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METHOD AND SYSTEM FOR SIMULATING AN EMERGENCY EVENT INVOLVING A PLANE

Field of Invention

The invention relates generally to emergency simulator training system. In particular, the invention relates to a method and system for preparing a passenger for responding to an emergency event.

Background

Currently, information and instructions on the use of emergency escape equipment are given to passengers travelling in commercial planes, ships and trains usually shortly before takeoff or departure. Members of the cabin crew on board the planes, ships and trains usually demonstrate the use of the emergency escape equipment before the takeoff or departure.

However, the passengers have very little or no experience relating to the use of the emergency escape equipment as their only exposure to that is through the given information and instructions. The passengers are taught visually or verbally on how to operate and use the emergency escape equipment. Unfortunately, few passengers actually associate or comprehend the given information and instructions to their own safety because the passengers have never had any personal experience in using the emergency escape equipment or have heard an actual emergency alert goes off on the planes, ships and trains.

The danger to passengers during emergencies is very real. The difference between survival and death is often the difference between teaching the passengers what to do when there is an emergency event and doing nothing. For example, in the case of air travelling, a report issued by the headquarters of the International Civil Aviation Organisation (ICAO) in 2002 indicates that of all the plane accidents or mishaps, 90% of passengers' deaths occur within a dangerous period of 13 minutes. This dangerous period refers to the seven minutes before the planes take off while picking up speed on the runway, and the six minutes after the planes land and move along the runway. Yet, there has been no system available to



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teach and prepare passengers, who learn best through experience rather than the given information and instructions, how to respond to an emergency event.

There is therefore a need for a method and system for preparing passengers for responding to an emergency event.

Summary

Embodiments of the invention are disclosed hereinafter for a method and system for preparing a passenger for responding to an emergency event.

In accordance with a first embodiment of the invention, there is disclosed a method for preparing a passenger for responding to an emergency event. The method involves providing a door, which is operable by the passenger for providing access to an emergency exit. The method also involves providing a seat having a fastener, where the passenger is securable to the seat by the fastener. An alert system alerts the passenger of the emergency event, and that the passenger is seated prior to the emergency event. A directing means directs the passenger towards the emergency exit, which is identified by an identifier. The method further involves using a timer for determining duration between alerting the passenger of the emergency event and passage of the passenger through the emergency exit, wherein the duration is indicative of responsiveness of the passenger to the emergency event.

In accordance with a second embodiment of the invention, there is disclosed a system for preparing a passenger for responding to an emergency event. The emergency evacuation trainer comprises an assembly unit. The assembly unit comprises an identifier for identifying a door. The door is operable by the passenger for providing access to an emergency exit nearest to the passenger. The assembly also has an alert system for alerting the passenger of the emergency event and a fastener for securing the passenger to a seat on which the passenger is seated. The fastener is operable for releasing the passenger from the seat. The assembly unit further has a directing means for directing passenger to the emergency exit and a timer for determining duration between alerting the passenger of the emergency event and passage of the passenger through the emergency exit, wherein the duration is indicative of responsiveness of the passenger to the emergency event.

Brief Description Of The Drawings

Embodiments of the invention are described in detail hereinafter with reference to the drawings, in which:

Fig. 1 shows a side view of an assembly unit according to a first embodiment of the invention;

Fig. 2 shows two passengers getting prepared to put on an oxygen mask;

Fig. 3 shows a passenger taking out a life vest; and

Fig. 4 shows an emergency exit having sliding and escape equipment coupled thereto.

Detailed Description

With reference to the drawings, a method and system according to embodiments of the invention are disclosed for preparing a passenger for responding to an emergency event. Presently, there is a problem in that there has been no system available to teach and prepare passengers how to respond to an emergency event.

For purposes of brevity and clarity, the description of embodiments the invention is limited hereinafter to educating and instructing a passenger to respond to an emergency event. This, however, does not preclude embodiments of the invention from other applications that require similar method and system as the invention. The functional principles fundamental to the embodiments of the invention remain the same throughout the various embodiments.

Embodiments of the invention are described in greater detail in accordance with Figs. 1 to 4 of the drawings hereinafter, wherein like elements are identified with like reference numerals.

The embodiments of the invention substantially overcome the abovementioned problem by providing an emergency evacuation trainer for preparing a passenger for responding to an emergency event. The emergency evacuation trainer includes an assembly unit 100, which is configurable for resembling the interior of a plane, ship and train. The assembly unit 100 is further transportable from one location to another.

A human instructor (not shown), such as an emergency safety expert, is preferably present for conducting emergency evacuation training using the emergency evacuation trainer. Alternatively, the emergency evacuation training is conducted through a computerised multimedia system. The passenger is preferably provided with instructional materials, such as instructional cards that serve as a reference during the emergency evacuation training.

