U.S. Department
of Transportation
Federal Aviation
Administration

Advisory Circular

Subject: Passenger Safety Information Briefing and Briefing Cards

Date: 3/5/19 **AC No:** 121-24D

Initiated by: AFS-200 **Change:**

1. PURPOSE OF THIS ADVISORY CIRCULAR (AC). This AC provides updated information regarding the items that are required or recommended content in oral passenger safety briefings and on safety information briefing cards. This AC provides specific information about air carrier operations conducted under Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135. Information about operations conducted under parts 121 and 135 is contained in:

- Appendix 1, Part 121 Operations With at Least One Flight Attendant.
- Appendix 2, Part 121 Operations Without Flight Attendants.
- Appendix 3, Part 135 Operations With and Without Flight Attendants.
- Appendix 4, Brace-for-Impact Positions.
- Appendix 5, Safety Information Briefing Card Content Quick Checklist: 14 CFR Part 121, § 121.571.
- Appendix 6, Sample Postflight Passenger Safety Briefing Comprehension Survey for Air Carrier Data Analysis.

2. AUDIENCE. The primary audience for this AC is air carrier personnel and flight operations, cabin safety, and in-flight safety management involved in crewmember manual guidance, script development, delivery media, and comprehension data measurement for passenger safety information briefings and safety information briefing cards under parts 121 and 135. Principal Operations Inspectors (POI) and Aviation Safety Inspectors—Cabin Safety (ASI-CS) (where applicable) should also be familiar with the contents of this AC.

3. WHERE YOU CAN FIND THIS AC. You can find this AC on the Federal Aviation Administration's (FAA) website at http://www.faa.gov/regulations_policies/advisory_circulars.

4. WHAT THIS AC CANCELS. AC 121-24C, Passenger Safety Information Briefing and Briefing Cards, dated July 23, 2003, is canceled.

5. RELATED CFR PARTS.

- Part 91, § 91.21.
- Part 121, §§ 121.311, 121.317, 121.333, 121.571, 121.573, 121.577, 121.585, 121.586, and 121.589.
- Part 135, §§ 135.21, 135.23, 135.87, 135.117, 135.122, 135.127, 135.128, and 135.129.
- Part 252.

6. RELATED READING MATERIAL (current editions).

a. ACs:

(1) AC 91.21-1, Use of Portable Electronic Devices Aboard Aircraft. Refer to the report from the Portable Electronic Devices Aviation Rulemaking Committee (PED ARC) to the FAA, Recommendations on Expanding the Use of Portable Electronic Devices During Flight, dated September 30, 2013. The report is available at https://www.faa.gov/about/initiatives/ped/media/ped_arc_final_report.pdf.

(2) AC 120-95, Portable Oxygen Concentrators. This AC explains FAA requirements for the use of portable oxygen concentrators (POC) on board aircraft.

b. Information for Operators (InFO):

- InFO 13010, Expanding Use of Passenger Portable Electronic Devices (PED).
- InFO 13010SUP, FAA Aid to Operators for the Expanded Use of Passenger PEDs.
- InFO 11006, Inflatable Seat Belts.

c. Office of Aerospace Medicine (AAM) Technical Reports:

- Effective Presentation Media for Passenger Safety I: Comprehension of Briefing Card Pictorials and Pictograms (DOT/FAA/AM-08/20), September 2008.
- Effect of Passenger Position on Crash Injury Risk in Transport-Category Aircraft (DOT/FAA/AM-15/17), September 2015.

d. Related Research Material. (You can obtain the following documents from various public sources such as the Web, public and university libraries, and the government entities or associations that published them.)

- SAE S-9 Cabin Safety Provisions Committee Documents (available at https://www.sae.org/standards/):
  - SAE ARP5655, Safety Briefings for Passengers in Exit Rows.
  - SAE ARP4771, Recommended Brace Positions.
  - SAE ARP1384D, Passenger Safety Briefing Materials.
  - SAE AIR5471A, Limitations of Braille for Use on Passenger Safety Instruction Cards.
- Chandler R., “Brace for Impact Positions,” Proceedings of the Fifth Annual International Aircraft Cabin Safety Symposium, Cosponsored by the University of Southern California, FAA (Western Pacific Region), and Southern California Safety Institute (1988).
- Chittaro, L. & Buttussi, F. “Assessing Knowledge Retention of an Immersive Serious Game vs. a Traditional Education Method in Aviation Safety.” IEEE Transactions on Visualization and Computer Graphics 21, No. 4 (2015): 529-538.
- Chittaro, L. “Designing Serious Games for Safety Education: ‘Learn to Brace’ versus Traditional Pictorials for Aircraft Passengers.” IEEE Transactions on Visualization and Computer Graphics 22, No. 5 (2016): 1527-1539.

- Chittaro, L., Corbett, C.L., McLean, G.A., & Zangrando, N. "Safety Knowledge Transfer through Mobile Virtual Reality: A Study of Aviation Life Preserver Donning." Safety Science Vol. 102 (2018): 159-168.
- Buttussi, F. & Chittaro, L. "Effects of Different Types of Virtual Reality Display on Presence and Learning in a Safety Training Scenario." IEEE Transactions on Visualization and Computer Graphics PP, No. 99 (2017).
- International Civil Aviation Organization (ICAO) Doc 10086, "Manual on Information and Instructions for Passenger Safety" (2017).
- U.S. Department of the Interior, Interagency Aviation Safety Alert No. IA SA 13-01 "Helicopter Brace for Impact Positions" (2013).

7. BACKGROUND. An alert, knowledgeable person has a much better chance of surviving any life- or injury-threatening situation that could occur during passenger-carrying operations in civil aviation. Therefore, the FAA requires U.S. air carriers and commercial operators to develop oral briefings and passenger safety information briefing cards. Collectively, both the briefings and safety information briefing cards shall be referred to as the passenger safety information system. All large operators have now implemented a Safety Management System (SMS), which requires each airline to develop and maintain processes and systems to acquire data regarding its operations, products, and services to monitor the safety performance of the organization, which would include compliance with the existing requirements surrounding the passenger safety information system. Consideration should be given to the content and assessment of the passenger safety information system delivery methods, taking into account passenger behavior and strategies to mitigate distractions during safety briefings. Every passenger should be motivated to focus on the safety information in the required passenger safety briefing; however, motivating people, even when their own personal safety is involved, is not easy. One way to increase passenger motivation is to make the safety information briefings and safety information cards as interesting, entertaining, and attractive as possible. In 1985, the National Transportation Safety Board (NTSB) published a safety study of passenger safety briefing methods titled, Airline Passenger Safety Education: A Review of Methods Used to Present Safety Information (NTSB/SS-85/09). The NTSB provided three recommendations to improve safety information briefings:

- Tests and minimum comprehension standards needed to be developed to assure proper passenger actions based on the safety information presented;
- Revised air carrier Operations Handbooks, Bulletins, and FAA inspector training programs were needed to provide better guidance based on results of passenger comprehension surveys and testing; and
- A revision to AC 121-24 to include updated information on a variety of emergency procedures.

a. This AC encourages individual operators to be innovative in their approach to imparting such information. This AC also encourages evaluation of passenger comprehension of the safety information throughout the development process of the videos or briefing cards, and postflight surveys should be conducted to validate passenger comprehension and mitigate the ever-increasing distractions from passenger supplied portable electronic devices (PED) used during safety briefings. For specific recommendations, please refer to the applicable appendix.

To encourage innovation, the Civil Aerospace Medical Institute (CAMI) Cabin Safety Research Team has been in active collaboration with the Human-Computer Interaction Laboratory at the University of Udine, Italy (refer to http://hcilab.uniud.it/) to evaluate and analyze oral briefings with standard symbols included in safety information briefing cards and compare it to safety information using educational games. The use of "Serious Games" and computer applications are a topic of research which is looking at the efficacy of interactive, education/entertainment applications to improve the transmission and retention of safety information. As technology develops, computer applications could potentially play a larger role as a supplement in passenger education and safety information briefing systems. The use of smartphone applications offers a novel experience where the user interacts with the computer software to practice behaviors that were previously only available to crewmembers during computer based training exercises and passengers during an actual emergency.

b. This collaboration has led to the development and successful deployment of multiple, freely available applications for aviation safety education. These applications are all available at no cost. Additional information is found at https://www.faa.gov/data_research/research/med_humanfacs/aeromedical/cabinsafety/passengerinfo/.

8. AC FEEDBACK FORM. For your convenience, the AC Feedback Form is the last page of this AC. Note any deficiencies found, clarifications needed, or suggested improvements regarding the contents of this AC on the Feedback Form.

ORIGINAL SIGNED by

/s/ Robert C. Carty
Deputy Executive Director, Flight Standards Service

APPENDIX 1. PART 121 OPERATIONS WITH AT LEAST ONE FLIGHT ATTENDANT

This Appendix discusses the passenger briefing and safety information cards for operations conducted under 14 CFR part 121 where at least one flight attendant (F/A) is present.

1. CREWMEMBER PROCEDURES. Passenger briefings may be delivered orally or through video presentations. Each oral briefing provided by a carrier or commercial operator for its passengers must be explained and described in appropriate manuals. The manuals shall also contain a description of F/A tasks and coordination procedures to ensure passenger compliance with information signs and F/A's (or crewmember's) safety instructions. This description should include the stipulation that F/As (or crewmembers) should notify the pilot in command (PIC**)** anytime a passenger refuses to comply with safety instructions. F/As (or crewmembers) should neither be assigned nor perform non-safety-related duties during the safety information briefings if those duties could obstruct the view of the passengers or distract them from active listening.

