

Claims:

1. A trigger device for activating a canister coupled to a life vest, the trigger device comprising:

a pyrotechnic;

a circuitry comprising:

a battery,

a water probe sensor,

a pressure depth sensor,

a fall detection sensor,

a pyrotechnic actuator in communicatively connected to an igniter of said pyrotechnic,

a processing unit having a processor and memory,

instructions stored on said memory to:

analyse input received from each of said water probe sensor,

pressure depth sensor, and fall detection sensor, and

activate said pyrotechnic actuator based on a result from said

analysis; and

a housing adapted to housed said pyrotechnic and circuitry, wherein in a mode of operation said processing unit is switched on in response to determining a fall via the fall detection sensor and said instructions to analyse input received from each of said water probe sensor, pressure depth sensor, and fall detection sensor comprises instructions to:
determine water on a probe of said water probe; and
activate said pyrotechnic actuator in response to determining water on said probe of said water probe sensor.

~~2. The trigger device according to claim 1 wherein said a processing unit is switched on in response to determining a fall via the fall detection sensor.~~

3. ~~The trigger device according to claim 2 wherein said instructions to analyse input received from each of said water probe sensor, pressure depth sensor, and fall detection sensor further comprises instructions to:~~

~~determine water on a probe of said water probe; and~~

~~activate said pyrotechnic actuator in response to determining water on said probe of said water probe sensor.~~

24. The trigger device according to claim 12 wherein said instructions to analyse input received from each of said water probe sensor, pressure depth sensor, and fall detection sensor further comprises instructions to:

determine whether said trigger device fall above a predetermined distance via said fall detection sensor; and

activate said pyrotechnic actuator in response to determining said trigger device falling above said predetermined distance.

35 The trigger device according to claim 1 wherein in another mode of operation said processing unit is switched on in response to determining water on a probe of said water probe sensor.

46. The trigger device according to claim 35 wherein in said another mode of operation said instructions to analyse input received from each of said water probe sensor, pressure depth sensor, and fall detection sensor further comprises instructions to:

determine a depth of said trigger device is below a predetermined depth via said pressure depth sensor; and

activate said pyrotechnic actuator in response to determining said trigger device is below said predetermined depth.

57. The trigger device according to claim ~~35~~ wherein said water probe sensor comprises three water probes for sensing water and impedance.

5 | ~~68~~. The trigger device according to claim ~~17~~ wherein said instructions to analyse input received from each of said water probe sensor, pressure depth sensor, and fall detection sensor further comprises instructions to:

determine water and impedance on at least two of said three water probes;

execute a first setup mode in response to determining water and impedance on

10 | said at least two of said three water probes;

determine water and impedance on at least two of said three water probes after end of said first setup mode; and

execute a second setup mode in response to determining water and impedance on said at least two of said three water probes after end of said first setup mode.

15 | ~~79~~. The trigger device according to claim ~~8~~ wherein said first setup mode is changing of a predetermined depth threshold and said second setup mode is changing of a mode of operation.

20 | ~~810~~. The trigger device according to claim 1 wherein said processing unit further comprises a wireless transmitter.

| ~~911~~. The trigger device according to claim ~~810~~ further comprising:

25 | a Global Positioning Unit (GPU) comprising a wireless receiver, a processor, a memory, a Global Positioning System (GPS) module, a light and sound beacon, a water probe sensor, and a long distance Radio Frequency (RF) transmitter, said memory

having instructions executable by said processor in response to sensing water on said water probe sensor.

5 | 102. The trigger device according to claim ~~911~~ wherein said instructions executable by said processor comprises instructions to:

receive a signal from said wireless transmitter;

receive coordinates via said GPS module;

transmit said coordinates via said long distance RF transmitter;

activate said light and sound beacon.

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| 113. The trigger device according to claim ~~57~~ wherein the circuitry further comprises a first 7-segment LED and a second 7-segment LED.

15 | 124. The trigger device according to claim ~~113~~ wherein said first and second 7-segment LEDs are arranged between said three water probes.