured to determine via said sensors that are independent of said aircraft avionics, when an aircraft is in a detected or declared emergency situation, and wherein said system is configured with an artificial intelligence function that employs the satellite link and the speaker in the aircraft in order to provide advisement to the pilots.

[Claim 8~~11~~]. The system of claim ~~9~~6, wherein said system is configured to determine via said sensors that are independent of said aircraft avionics, when an aircraft is in a detected or declared emergency situation, and wherein said system is configured with a function that allows a human to selectively employ the satellite link and the speaker in the aircraft in order to provide advisement to the pilots.

[Claim 9~~12~~]. The system of claim ~~3 or 4~~1, wherein the aircraft being monitored has a cockpit and an instrument panel in said cockpit, and wherein the system includes one or more cameras situated in said cockpit, and wherein said one or more cameras includes a capture element that is installed within an aircraft cockpit component, and wherein the capture element is disguised to integrate with the cockpit component.

[Claim 10~~3~~]. The system of claim ~~7~~4, wherein said one or more cameras includes a capture element that is installed within an aircraft cockpit component, and wherein the capture element is disguised to integrate with the cockpit component.

[Claim 11~~4~~]. The system of claim ~~3~~1, wherein the ground operations portion computer software is configured with instructions to

a) process the information and store the information received from the aircraft portion;

b) identify a subscriber;

c) associate the subscriber with an access provision; and

d) provide access to aircraft information to the subscriber based on the subscriber access provision.

[Claim 12~~5~~]. The system of claim 11~~4~~, including an option for the subscriber to designate an aircraft, or category in which one or more aircrafts are classified; and wherein the system generates alerts, including a subscriber alert that is communicated to a subscriber of a designated aircraft or category to which one or more aircrafts are classified, based on a trigger generated from the processing of information communicated from the aircraft portion.