In an embodiment of the invention, the assembly unit 100 as shown in Fig. 1 resembles the interior of a commercial plane. The assembly unit 100 is preferably formed on an upper surface 104 of a platform 102. The assembly unit 100 comprises an identifier 106, which identifies an emergency exit 108 nearest to a passenger 110. Depending on the type of commercial plane the assembly unit 100 resembles, there can be two emergency exits 108 nearest to passenger 110. The emergency exit 108 is accessible through an emergency door 112. The identifier 106 identifies the emergency exit 108 nearest to the passenger 110 through colour matching between a seat 114 on which the passenger 110 sits and the nearest emergency exit 108. This is achieved, for example by having the identifier 106 emitting a colour that matches the colour of the seat 114. The seat 114 and the emergency door 112 are preferably formed on the upper surface 104 of the platform 102.

Alternatively, the identifier 106 has a particular geometric shape or symbol that is associated to the seat 114. A combination of colour, shape or symbol is preferably used to strengthen the association between the seat 114 the nearest emergency exit 108. Accordingly, the passenger 110 is instructed to identify the emergency exit 108 nearest to himself or herself.

The passenger 110 is preferably instructed to open the emergency door 112 if the passenger 110 is sitting next to the emergency door 112. The passenger 110 is preferably instructed to operate the emergency door 108 by the human instructor. If the passenger 110 is unable to operate the emergency door 108 due to the passenger 110 being disabled or too young, the passenger 110 is preferably arranged by the human instructor to be seated on an alternative location.

The back of the seat 114 is preferably adjustable using a lever mechanism instead of a push-button mechanism. The seat 114 has a fastener or seat belt 116 attached thereto for securing the passenger 110 to the seat 114 and is preferably operable by a push-button locking mechanism. Alternatively, the seat belt 116 can be a body harness. Underneath the seat 114 is a life vest 118. The life vest 118 is preferably removably attached to the underside of the seat 114.

Above the seat 114 on which the passenger 110 sits is a compartment 120 containing oxygen masks. The compartment 120 is preferably within the passenger's 110 reach when the passenger 110 is seated. A row of directing means 122 is preferably provided along the upper surface 104 of the platform 102 for directing the passenger 110 to the emergency exit 108. Examples of the directing means 122 include emergency lights and speakers. The emergency lights and speakers are preferably incorporated for guiding the passenger 110 to the emergency exit 108. The emergency lights preferably have the same colouration as the identifier 106.

At the back of the seat 114 is an alert system 124 for alerting the passenger 110 of the emergency event. The alert system 124 includes an audio output preferably used for indicating the start of the emergency event, such as the plane being forced to land on ground or water. The audio output preferably produces siren sound for indicating the start of the emergency event.

Upon activation of the alert system 124, the passenger 110 is preferably instructed through the alert system 124 in accordance with the following sequence. First, the passenger 110 is instructed to adjust the seat 114 through the lever mechanism to an upright position as shown in Fig. 1. Once the seat 114 is in the upright position, the passenger 110 fastens the seat belt 116 across the hips by engaging the push-button locking mechanism of the seat belt 116 so that the passenger 110 is snugly secured to the seat 114.

While the passenger 110 is fastening the seat belt 116, an oxygen mask 200 is released from the compartment 120 above the passenger 110 for the passenger 110 to wear, as shown in Fig. 2. The passenger 110 is instructed to put on the oxygen mask 200, which has straps for securing thereof over the passenger's 110 nostrils and mouth. The oxygen mask 200 is linked to a central oxygen supply by connecting tubes 202.

After putting on the oxygen mask 200, the passenger is instructed to take out the life vest 118 from the underside of the seat 114 and secures the life vest 118 to the passenger's 110 torso. The life vest 118, as shown in Fig. 3, preferably has a single strap 202. Together with hooks or clips, the life vest 118 is secured to the passenger's 110 torso. The life vest 118 with double straps can alternatively be used.

The passenger 110 is then instructed to lean forward and adopts a low profile posture, as shown earlier in Fig. 1. The passenger 110 remains in that posture until instruction is given for the emergency door 112 to be opened by the passenger 110 seated nearest to the emergency exit 108. The passenger 110 is directed towards the emergency exit 118 by the directing means 122. Once the emergency door 112 is opened, the passenger 110 seated nearest to the emergency exit 108 is instructed to activate a descending apparatus 400, such as an inflatable slide. Upon activation, the inflatable slide preferably extends away from a lower edge 402 of the emergency exit 108. The passenger 110 is then instructed to remove the oxygen mask 200 and release the seat belt 116. Thereafter, the passenger 110 is instructed to follow the emergency lights and proceed towards the emergency exit 108 in an orderly manner.

Finally, once the passenger 110 arrives at the lower edge 402 of the emergency exit 108, the passenger 110 is instructed to adopt a sitting position and descends from the emergency exit 108 by sliding down the inflatable slide. Before the descent, the passenger 110 is instructed to refrain from holding or carrying any objects and to remove any sharp objects from the passenger's 110 body, such as high heel shoes. If necessary, the passenger 110 slides down the inflatable slide barefooted.