2. ORAL BRIEFINGS. The pretakeoff oral briefing shall be delivered so that each passenger has the opportunity to hear it and easily see required demonstrations. F/As giving these briefings should speak slowly and distinctly. When there is only one F/A, the F/A should be located so that passengers can see the required demonstration and, if applicable to the flight, demonstrations of specific safety equipment and procedures to be used in an emergency situation during extended overwater operations. When more than one F/A gives the briefings and demonstrations, the F/As should be evenly distributed throughout the passenger cabin. For example, when there are only two F/As, one F/A should give the briefing by using the aft public address (PA) system (if one is available) while the other F/A gives the demonstration at the front and then moves to mid-cabin of the aircraft. This will ensure that passengers in the last rows or in aft-facing seats see the demonstration. F/As giving the demonstrations should coordinate their gestures with the applicable information given in the oral briefing script, be animated, and make eye contact with as many passengers as possible. F/As should be aware of cabin class dividers, extended headrests, sleeper seat partitions, and galley compartments that present a challenge for passenger direct viewing.

3. VIDEO BRIEFINGS. The pretakeoff safety briefing may be given by prerecorded audiotape, videotape, or electronic media[1] means. This method of safety briefing is recommended when the aircraft is equipped with the necessary videotape, sound equipment, or wireless network server. The advantage of prerecorded presentations is the assurance that a complete briefing is given, that the diction is good, and that an overall high quality of the safety information briefing is maintained. Prerecorded presentations also lend themselves very well to a multilingual presentation. In addition, a prerecorded presentation can include "closed captioning" for the deaf and other visual presentations, which may be more meaningful to passengers. In accordance with part 121, § 121.577(d), operators using prerecorded presentations must have procedures to ensure that screens or video monitors that extend into the aisles during the safety

[1] A safety briefing accessed with a WiFi-enabled computer, tablet, or hand-held device must comply with § 121.577(d) and included in free content.

information briefing are properly stowed prior to movement on the surface, takeoff, or landing.[2] Screens or video monitors located at passenger seats that could impede rapid passenger egress should also be stowed properly prior to movement on the surface, takeoff, or landing. When a prerecorded safety information briefing is used, F/As shall be positioned, close to their assigned emergency duty station and evenly distributed between exits. F/As should be attentive and available to passengers who may have questions at the conclusion of the prerecorded safety information briefing. In addition, operators should have alternative safety briefing procedures to follow if the prerecorded or WiFi presentation becomes inoperative.

> **NOTE: Pretakeoff oral, audio, video, or WiFi safety information briefings must contain only information that is essential for safety. For example, paid advertising, schedules, or promotional information is not safety-related and should not be commingled in the safety information briefing script.**

a. Pretakeoff. Passenger safety information briefings are critical to passengers' understanding of procedures that may prevent or minimize serious injuries and fatalities. Section 121.571(a) requires that before takeoff the certificate holder must ensure that passengers have been briefed orally by the appropriate crewmember about safety procedures during the flight. Before each takeoff,[3] the operator must ensure that all passengers are orally briefed on each of the following:

(1) Compliance With Signs and Placards. The safety information briefing must include a statement that the FAA's regulations require passenger compliance with the lighted passenger information signs, posted placards, and instructions of crewmembers (refer to §§ 121.571(a)(1)(iii) and 121.317(k)).

(2) Smoking. The safety information briefing must also include when, where, and under what conditions smoking is prohibited. This must include that:

(a) Smoking, including the use of electronic-cigarettes (e-cigarettes),[4] is not permitted on the ground, anytime the "No Smoking" sign is illuminated, or while "No Smoking" placards are posted (refer to § 121.317(g) and 14 CFR part 252, § 252.1);

(b) Federal regulations require passenger compliance with the lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas, and F/As' instructions (refer to § 121.571(a)(1)(i));

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[2] Where reference is made to a regulatory requirement, this advisory circular (AC) uses "must" or "shall." Where reference is made to guidelines that are not regulatory requirements, this AC uses "should" or "may."

[3] The appropriate crewmember must orally brief passengers prior to each takeoff, regardless of the number of passengers or, in the case of an intermediate stop, whether or not additional passengers have boarded the aircraft.

[4] An e-cigarette is a battery-powered device that simulates tobacco smoking by producing a heated vapor, which resembles smoke. It is sometimes called "vaping."

(c) Smoking, including e-cigarettes, is prohibited in the lavatories and the aircraft at all times. Tampering with, destroying, or disabling smoke detectors in the lavatories is prohibited by Federal law (refer to §§ 121.571(a)(1)(i), 252.3, and 252.8); and

(d) The instructions of F/As or other appropriate crewmembers regarding smoking, including e-cigarettes,[5] and prohibitions against smoking and use of e-cigarettes must be followed (refer to § 252.17).

(3) Seatbelts (Including Seatbelts, Airbag Seatbelts, and Shoulder Harness Lap Belt Combinations). F/As or other appropriate crewmembers must brief passengers on the method of fastening, tightening, and unfastening seatbelts. Passengers must also be informed that their seatbelts must be fastened anytime the "Fasten Seat Belt" sign is illuminated and should be fastened anytime they are seated. In addition, passengers must be informed that Federal regulations require that they must obey the instructions of the F/As regarding the "Fasten Seat Belt" sign. Crewmembers should brief passengers that seatbelts provide better protection when worn low and tight. (Refer to § 121.317(f) and (k).)

(4) Exits. F/As or other appropriate crewmembers must brief passengers on the location of emergency exits. They should also brief passengers as clearly as possible on any additional information about the exits and physically point them out. Some window exits are equipped with a life line or rope installed in the window frame. On other aircraft equipped for overwater operation, the life line is located in a small overhead stowage bin. This life line is primarily designed to stabilize passengers boarding a liferaft from the slippery surface of the aircraft wing. The National Transportation Safety Board (NTSB) has indicated, in Safety Recommendation A-10-081, that when life lines are installed on extended overwater aircraft, passengers must be briefed on the location to ensure that the life lines can be quickly and effectively retrieved and used. This information shall be included during the safety briefing and supplemented with the illustration on the safety information card (refer to §§ 121.571(a)(1)(ii) and 121.573).

(5) Individual Flotation Equipment.

(a) F/As or other appropriate crewmembers must brief passengers on the type, location, and use of required flotation equipment. This briefing must include the type of equipment available at the individual passenger's seat and the method of use in the water, such as putting the arms through the straps and resting the torso on the cushion. When the aircraft is equipped with life preservers, the safety information briefing must include instructions about the specific location (e.g., under or between seats, or in a side console), removal of life preservers from stowage areas, including pouches, and the donning and inflation of the life preservers. The NTSB recommends that the FAA require 14 CFR parts 91 subpart K (part 91K), 121, and 135 operators to brief passengers on all flotation equipment installed on an airplane, including a full demonstration of correct life preserver retrieval and donning procedures, before all flights, regardless of route (NTSB Safety Recommendation A-10-083). The FAA concurs with this

[5] Part 252 amended rule (81 FR 11415) became effective April 4, 2016. Refer to https://www.federalregister.gov/articles/2016/03/04/2016-04799/use-of-electronic-cigarettes-on-aircraft#h-4.

recommendation and encourages air carriers to revise their safety information briefing guidance for crewmembers.

(b) When a passenger is informed about more than one type of flotation cushion or life preserver, it can be confusing. The different methods of donning and/or operating the individual flotation device shall be depicted on the safety information card and given in the oral safety briefing or demonstration. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a different passenger safety briefing. Another method for informing passengers is to advise them during the oral safety briefing that there are different types of flotation devices on the airplane; therefore, it is important that they study the safety information card carefully and be aware of the differences in the flotation equipment.

(c) Individual flotation equipment for an in-lap child (under the age of 2). Section 121.311 permits an adult occupying an approved seat to hold a child less than 2 years of age. This child is commonly referred to as an "in-lap" child. The FAA's long-standing reading of § 121.340(a) is that all cabin occupants, including in-lap children, must have an individual flotation means available for use. That reading was affirmed in 1996, when the FAA issued a legal interpretation regarding § 121.340(a). The briefing for a parent or caregiver traveling with an in-lap child is more effective when it is part of a special personalized briefing rather than using the PA system. Operators should not invent or create their own unique method of using a flotation device for an adult holding a lap child or infant. Operators must verify that the safety information card illustrations reflect the design specifications for the individual flotation cushion or life preserver (refer to Technical Standard Order (TSO)-C72c, Individual Flotation Devices, and §§ 121.340, 121.571(a)(1)(iv), and 121.573.)

(6) Exit Seating.

(a) In response to NTSB Safety Recommendation A-00-077 regarding a passenger occupying exit seating, the FAA strongly encourages air carriers to require crewmembers to provide a preflight personal briefing to each passenger seated in an exit seat.