The emergency evacuation trainer further includes a timer (not shown). The timer provides the time duration between alerting the passenger 110 of the emergency event and passage of the passenger 110 through the emergency exit 118. In this way, the passenger 110 is able to repeat the emergency evacuation training in order to achieve better timings.

Depending on the needs of the emergency evacuation training, the assembly unit 100 is expandable for training more passengers 110. Additional, smoke or water generators (not shown) can be used for introducing smoke or water into the assembly unit 110 for providing a more realistic training environment.

In other embodiments of the invention, the assembly unit 100 is preferably modified for resembling the interior of a train or ship. The emergency evacuation training is correspondingly modified to reflect the changes in interior configurations of the assembly unit 100.

The abovedescribed invention therefore advantageous prepares passengers for responding to an emergency event so that they are acquainted with the knowledge of equipping themselves and to evacuate safely from the scene of the emergency event. In this way, the chances of passengers surviving such an emergency event are significantly improved. The passenger, being prepared to respond to the emergency event, is now even capable of helping other passengers so that the lives of other passengers may be saved.

In the foregoing manner, a method and system for preparing a passenger for responding to an emergency event is disclosed. Although only a few embodiments of the invention are disclosed, it becomes apparent to one skilled in the art in view of this disclosure that numerous changes and/or modifications can be made without departing from the scope and spirit of the invention.

Claims

1. A method for preparing a passenger for responding to an emergency event, the method comprising:

providing a door, the door being operable by the passenger for providing access to an emergency exit;

providing a seat having a fastener, the passenger being securable to the seat by the fastener;

alerting the passenger of the emergency event using an alert system, the passenger being seated prior to the emergency event;

directing the passenger towards the emergency exit using a directing means, the emergency exit being identified by an identifier; and

determining duration between alerting the passenger of the emergency event and passage of the passenger through the emergency exit using a timer,

wherein the duration is indicative of responsiveness of the passenger to the emergency event.

2. The method of claim 1, wherein the identifier identifies the emergency exit that is nearest to the passenger.

3. The method of claim 1, wherein the identifier and the seat are associated through at least one of colour, shape and symbol.

4. The method of claim 1, wherein the identifier emits light that has the same colour as the seat.

5. The method of claim 1, wherein the fastener is operable for releasing the passenger from the seat on which the passenger is seated.

6. The method of claim 1, wherein the directing means emits at least one of light and sound.

7. The method of claim 1, wherein alerting the passenger of the emergency event comprising:

instructing the passenger to lean forward and adopt a low profile posture.

8. The method of claim 1, further comprising:

providing a descending apparatus for descending the passenger from the emergency exit.

9. The method of claim 8, wherein a slide facilitates the descending of the passenger from the emergency exit.

10. The method of claim 1, wherein the emergency exit and the seat is disposed on a platform.

11. An emergency evacuation trainer for preparing a passenger for responding to an emergency event, the emergency evacuation trainer comprising:

an assembly unit comprising:

an identifier for identifying a door, the door being operable by the passenger for providing access to an emergency exit nearest to the passenger;

an alert system for alerting the passenger of the emergency event;

a fastener for securing the passenger to a seat on which the passenger is seated, the fastener being operable for releasing the passenger from the seat;

a directing means for directing passenger to the emergency exit; and

a timer for determining duration between alerting the passenger of the emergency event and passage of the passenger through the emergency exit,

wherein the duration is indicative of responsiveness of the passenger to the emergency event.

12. The emergency evacuation trainer of claim 11, wherein the identifier identifies the emergency exit that is nearest to the passenger by at least one of colour, shape and symbol matching.

13. The emergency evacuation trainer of claim 11, wherein the alert system alerts the passenger of the emergency event through audio signals.

14. The emergency evacuation trainer of claim 11, wherein the fastener secures the passenger to the seat on which the passenger is seated by at least one of a seat belt and body harness.

15. The emergency evacuation trainer of claim 11, wherein the fastener is operable for releasing the passenger from the seat on which the passenger is seated.

16. The emergency evacuation trainer of claim 11, wherein the directing means directs the passenger to the emergency exit by at least one of visual and audio signals.

17. The emergency evacuation trainer of claim 11, wherein the seat is configurable for allowing the passenger to lean forward and adopt a low profile posture.

18. The emergency evacuation trainer of claim 11, wherein a descending apparatus is couplable to the emergency exit for descending the passenger from the emergency exit.

19. The emergency evacuation trainer of claim 18, wherein a slide facilitates the descending of the passenger from the emergency exit.

20. The emergency evacuation trainer of claim 1, wherein the emergency exit and the seat is disposed on a platform.

21. The emergency evacuation trainer of claim 1, further comprises a generator for generating at least one of smoke and water.