1. That requirement should be part of the air carrier's approved Exit Seating Program, and would apply to each passenger seated in an exit seat. Air carrier procedures should direct F/As to engage each passenger in an exit seat in conversation to ensure that each passenger meets the selection criteria for exit seating. FAA inspectors have reported cases where passengers with a non-discernible condition have remained in exit seating, where they would be unlikely to be able to perform the applicable functions listed in the regulation. The preflight individual exit seat verification should include four features (refer to § 121.585(g) and part 135, § 135.129(g)):

(i) A request to read over the safety information briefing card information regarding exit seating;

(ii) Visual assessment by an assigned crewmember to determine suitability of each passenger occupying an exit seat;

(iii) Verbal assessment of the passenger occupying an exit seat; and

(iv) Before the boarding door closure, inform the assigned company personnel that exit seat verification has been confirmed. (Refer to §§ 121.585(g) and 135.129(g).)

2. Refer each passenger to any unique characteristics of the exit included on the safety information briefing card and/or operating instruction placard (e.g., Boeing 737-800 overwing exits are hinged at the top and open outward, or Airbus A320 overwing exits have manual inflation handles in the upper inner corners).[6] Passengers may be seated in exit seating that is also assigned to an F/A. These passengers are encouraged to watch the F/A arm the evacuation slide and assess outside conditions at the exit. Passengers should review pictures of the emergency exit operation sequence, including the location of the backup inflation lanyard. The F/A should ask passengers to review the safety information briefing card for the location, retrieval, and use of life lines when installed at a window exit.

(b) Existing regulations require that passenger safety briefings include a request for passengers seated in exit seats to identify themselves if they feel they cannot or do not wish to perform the exit seat functions included on the safety information briefing card (refer to § 121.585).

(c) An entity undergoing certification shall include a requirement for crewmembers to perform preflight personal briefings in its approved Exit Seating Program. The FAA strongly recommends that each existing air carrier amend its approved Exit Seating Program by including the preflight personal briefing as an integral element.

(7) Passengers Needing Assistance.

(a) An F/A or other appropriate crewmembers must individually brief a passenger who may need assistance in moving expeditiously to an exit.

(b) If the passenger is accompanied by an attendant, the attendant must also be briefed.

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[6] F/As shall engage the passengers at the exit row in conversation to determine that each passenger is suitable for exit seating. Inspectors report that some passengers who were not eligible for exit seating were not immediately identified by the F/A conducting the exit briefing due to the exit briefing technique used. F/As are encouraged to ask different questions of exit seat occupants that do not always require an affirmative response. Inspectors and passengers report F/As have been observed coaching each passenger to provide a verbal “yes” when instructed to do so.

(c) The safety briefing must include information about the most appropriate route to an exit and the most appropriate time to start moving toward that exit. There must also be an inquiry about the most appropriate manner of assisting the person to prevent pain and further injury. (Refer to § 121.571(a)(3).)

(d) Although not required by regulation and depending on the passenger's needs, a discrete individual prelanding briefing may be appropriate.

(8) Floor Proximity Emergency Lighting. An F/A should inform passengers that emergency lights are located at aisle armrests (if applicable), on or near the floor of the aircraft to guide them to an emergency exit (NTSB Recommendation A-83-080). F/As should relay any specific visual features that designate the location of the emergency exit location.

(9) Portable Electronic Devices (PED). Except as provided in part 91, § 91.21, no 14 CFR part 119 certificate holder or PIC may operate or allow the operation of any PEDs on any U.S.-registered aircraft operated by the certificate holder. Passengers' education should include company policy regarding the expanded use of PEDs, with permissible times, conditions, and limitations when various PEDs may be used. Information for Operators (InFO) 13010 provides operators with a method for expanding the allowances of PED use.

(10) Oxygen Equipment Including Passengers Using Oxygen Therapy.

(a) Before reaching 25,000 feet, F/As or other appropriate crewmembers must demonstrate the use of oxygen equipment including locating, donning[7], and adjusting the equipment; any action which might be necessary to start the flow of oxygen; and the prohibition against smoking during oxygen use. Passengers shall also be given instructions regarding the automatic appearance of the oxygen mask in all sections of the cabin including lavatories. In addition, passengers must be instructed to don their own oxygen masks before assisting children with their masks. The announcement must include information that oxygen mask reservoir bags may not inflate, although sufficient oxygen is flowing into the bag[8] (refer to §§ 121.333(f) and 121.571(a)(1)(v)(C)).

(b) If a passenger requires air carrier- or passenger-supplied therapeutic oxygen, the individual briefing (see passenger needing assistance, subparagraph 3a(7)) shall include what to do in case of cabin decompression. The operational altitude for portable oxygen concentrators (POC) is up to 10,000 feet (3,048m) (523 mmHg). Higher altitudes may affect oxygen canister performance; therefore, passengers using therapeutic oxygen should discontinue use of the POC

[7] TSO-C64b, Passenger Oxygen Mask Assembly, Continuous Flow, states, "oxygen masks are of oronasal design, covering the mouth and nose." The crew demonstration must accurately reflect this design specification.

[8] "Pulse oxygen" system technology does not provide a reservoir bag commonly included with chemical oxygen generators and compressed oxygen systems. The oxygen demonstration and safety information cards should accurately instruct the passenger on the use of this oxygen system.

and use the oxygen mask from the passenger service unit. The PIC will announce when it is safe to discontinue use of the decompression oxygen and resume POC use (refer to § 121.574).

(11) Supplemental Information. Passengers shall be briefed regarding safety information briefing cards and additional safety actions. Critical safety information includes the following:

(a) The location of the safety information cards and the fact that they contain additional safety information which the passengers should read.

(b) The briefing shall also contain instructions regarding passenger compliance with the following pretakeoff requirements: proper stowage of each passenger's carry-on baggage, including large PEDs; clear instructions to "leave everything" during an emergency evacuation; positioning of each passenger's seat back to the upright position or sleeper seat in the taxi, takeoff and landing position (TTL); securing each passenger's food and beverage tray in its stowed position; securing or stowing small PEDs in "Airplane Mode"; and stowing of any food, beverage, or tableware.[9] Operators should review briefing procedures and the manner by which passengers are informed of pretakeoff and landing safety information. The contents of briefings and safety cards should ensure that clear instructions are given to "leave carry-on baggage behind" in the event of an evacuation, and the potential consequences of not doing so, are included and embedded in passenger awareness. Consideration should also be given to the content and method of delivery, taking into account passenger behavior and distraction during preflight safety briefings.

(c) Passengers must be reminded to leave carry-on baggage behind during an emergency evacuation. Carry-on baggage during an emergency egress can put other passengers at risk by delaying passenger egress, injuring passengers, obstructing the exit, or potentially damaging an evacuation slide (when installed).

(12) Extended Overwater Operations. If the flight involves extended overwater operations, F/As or other appropriate crewmembers must brief passengers before the overwater portion of the flight begins. This briefing must be given before takeoff if the flight proceeds directly overwater (refer to § 121.573). It shall include:

(a) Exits. F/As or other appropriate crewmembers should instruct passengers on the most appropriate exits for their use. Passengers should be aware of installed life lines or ropes designed to assist passengers while on the aircraft wing surface.

(b) Life Preservers.

1. The F/A or assigned crewmembers shall point out the stowage locations of life preservers and demonstrate their removal from stowage locations (e.g., under seats, between seats, or in a side console), extraction from pouches, donning, and their use including manual and oral inflation methods, instructions on when the equipment should be inflated, and manual

[9] Federal Communications Commission (FCC) regulation 47 CFR part 22, § 22.925 prohibits the use of some cellular service while in-flight. Requiring "Airplane Mode" during PED operation will help prevent a violation of these regulations.

operation of survivor locator lights and accessories. If there are significant differences in the donning or operation of life preservers at various seats, passengers must be briefed on the specific characteristics of the life preserver located at the individual passenger's seat. It is recommended that an F/A individually brief the parent or guardian accompanying a child on the use of life preservers as it applies to a child (refer to § 121.339(a)(1)).

2. When a passenger is briefed about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a specific passenger safety briefing. Where a single briefing card depicts multiple types of individual flotation equipment but only one type of equipment is provisioned, passengers must be specifically informed that the particular aircraft is equipped with only that specific type of individual flotation equipment. It is important that the announcement emphasizes the importance of studying the safety information card carefully and being aware of the differences in the flotation equipment. The different methods of donning and/or operating the individual flotation device shall be depicted on the safety information card and given in the oral safety briefing or demonstration (refer to §§ 121.571(a)(1)(iv) and 121.573).

(c) Liferafts and Slide/Rafts. F/As or other appropriate crewmembers must instruct passengers on liferaft and slide/raft retrieval from stowage and their preparation for use.

(d) Information on Cards. The extent to which safety information briefing cards enhance passenger action in emergencies is directly related to the clarity and comprehension of the elements of the safety information system. NTSB Safety Recommendations describe the importance of safety briefings and safety information cards and establish the necessity for unambiguous directions to passengers regarding the availability and location of flotation equipment. NTSB Safety Recommendation A-10-081 suggests that passengers shall be aware of life lines installed in the window frame. These life lines are typically designed to assist passengers egressing through an overwing exit during a ditching or unplanned water landing. F/As shall emphasize during the briefing that not all aircraft equipment is identical, and a review of the safety information card is important. Safety information briefing cards with pictorials and illustrations of overwater equipment, including life lines must be specific to the aircraft make, model, and configuration. Safety information briefing cards shall not commingle extended overwater and non-extended-overwater equipment on the same card (refer to § 121.571(b)).

b. Post-Takeoff.

(1) Seatbelts (Including Seatbelts, Airbag Seatbelts, and Shoulder Harness Lap Belt Combinations). Immediately before or after the "Fasten Seat Belt" sign is turned off, an announcement must be made that passengers shall keep their seatbelts fastened while seated even if the "Fasten Seat Belt" sign is turned off. The possibility of encountering unexpected turbulence should be emphasized to passengers. Blatant and repeated disregard for crewmember

instructions regarding the seatbelt sign compliance shall be reported to the PIC as a potential noncompliant, disruptive passenger. (Refer to §§ 121.317(f) and (k) and 121.571(1)(iii).)[10]

(2) Information Signs. F/As or other appropriate crewmembers must remind passengers that Federal regulations require passengers to be seated anytime the "Fasten Seat Belt" sign is illuminated; this is especially true when passengers are seated without their seatbelts fastened. Many times, one announcement is not enough; therefore, repeated announcements may be necessary, especially when flying through turbulent air.

c. Prelanding. A prelanding briefing is recommended and should include the following:

- Seatbelts must be securely fastened.
- Exit seat visual and verbal validation.
- PEDs, such as laptop computers and DVD players, should be powered down and stowed. An operator must provide instructions for stowing or securing all PEDs during critical phases of flight (refer to InFO 13010).
- Tray tables must be secured in their stowed position.
- Seat backs must be in a fully upright position; sleeper seats and lie-flat seats must be returned to TTL; and seats with adjustable footrest and headrests must be retracted.
- Food, beverages, or tableware must be picked up.
- Carry-on baggage and movie/video screens must be properly stowed for landing.

d. Postlanding. Postlanding safety instructions are not required by regulation; however, they are the industry standard practice. After landing, an F/A or other appropriate crewmember should inform passengers to remain seated with seatbelts fastened until the "Fasten Seat Belt" sign has been turned off. This announcement should be accompanied by an explanation that this is for passenger safety and the safety of those seated around them. The signal to release the seatbelt, gather belongings, and proceed to the exit is when the pilot turns off the "Fasten Seat Belt" sign. In addition, passengers should be reminded to use caution when opening the overhead bins; items may have shifted and could potentially injure seated passengers by falling from overhead bins. Passengers should be cautioned on the appropriate time to use cell phones in accordance with air carrier procedures. Passengers should also be reminded about prohibitions against smoking.

4. PASSENGER SAFETY INFORMATION BRIEFING CARDS. Oral briefings must be supplemented with safety information briefing cards, which must be pertinent only to that type, model, and configuration of the aircraft, and consistent with the airline's procedures. The information on the safety information briefing cards should be consistent with the information contained in the air carrier's manuals. When the safety-related aspects of aircraft equipment are different, even within the same model of aircraft, the air carrier must provide safety information briefing cards specific to that aircraft. Merely labeling exits, liferafts, or other safety-related equipment with the type and model of aircraft is not sufficient. Safety information briefing cards must show the most common method used to operate the emergency exits in an emergency.

[10] However, for example, if the incident involves failure to fasten a seatbelt, there may not be a legal basis for criminal action from the local law enforcement unit.

They must also show the location and other instructions necessary for the use of emergency equipment, including lavatory oxygen masks and life lines. As stated in the Civil Aerospace Medical Institute (CAMI) research study titled, Effective Presentation Media for Passenger Safety I: Comprehension of Briefing Card Pictorials and Pictograms:

> "Production of briefing card materials would benefit from application of well-known educational principles and instructional techniques from outside aviation, whether produced by professional graphics designers or in-house airline cabin safety professionals… Additional safety briefing card elements that could assist in the passenger education process would include some amount of textual information to focus attention, highlight concepts, and simplify complex pictorials/pictograms. Such clarifications to make the safety information more meaningful could be expected to improve the poor passenger attention to briefing cards prevalent throughout commercial aviation and enhance the personal knowledge and understanding of typical passengers. Standardization of validated safety briefing card information and presentation methods across the airline industry would provide not only a well-founded, consistent safety message, but also a degree of familiarity and, therefore, comprehension never before seen. Finally, adequate conveyance of safety information to passengers will avoid delays and difficulties that could result in injuries and fatalities when emergencies occur."

a. Design, Location, and Layout. Consideration of the design, dimensions, layout, and location of the passenger safety information briefing card can significantly contribute to passenger safety education. The passenger safety information card must be designed and located such that the seated passenger will be able to see and have access to the safety information card when it is placed in its normal location aboard the aircraft. The passenger safety information card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for TTL will be able to visually locate and identify the safety information card. It should not be possible for the safety information card, when it is in its normal location, to slip out of the sight of the passenger. The safety information card should have an eye-catching title or symbol identifying itself as safety or emergency instructions. The mode of presentation should be diagrammatic or pictorial, making written information, to the extent possible, unnecessary. The information on the safety information card must apply to only the type and model of aircraft on which it is used. The method used to depict equipment and actions can be pictures of people, diagrams, drawings, words, or combinations of these. The use of international symbols is encouraged. All depictions should be easy to understand and not complex. Safety information cards should also be interesting and attractive so passengers will want to read them. For example, a multicolored card that has pictures and drawings will be picked up and read more often than a black and white printed card. Information regarding exit seating should be printed on the safety information card in the languages used by the air carrier (refer to § 121.571(b)).

b. Extraneous Information. Passenger safety information briefing cards shall contain only information that is essential for safety. For example, advertising, schedules, or promotional sales related information is not safety-related and must not be on the safety information briefing cards.

c. Content. Safety information briefing cards that provide information to passengers must include:

(1) Passenger Compliance With Safety Information. The instructions on the safety information briefing cards shall advise passengers that they must comply with safety instructions including signs, placards, and instructions from crewmembers. The importance of complying with the "Fasten Seat Belt" sign must be emphasized using pictographs or in text.

(2) Smoking. The passenger safety information briefing cards must inform passengers that smoking, including e-cigarettes, is prohibited in the aircraft lavatory at all times.

(3) Floor Proximity Emergency Lighting. The passenger safety information cards shall inform passengers that emergency egress lights are located on or in the vicinity of the floor of the aircraft.

(4) Exit Seating. An exit seat is a seat with direct access to an emergency exit without entering an aisle or passing around an obstruction. The passenger safety information briefing must call attention to the special exit seating briefing card located at each exit seat. (Certificate holders may elect to incorporate the additional information required to be included in the exit seating briefing cards into the standard safety information briefing cards required for the use of all passengers). Any revised exit seating information card must meet the requirements of § 121.585(b), (d), and (e). Exit seating information briefing cards are part of the approved Exit Seating Program confirmed by the FAA certificate management office (CMO) and described or referenced in operations specification (OpSpec) A022.

(5) Exit Location. The safety information briefing cards must give the location of every available exit in the cabin. The safety information cards should encourage passengers to familiarize themselves with the location of exits other than the one they entered.

(6) Exit Operations. The safety information briefing cards must contain diagrams depicting the emergency opening of each exit type. Any manual operations necessary to successfully complete an evacuation, such as arming, manual inflation of the evacuation slide, location of life lines, operation of the stairs, or the placement of the hatch type exit on the seat or outside the aircraft shall be included. The procedures for the placement of the hatch type exit should be consistent with the procedures in the operator's manual. Showing more than one method of opening a door could be confusing. Lessons learned from interviews with surviving passengers indicated that confusion is sometimes created by a diagram or pictograph of an exit operation only on one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this shall be explained on the safety information cards. The explanation should show that handles are rotated in the direction of the arrow.

(7) Evacuation Slide/Assist Means. The safety information briefing cards must contain instructions for passengers to exit the aircraft and use the slide or other assist means in a manner consistent with the exits on that aircraft. Evacuation instructions for slides, stairs, and window exits depicted on safety information briefing cards shall be in accordance with manufacturers' specification and type certification.

(8) Overwing Exit Use. The safety information briefing cards must contain instructions illustrating the proper method of egressing through an overwing exit. Safety information briefing cards shall also contain instructions for passengers to walk or run on any ramp that leads from an exit. The direction and route of escape after leaving overwing exits shall also be included. The procedure for placement of the window exit plug must be consistent with the procedure in the operator's manual. NTSB Safety Recommendation A-10-081, following US Airways Flight 1549 ditching on the Hudson River,[11] states that passengers should be aware of life lines installed in the window frame. These assist devices are typically designed to assist passengers egressing through an overwing exit or boarding a raft during a ditching or unplanned water landing. Where certification for ditching in accordance with 14 CFR part 25, § 25.801 is applicable, there must be provisions to store life lines. Accordingly, safety information briefing cards must identify life line stowage and instructions to enable the occupants to stay on the wing after ditching. Life line provisions are described in § 25.1411, which states:

> "(g) *Life line stowage provisions*. If certification for ditching under § 25.801 is requested, there must be provisions to store life lines. These provisions must—
>
> (1) Allow one life line to be attached to each side of the fuselage; and
>
> (2) Be arranged to allow the life lines to be used to enable the occupants to stay on the wing after ditching."

(9) Carry-On Baggage. The safety information briefing cards should inform passengers that in an emergency situation, they should not bring carry-on baggage to the exit. Evidence from evacuations of airplanes since 2013 has shown that significant numbers of passengers attempt to take time to retrieve carry-on baggage with them when evacuating an aircraft.[12] Such passenger behavior could be interpreted as failure to follow crewmember instructions. Passengers who bring carry-on baggage with them present a significant hindrance to egress, risk injuring other passengers, and potential damage to evacuation slides. Information on the proper method of securing or stowing PEDs should be included in the safety briefing. Passengers should be aware that passenger seat pockets are not appropriate for heavy items such as laptop computers or large tablets.

(10) Brace Position. To prepare for an accident, one action that an occupant can take to contribute to their survival is to assume an appropriate brace-for-impact position. The safety information cards shall contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, oblique-, and side-facing) and all seat spacing for that aircraft. To reduce detrimental interaction between the occupant's arms and the seat back, the brace position for forward-facing passenger seats has

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[11] NTSB Aircraft Accident Report, Loss of Thrust in Both Engines After Encountering a Flock of Birds and Subsequent Ditching on the Hudson River, US Airways Flight 1549, Airbus A320-214, N106US, Weehawken, New Jersey, January 15, 2009: http://www.ntsb.gov/investigations/AccidentReports/Reports/AAR1003.pdf.

[12] Passengers who fail to follow crewmember instructions and remove carry-on baggage during an emergency evacuation could be subject to a civil penalty (refer to the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program).

been modified by placing the hands down by the lower legs instead of on the seat back. This alternate position was successful in significantly reducing head and neck injury risk for all of the seat back types evaluated in a 2015 CAMI research study. The current positions recommended in Appendix 4, Brace-for-Impact Positions, have been revised to provide an equivalent level of safety for all passenger seat back types.

(11) Individual Flotation Equipment.

(a) The safety information briefing cards must depict the stowage location of individual flotation equipment and contain instructions concerning removal of the flotation devices from the stowage locations. The pictorial for the individual flotation device must show: extraction from the stowage pouches or packages, manual and oral inflation backup systems, their use in the water, and the manual operation of survivor locator lights and accessories, as appropriate (refer to § 121.571(b)(2)). The cards should depict the method of fitting adult life preservers on small children.[13] If the operator supplies child flotation devices, the donning and method of inflation of these flotation devices should be depicted on the cards.

(b) When a safety briefing contains information about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat location. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. On each aircraft where a single briefing card depicts multiple types of individual flotation equipment but only one type of equipment is provisioned, passengers must be specifically informed that that their particular aircraft is equipped with only that specific piece of equipment. (Refer to §§ 121.571(a)(1)(iv) and 121.573).[14] Life preservers with water-activated lights are required for operators certified for extended overwater operations under § 25.1415. Air carriers should not invent or create their own unique method of using a flotation device with an adult holding a lap child or infant. Operators should verify that the safety information briefing card illustrations reflect the design specifications for the individual flotation cushion or life preserver (refer to TSO-C72c).

(12) Group Flotation. The safety information card must contain information on the location and operation of group flotation where available. For example, a detachable inflated single lane slide can be used as a flotation platform with handheld straps. The single slide can be inverted to accommodate an injured passenger or small child (refer to §§ 121.340(a) and 121.573(a)).

(13) Oxygen Masks. The safety information briefing cards should contain instructions on the location, donning (over nose and mouth), and means for adjusting oxygen masks; any further

[13] Operators should verify that the safety information card illustrations reflect the manufacturer's specification for the use of an individual flotation cushion or life preserver (refer to TSO-C72c).
[14] An aircraft not certified for ditching under § 25.801 and not having a life preserver must have an approved flotation means for each occupant. For example, a safety information card that shows an adult holding an infant with a flotation seat cushion does not meet the intent of TSO-C72c.

actions needed to start the flow of oxygen; and instructions to passengers to don their own oxygen mask before assisting children with their masks. The passenger safety information briefing card should include the location and operation of the lavatory oxygen mask and any action needed (such as removing a cover) to start the flow of oxygen (refer to § 121.333(f)).

(14) PEDs. In its final report, the PED Aviation Rulemaking Committee (ARC) concluded that most commercial airplanes can tolerate radio interference signals from PEDs and recommended that the FAA provide airlines with new procedures to assess if their airplanes can tolerate radio interference from PEDs.[15] In 2015, the FAA agreed with the ARC and revised the guidance to allow air carriers to expand their PED policies. Once an airline verifies the tolerance of its fleet, it can allow passengers to use hand-held, lightweight electronic devices, such as tablets, e-readers, and smartphones in "Airplane Mode," at all altitudes. In rare instances of low-visibility, the crew will instruct passengers to turn off their devices during landing. The group also recommended that heavier devices should be safely stowed under seats or in overhead bins during takeoff and landing. The safety information cards should inform passengers of permissible times, conditions, and limitations when various PEDs may be used. (Refer to guidance in InFO 13010 and InFO 13010SUP.)

(15) Supplemental Information. The safety information briefing cards may contain supplemental instructions. For example, for takeoff and landing, carry-on baggage and tray tables must be properly stowed, galley service items must be collected from passengers and stowed, and seat backs must be placed in their fully upright position (refer to §§121.577(b) and 121.589(c)).

(16) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the safety information briefing cards must depict liferaft and slide/raft stowage, launching, and securing locations. When life lines are used to stabilize passengers during egress from window exits, the safety information briefing cards must depict how to access the life line, and how and where to attach the life line to the wing. The safety information briefing cards also must contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing liferafts or slide/rafts to the aircraft. As a safety mitigation strategy to address NTSB Safety Recommendation A-10-081, operators are required to provide information about life lines, if the aircraft is equipped with them, to ensure that the life lines can be quickly and effectively retrieved and used. (Refer to § 25.1411(g).)

[15] Refer to http://www.faa.gov/about/initiatives/ped/media/ped_arc_final_report.pdf.

APPENDIX 2. PART 121 OPERATIONS WITHOUT FLIGHT ATTENDANTS

This Appendix discusses passenger safety information briefings and passenger safety information cards for 14 CFR part 121 operations where flight attendants (F/A) are not used.

1. CREWMEMBER PROCEDURES. Passenger briefings are delivered orally or through video presentations. Each oral briefing provided by a carrier or commercial operator for its passengers must be explained and described in appropriate manuals. The manuals should also contain a description of crewmember tasks and procedures to ensure passenger compliance with information signs and safety instructions. This description should include the stipulation that crewmembers should notify the pilot in command (PIC) anytime a passenger refuses to comply with safety instructions. Crewmembers should neither be assigned nor perform non-safety-related duties during the safety information briefings if those duties could obstruct the view of the passengers or distract them from active listening.

2. ORAL BRIEFINGS. The pretakeoff oral briefing must be delivered so that each passenger can clearly hear it. Crewmembers giving these briefings should speak slowly and distinctly. The pretakeoff oral briefing may be given by audiotape or videotape means.

3. AUDIO AND/OR VIDEO BRIEFINGS. The pretakeoff safety briefing may be given by prerecorded audiotape, videotape, or electronic media means. This method of safety briefing is a consideration when the aircraft has a single pilot and is equipped with the necessary videotape and sound equipment, or wireless network server. The advantage of prerecorded presentations is the assurance that a complete briefing is given, that the diction is good, and that an overall high quality of the safety information briefing is maintained. Prerecorded presentations also lend themselves very well to a multilingual presentation. In addition, a prerecorded video presentation can include “closed captioning” for the deaf and other visual presentations, which may be more meaningful to passengers. In accordance with part 121, § 121.577(d), operators using prerecorded presentations must have procedures to ensure that screens or video monitors that extend into the aisles during the safety information briefing are properly stowed prior to movement on the surface, takeoff, or landing.[1] Screens located at passenger seats that could impede rapid passenger egress also should be stowed properly prior to movement on the surface, takeoff, or landing. In addition, operators should have alternative safety information briefing procedures to follow if the prerecorded presentation becomes inoperative.

a. Pretakeoff. Before each takeoff, the operator must ensure that all passengers are orally briefed on each of the following (refer to § 121.571(a)):

(1) Compliance With Signs and Placards. The safety information briefing must include a statement that the FAA’s regulations require passenger compliance with the lighted passenger information signs (if installed) and posted placards (refer to § 121.317).

[1] A safety briefing accessed with a WiFi-enabled computer, tablet, or hand-held device must comply with § 121.577(d) and included in free content.

(2) Smoking. The passenger safety information briefing cards must inform passengers that smoking, including e-cigarettes, is prohibited in the aircraft lavatory at all times. This must include that:

(a) Smoking, including the use of e-cigarettes, is not permitted on the ground, anytime the "No Smoking" sign is illuminated or, when "No Smoking" placards are present (refer to 14 CFR part 252, § 252.11);

(b) Federal regulations require passenger compliance with the lighted passenger information signs (if required), posted placards, areas designated for safety purposes as no smoking areas, and crewmembers' instructions (refer to § 121.571(a)(1)(i));

(c) Smoking, including e-cigarettes, is prohibited in the lavatories (if installed) and other designated nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the lavatories is prohibited by Federal law (refer to §§ 121.571(a)(1)(i) and 252.1); and

(d) The instructions of crewmembers regarding smoking and prohibitions against smoking, including e-cigarettes, must be followed.

(3) Seatbelts (Including Seatbelts, Airbag Seatbelts, and Shoulder Harness Lap Belt Combinations). Crewmembers must brief passengers on the method of fastening, tightening, and unfastening seatbelts; and that seatbelts should be worn low and tight. Passengers must also be informed that their seatbelts must be fastened anytime the "Fasten Seat Belt" sign is illuminated (if installed) and must be fastened anytime they are seated. In addition, passengers must be informed that they must obey the instructions of crewmembers regarding the use of seatbelts. (Refer to § 121.317(f) and (k).)

(4) Seat Backs. Crewmembers must brief passengers regarding the need to have their seat backs in an upright position before takeoff and landing.

(5) Exits. Crewmembers must brief passengers on the location of emergency exits. Crewmembers should also brief passengers as clearly as possible on any additional information about the exits. The passengers seated nearest to a door or exit must be individually briefed on the arming and operation of that door or exit. Some window exits are equipped with a life line or rope installed in the window frame. On other aircraft equipped for overwater operation, the life line is located in a small overhead stowage bin. This life line is primarily designed to stabilize passengers boarding a liferaft from the slippery surface of the aircraft wing. The National Transportation Safety Board (NTSB) has indicated, in Safety Recommendation A-10-081, that when life lines are installed on extended overwater aircraft, passengers must be briefed on the location to ensure that the life lines can be quickly and effectively retrieved and used. This information should be included during the safety briefing or illustrated on the safety information card (refer to §§ 121.571(a)(1)(ii) and 121.573).

(6) Survival Equipment. Crewmembers must include in these briefings information about the location of survival equipment.

(7) Fire Extinguisher. Crewmembers must brief passengers on the location and use of fire extinguishers. (Refer to § 121.571(a)(1)(v)(D).)

(8) Individual Flotation Equipment.

(a) Appropriate crewmembers must brief passengers on the type, location, and use of required flotation equipment. This briefing must include the type of equipment available at the individual passenger's seat and the method of use in the water, such as putting the arms through the straps and resting the torso on the flotation seat cushion. When the aircraft is equipped with life preservers, the safety information briefing must include instructions about the specific location (e.g., under or between seats, or in a side console), removal of life preservers from stowage areas, including pouches, and the donning and inflation of the life preservers. The NTSB recommends that the FAA require 14 CFR parts 91 subpart K (part 91K), 121, and 135 operators to brief passengers on all flotation equipment installed on an airplane, including a full demonstration of correct life preserver retrieval and donning procedures, before all flights, regardless of route (NTSB Safety Recommendation A-10-083). FAA concurs with this recommendation and encourages air carriers to revise their safety information briefing guidance for crewmembers.

(b) When the safety briefing includes more than one type of flotation cushion or life preserver, it can be confusing. The different methods of donning and operating the individual flotation device must be specific to equipment installed on the aircraft, depicted on the safety information briefing card, and provided in the oral briefing, video, or live demonstration (refer to §§ 121.571(a)(1)(iv) and 121.573). One method of delivering the passenger briefing is to describe the type, location, and operation of flotation equipment in each class of service during the oral briefing. For some operators, this may mean specialized safety information cards and individual oral briefings for specific seating configurations. When two sections on the same aircraft are equipped differently, the operator shall provide a flotation equipment safety briefing with corresponding pictorial instructions on the safety information briefing card. Operators shall emphasize that it is important that passengers study the safety information briefing card carefully and be aware of the number, type, and instructions for the operation of flotation equipment available within reach of their seat.

(c) Infant life vests and overwater briefings. Section 121.340(a) requires that an airplane be equipped with a life preserver or approved flotation means for each occupant, that the device be within easy reach of each seated occupant and readily removable from the airplane. Section 121.311 permits an adult occupying an approved seat to hold a child less than 2 years of age. This child is commonly referred to as an "in-lap" child.

1. One purpose of § 121.340(a) is to ensure that a flotation means is provided for each occupant. The flotation means may be a life preserver, a seat cushion, or a combination of flotation means. The FAA's long-standing reading of § 121.340(a) is that all cabin occupants, including in-lap children, must have an individual flotation means available for use. That reading was affirmed in 1996, when the FAA issued a legal interpretation regarding § 121.340(a). The Office of General Counsel (AGC) found that the rule requires a flotation means for all cabin occupants, including "in-lap" children. As a practical matter, an adult would probably have trouble trying to control a child being buoyed by a typical full-sized life vest or seat cushion in

the unlikely event of a landing in water. Survival factors research indicates that an in-lap child would benefit from specially-designed flotation equipment that keeps the child's torso out of the water. Accordingly, the FAA encourages operators to consider providing appropriately designed flotation equipment, either life preservers or other approved equipment, for use by in-lap children.

2. If an operator should elect to provide specially sized flotation equipment for in-lap children, and if that equipment should be located differently from the typical flotation equipment for other occupants, or should operate differently, then additional information regarding that special equipment would be required in the briefing given to passengers. On the other hand, if that special equipment should differ only in respect to size (child size versus adult size) but not location or function (both life vests are stored and donned similarly) then no additional information would be required in the oral briefing.

3. Operators should not invent or create their own unique method of using an individual flotation device with an adult holding a lap child or infant. Operators should verify that the safety information card illustrations reflect the design specifications for the individual flotation cushion or life preserver (Refer to the manufacturer's specifications and Technical Standard Order (TSO)-C72c, Individual Flotation Devices).

(9) Group Flotation. The safety information briefing card must contain information on the location and operation of liferafts and/or slide rafts with survival equipment. Safety information briefing cards shall not commingle extended overwater and non-extended-overwater equipment on the same card (refer to § 121.571(b)).

(10) Exit Seating.

(a) In its response to the NTSB Recommendation A-00-077 on exit seating, the FAA encouraged air carriers to require crewmembers to provide a preflight personal briefing to each passenger seated in an exit seat. The requirement is part of the air carrier's approved Exit Seating Program and applies to each passenger seated in an exit seat. The preflight personal briefing should:

1. Clearly explain what each such passenger should do in the event the exit might be needed.

2. Refer each such passenger to the information included on the safety information briefing card.

(b) Existing regulations (§ 121.585) require that passenger briefings include a request for passengers seated in exit seats to identify themselves if they feel they cannot or do not wish to perform the exit seat functions included on the passenger information card.

(c) An entity undergoing certification should include a requirement for crewmembers to perform preflight personal briefings in its approved Exit Seating Program. The FAA strongly recommends that each existing air carrier amend its approved Exit Seating Program by including the preflight personal briefing as an integral element.

(11) Passengers Needing Assistance. Crewmembers must individually brief a passenger who may need assistance in moving expeditiously to an exit. If the passenger is accompanied by an attendant, the attendant must also be briefed. The safety briefing must include information about the most appropriate route to an exit and the most appropriate time to start moving toward that exit. There must also be an inquiry about the most appropriate manner of assisting the person to prevent pain and further injury. (Refer to § 121.571(a)(3).) Although not required by regulation and depending on the passenger's needs, a prelanding briefing may be appropriate.

(12) Floor Proximity Emergency Lighting. Crewmembers should inform passengers that emergency lights are located on or near the floor of the aircraft to guide them to an emergency exit (when floor proximity emergency lighting is installed) (NTSB Recommendation A-83-080). Crewmembers should relay any specific visual features that designate the location of the emergency exit location.

(13) Portable Electronic Devices (PED). Except as provided in part 91, § 91.21, no part 119 certificate holder or PIC may operate or allow the operation of PEDs on any U.S.-registered aircraft operated by the certificate holder. Passengers' safety education should include air carrier policy regarding the use of PEDs, with permissible times, conditions, and limitations when various PEDs may be used. Information for Operators (InFO) 13010 provides operator guidance for expanding PED use.

(14) Oxygen Equipment.

(a) Passengers shall also be given instructions regarding the automatic appearance of the oxygen mask in all sections of the cabin, including lavatories. In addition, passengers shall be instructed to don their own oxygen masks before assisting a child with a mask. The announcement must include information that oxygen mask reservoir bags may not inflate, although sufficient oxygen is flowing into the bag (refer to § 121.333(f)).

(b) If a passenger requires air carrier- or passenger-supplied therapeutic oxygen, the briefing should include what to do in case of cabin decompression. The operational altitude for portable oxygen concentrators (POC) is up to 10,000 feet (3,048 m) (523 mmHg). Higher altitudes may affect oxygen canister performance; therefore, passengers using therapeutic oxygen should discontinue use of the POC and use the oxygen mask from the passenger service unit. The PIC will announce when it is safe to discontinue use of the decompression oxygen (refer to the current edition of Advisory Circular (AC) 120-95, Portable Oxygen Concentrators).

(15) Supplemental Information. Passengers shall be briefed regarding passenger safety information briefing cards and additional safety actions. Critical information includes the following:

(a) The location of the safety information briefing cards and the fact that they contain additional safety information which the passengers should read.

(b) The oral safety briefing should also contain instructions regarding passenger compliance with the following pretakeoff requirements: proper stowage of each passenger's carry-on baggage; securing each passenger's food and beverage tray in its stowed position; and securing any food, beverage, or tableware (refer to §§ 121.589(c) and 121.577(b)).

(c) Passengers must be instructed to leave carry-on baggage behind during an emergency evacuation. Carry-on baggage during an emergency egress can put other passengers at risk by delaying passenger egress, injuring passengers, obstructing the exit, or potentially damaging the evacuation slide (when installed).

(16) Extended Overwater Operations. If the flight involves extended overwater operations, crewmembers must brief passengers before the overwater portion of the flight begins. This briefing must be given before takeoff if the flight proceeds directly overwater. It should include:

(a) Exits. Crewmembers should instruct passengers on the most appropriate exits for their use.

(b) Life Preservers.

1. The assigned crewmember shall point out the stowage locations of life preservers and demonstrate their removal from stowage locations (e.g., under seats, between seats, or in a side console), extraction from pouches, donning, and their use including manual and oral inflation methods, instructions on when the equipment should be inflated, and manual operation of survivor locator lights and accessories. If there are significant differences in the donning or operation of life preservers at various seats, passengers should be briefed on the specific characteristics of the life preserver located at the individual passenger's seat. It is recommended that a crewmember individually brief the parent or guardian accompanying a child on the use of life preservers as it applies to a child (refer to § 121.339(a)(1)).

2. When a passenger is informed about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a different passenger safety briefing. Another method for informing passengers is to advise them during the oral safety briefing that there are different types of flotation devices on the airplane, therefore, it is important that they study the safety information card carefully and be aware of the differences in the flotation equipment. The different methods of donning and/or operating the individual flotation device should be depicted on the safety information card and given in the oral safety briefing or demonstration (refer to §§ 121.571(a)(1)(iv) and 121.573).[2]

3. Infant life vests and overwater briefings. See subparagraph 3a(8)c for information regarding flotation means for in-lap children.

[2] An aircraft not certified for ditching under 14 CFR part 25, § 25.801 and not having a life preserver must have an approved flotation means for each occupant. For example, a safety information card that shows an adult holding an infant with a flotation seat cushion does not meet the intent of TSO-C72c.

(c) Liferafts and Slide/Rafts. Crewmembers must instruct passengers on liferaft and slide/raft retrieval from stowage and their preparation for use.

(d) Information on Safety Information Briefing Cards. Crewmembers should emphasize that review of the passenger safety information cards is important. Safety information briefing cards shall not commingle extended overwater and non-extended-overwater equipment on the same card (refer to § 121.571(b)).

b. Post-Takeoff. If a "Fasten Seat Belt" sign is installed, then immediately before or after the "Fasten Seat Belt" sign is turned off, an announcement must be made that passengers should keep their seatbelts fastened while seated even if the "Fasten Seat Belt" sign is turned off. If there is no "Fasten Seat Belt" sign installed, then crewmembers should inform passengers as soon as possible after takeoff that they should keep their seatbelts fastened. The possibility of encountering unexpected turbulence should be emphasized to passengers (refer to § 121.571(a)(1)(iii)).

c. Prelanding. A prelanding briefing is recommended and should include the following: seatbelts must be securely fastened; smoking materials must be extinguished; tray tables and conference tables (if the aircraft is so equipped) must be secured in their stowed position; seat backs must be in a fully upright position; sleeper seats and premium business seats should be returned to the taxi, takeoff and landing position (TTL); footrest retracted; food, beverages, or tableware must be picked up; and carry-on baggage, including PEDs and movie/video screens must be properly stowed for landing.

d. Postlanding. Postlanding safety instructions are not required by regulation; however, they are the industry standard practice. After landing, an appropriate crewmember should inform passengers to remain seated with seatbelts fastened until the "Fasten Seat Belt" sign has been turned off. This announcement should be accompanied by an explanation that this is for passenger safety and the safety of those seated around them. The signal to release the seatbelt, gather belongings, and proceed to exit is when the pilot turns off the "Fasten Seat Belt" sign. In addition, passengers should be reminded to use caution when opening the overhead bins; items may have shifted and could potentially injure seated passengers by falling from overhead bins. Passengers should be cautioned on the appropriate time to use cell phones in accordance with air carrier procedures. Passengers should also be reminded about prohibitions against smoking.

4. PASSENGER SAFETY INFORMATION CARDS. Oral briefings must be supplemented with safety information briefing cards, which must be pertinent only to that type and model of aircraft and consistent with the airline's procedures (refer to § 121.571)(b).[3] The information on the safety information cards should be consistent with the information contained in the air carrier's manuals. When aircraft equipment is substantially different even within the same model of aircraft, the air carrier should provide safety information cards specific to that aircraft. Merely labeling the equipment depictions with the different types and models of aircraft is not sufficient. Safety information cards must also show the most common method used to operate the

[3] Section 121.571(b): "Each card must contain information pertinent only to the type and model of airplane used for that flight, including—(1) Diagrams of, and methods of operating, the emergency exits; (2) Other instructions necessary for use of emergency equipment."

emergency exits in an emergency and other instructions necessary for the use of emergency equipment.

a. Design, Location, and Layout. Consideration of the design, dimensions, layout, and location of the passenger safety information briefing card can significantly contribute to passenger safety education. The passenger safety information card must be designed and located so that the seated passenger will be able to see and have access to the safety information card when it is placed in its normal location aboard the aircraft. The passenger safety information card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for TTL will be able to visually locate and identify the safety information card. It should not be possible for the safety information card, when it is in its normal location, to slip out of the sight of the passenger. The safety information card should have an eye-catching title or symbol identifying itself as safety or emergency instructions. The mode of presentation should be diagrammatic or pictorial, making written information, to the extent possible, unnecessary. The information on the safety information card must apply to only the type and model of aircraft on which it is used. The method used to depict equipment and actions can be pictures of people, diagrams, drawings, words, or combinations of these. The use of international symbols is encouraged. All depictions should be easy to understand and not complex. Safety information cards should also be interesting and attractive so passengers will want to read them. For example, a multicolored card that has pictures and drawings will be picked up and read more often than a black and white printed card. Information regarding exit seating should be printed on the safety information card in the languages used by the air carrier (refer to § 121.571(b)).

b. Extraneous Information. Passenger safety information briefing cards should contain only information that is essential for safety. Each safety information briefing card must contain information pertinent only to the type and model of airplane used for that flight. For example, advertising, schedules, or promotional sales information is not safety-related and should not be on the cards.

c. Content. Safety information briefing cards that provide information to passengers must include:

(1) Passenger Compliance With Safety Information. The instructions on the safety information briefing cards shall advise passengers that they must comply with safety instructions including signs, placards, and instructions from crewmembers. The importance of complying with the “Fasten Seat Belt” sign should be emphasized using pictographs or text.

(2) Smoking. The safety information briefing cards must inform passengers that smoking, including e-cigarettes, is prohibited in the aircraft lavatory at all times.

(3) Seatbelts (Including Seatbelts, Airbag Seatbelts and Shoulder Harness Lap Belt Combinations). The safety information briefing cards should have instructions for fastening, tightening, and opening seatbelts.

(4) Seat Backs. The safety information briefing cards should provide instructions to passengers that their seat backs should be in the upright position for takeoff and landing. (Refer to § 121.571(a)(1)(v)(A).)

(5) Floor Proximity Emergency Lighting. If the aircraft is equipped with floor proximity emergency lighting, the cards should inform passengers that emergency lights are located on or in the vicinity of the floor of the aircraft.

(6) Exit Seating. An exit seat is a seat with direct access to an emergency exit without entering an aisle or passing around an obstruction. The passenger safety briefing must call attention to the existence of special exit seating briefing cards located at exit seats. (Certificate holders may elect to incorporate the additional information required to be included in the exit seating briefing cards into the standard safety information briefing cards required to be provided for the use of all passengers). Exit seat information on safety cards must meet the requirements of § 121.585(b), (d), and (e). The exit seating briefing cards are part of the approved Exit Seating Program described or referenced in operations specification (OpSpec) A022.

(7) Exit Location. The safety information cards must give the location of every available exit in the cabin. The safety information cards should encourage passengers to familiarize themselves with the location of exits other than the one they entered.

(8) Exit Operations. The safety information briefing cards must contain diagrams depicting the emergency opening of each exit type. Any manual operations necessary to successfully complete an evacuation, such as arming, manual inflation of the evacuation slide, location of life lines, operation of the stairs, or the placement of the hatch type exit on the seat or outside the aircraft shall also be included. The procedures for the placement of the hatch should be consistent with the procedures in the operator's manual. Showing more than one method of opening a door could be confusing. Lessons learned from interviews with surviving passengers indicate that confusion is sometimes created by a diagram or pictograph of an exit operation only on one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this shall be explained on the safety information cards. The explanation should show that the handles are rotated in the direction of the arrow.

(9) Evacuation Slide/Assist Means. The safety information cards must contain instructions on the best method for exiting the aircraft using the slide or other installed means of assisting the passenger to exit the aircraft and get on the ground. Evacuation instructions for slides, stairs, and window exits depicted on safety information briefing cards shall be in accordance with manufacturers' specification and type certification.

(10) Overwing Exit Use. The safety information briefing cards must contain instructions illustrating the proper method of egressing through an overwing exit. Safety information briefing cards shall also contain instructions for passengers to walk or run on any ramp that leads from an exit. The direction and route of escape after leaving overwing exits shall also be included. The procedure for placement of the window exit plug must be consistent with the procedure in the operator's manual. NTSB Safety Recommendation A-10-081, following US Airways Flight 1549 ditching on the Hudson River, states that passengers should be aware of life lines installed in the window frame. These assist devices are typically designed to assist passengers egressing through an overwing exit or boarding a raft during a ditching or unplanned water landing. Where certification for ditching in accordance with § 25.801 is applicable, there must be provisions to store life lines. Accordingly, safety information briefing cards must identify life line stowage and instructions to enable the occupants to stay on the wing after ditching.

(11) Carry-On Baggage. Safety information cards should include clear instructions to "leave everything" behind in the event of an emergency egress. Passengers who remove carry-on baggage during emergency egress continue to present a challenge to airline crewmembers. Many operators include instructions to leave carry-on baggage behind in the event of an evacuation as part of the preflight safety briefing, and often illustrations are included on the safety information card. However, some passengers appear to not heed such information. Post-incident interviews with passengers and crewmembers report that passengers are unaware of the safety hazard that carry-on baggage can pose.

(12) Brace Position. To prepare for an accident, one action that an occupant can take to contribute to their survival is to assume an appropriate brace-for-impact position. The safety information cards shall contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, oblique-, and side-facing) and all seat spacing for that aircraft. To reduce detrimental interaction between the occupant's arms and the seat back, the brace position for forward-facing passenger seats has been modified by placing the hands down by the lower legs instead of on the seat back. This alternate position was successful in significantly reducing head and neck injury risk for all of the seat back types evaluated in a 2015 Civil Aerospace Medical Institute (CAMI) research study. The current positions recommended in Appendix 4, Brace-for-Impact Positions, have been revised to provide an equivalent level of safety for all passenger seat back types.

(13) Location of Survival Equipment. The safety information cards must provide information about the location of survival equipment. This is best done by using diagrams.

(14) Location and Use of Fire Extinguishers. The safety information cards must depict the location of fire extinguishers. In addition, they must provide information regarding the use of fire extinguishers.

(15) Individual Flotation Devices.

(a) The cards must depict their stowage location and contain instructions concerning removal of the devices from the stowage locations, extraction from the stowage pouches or packages, manual and oral inflation backup systems, its use in the water, and the manual operation of survivor locator lights and accessories, as appropriate. The cards should depict the method of fitting adult life preservers on small children. If the operator supplies child flotation devices, the donning and method of inflation of these devices should be depicted on the cards.

(b) When a passenger is informed about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a different passenger safety briefing. Another method for informing passengers is to advise them during the oral safety briefing that there are different types of flotation devices on the airplane, therefore, it is important that they study the safety information card carefully and be aware of the differences in the flotation equipment. The different methods of donning and/or operating the individual flotation device must be depicted

on the safety information card and given in the oral safety briefing or demonstration (refer to §§ 121.571(a)(1)(iv) and 121.573).

(c) Section 121.340(a) requires that an airplane be equipped with a life preserver or approved flotation means for each occupant, that the device be within easy reach of each seated occupant and readily removable from the airplane. Section 121.311 permits an adult occupying an approved seat to hold a child less than 2 years of age. This child is commonly referred to as an "in-lap" child.

1. One purpose of § 121.340(a) is to ensure that a flotation means is provided for each occupant. The flotation means may be a life preserver, a seat cushion, or a combination of flotation means. The FAA's long-standing reading of § 121.340(a) is that all cabin occupants, including in-lap children, must have an individual flotation means available for use. That reading was affirmed in 1996, when the FAA issued a legal interpretation regarding § 121.340(a). AGC found that the rule requires a flotation means for all cabin occupants, including "in-lap" children.

2. As a practical matter, an adult would probably have trouble trying to control a child being buoyed by a typical full-sized life vest or seat cushion in the unlikely event of a landing in water. Survival factors research indicates that an in-lap child would benefit from specially-designed flotation equipment that keeps the child's torso out of the water. Accordingly, the FAA encourages operators to consider providing appropriately designed flotation equipment, either life preservers or other approved equipment, for use by in-lap children.

3. If an operator should elect to provide specially sized flotation equipment for in-lap children, and if that equipment is located differently from the typical flotation equipment for other occupants, or operates differently, then additional information regarding that special equipment would be required in the briefing given to passengers. On the other hand, if that special equipment should differ only in respect to size (child size versus adult size) but not the location or function (both life vests are stored and donned similarly) then no additional information would be required in the oral briefing.

4. Operators should not invent or create their own unique method of using a flotation device with an adult holding a lap child or infant. Operators should verify that the safety information card illustrations reflect the design specifications for the individual flotation cushion or life preserver (refer to the manufacturer's specifications and TSO-C72c).

(16) Oxygen Mask. The safety information cards should contain instructions on all cabin locations, donning, and means for adjusting oxygen masks; any further actions needed to start the flow of oxygen; and instructions to passengers to don their own oxygen mask before assisting children with their masks.

(17) PEDs. The safety information cards should inform passengers of permissible times, conditions, and limitations when various PEDs may be used.

(18) Seat Backs. The safety information card should provide information that seat backs must be placed in the full upright position before takeoff and landing.

(19) Supplemental Information. The safety information cards may contain supplemental instructions. For example, for movement on the surface, takeoff, and landing, carry-on baggage and tray tables must be properly stowed, and galley service items must be collected from passengers and stowed (refer to §§ 121.589(c) and 121.577(b)).

(20) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the safety information cards should depict liferaft and slide/raft stowage, launching, and securing locations. When life lines are installed the safety information card should depict how to access the life line and where to attach it to the wing. The safety information cards also must contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft. Operators shall avoid confusion by not combining overwater and non-overwater equipment on the same safety information briefing card.

APPENDIX 3. PART 135 OPERATIONS WITH AND WITHOUT FLIGHT ATTENDANTS

This Appendix discusses the oral briefing and passenger information cards used in 14 CFR part 135 operations.[1]

1. CREWMEMBER PROCEDURES. Passenger briefings are delivered orally or through video presentations. Each oral briefing provided by a carrier or commercial operator for its passengers must be explained and described in appropriate manuals. The manuals should also contain a description of crewmember tasks and coordination procedures to ensure passenger compliance with information signs and crewmember's safety instructions. This description should include the stipulation that crewmembers should notify the pilot in command (PIC**)** anytime a passenger refuses to comply with safety instructions. Crewmembers should neither be assigned nor perform non-safety-related duties during the safety information briefings if those duties could obstruct the view of the passengers or distract them from active listening.

2. ORAL BRIEFINGS. The pretakeoff oral safety information briefing should be given so that each passenger can clearly hear it. Crewmembers giving these briefings should speak slowly and distinctly.[2] The pretakeoff oral safety briefing may be given by prerecorded audiotape or videotape means. These methods of passenger safety briefing should be considered when the aircraft is equipped with the necessary videotape and sound equipment. The advantage of a prerecorded audiotape or videotape presentation is the assurance that a complete briefing is given, that the diction is good, and that an overall high quality briefing is maintained. Prerecorded presentations also lend themselves very well to a multilingual presentation. In addition, a prerecorded presentation can include "closed captioning" for the deaf and other visual presentations, which may be more meaningful to passengers. Airlines using prerecorded presentations should have procedures to ensure that screens used during these presentations, which extend into the aisles, are properly stowed prior to movement on the surface, takeoff, or landing.[3] Screens located at passenger seats that could impede rapid passenger egress also should be stowed properly prior to movement on the surface, takeoff, or landing. In addition, operators should have alternative briefing procedures to follow if the prerecorded or WiFi presentation becomes inoperative (refer to part 135, § 135.117(f)).

> **NOTE: Pretakeoff oral, audio, video, or WiFi safety information briefings should contain only information that is essential for safety. For example, paid advertising, schedules, or promotional information is not safety-related and should not be commingled in the safety information briefing script.**

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[1] Information in this Appendix can be used to provide suggestions for 14 CFR part 125 and 135 operators.

[2] Section 135.117(d) states, the required oral briefing shall be given by the PIC, a crewmember, or other qualified person designated by the certificate holder and approved by the Administrator.

[3] A safety briefing accessed with a WiFi-enabled computer, tablet, or hand-held device must comply with 14 CFR part 121, § 121.577(d) and included in free content.

a. Pretakeoff. In accordance with § 135.117, before each takeoff, the PIC must ensure that all passengers are orally briefed on each of the following. This oral briefing shall be given by the PIC or a crewmember.

(1) Compliance With Signs and Placards. The safety information briefing must include a statement that the FAA's regulations require passenger compliance with the lighted passenger information signs (if required) and posted placards as well as crewmember instructions.

(2) Smoking. The safety information briefing must also include the ban on smoking (refer to 14 CFR part 252, § 252.3). This must include that:

(a) Smoking, including e-cigarettes, is not permitted on the ground, anytime the "No Smoking" sign (if required) is illuminated or, if applicable, when a flight has been designated as a no smoking flight (refer to § 252.1);

(b) Federal regulations require passenger compliance with the lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas, and crewmembers' instructions (refer to § 135.117(a)(1) and part 252);

(c) Smoking is prohibited in the lavatories (if installed) and other designated nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the lavatories is prohibited by Federal law (refer to § 135.117(a)(1));

(d) Passengers must comply with the instructions of the crewmembers regarding smoking or the prohibition against smoking (refer to § 135.117(a)(1)).

(3) Seatbelts (Including Seatbelts, Airbag Seatbelts, and Shoulder Harness Lap Belt Combinations). The PIC or a crewmember must brief passengers on the method of fastening, tightening, and unfastening seatbelts. The PIC or crewmember also should brief passengers that seatbelts should be worn low and tight. Passengers must also be informed that their seatbelts must be fastened anytime the "Fasten Seat Belt" sign is illuminated (if installed) and that their seatbelts should be fastened anytime they are seated. In addition, passengers must be informed that they must obey the instructions of crewmembers concerning the use of seatbelts. (Refer to § 135.117(a)(2).)

(4) Seat Backs. The PIC or a crewmember must brief passengers regarding the need to have their seat backs in an upright position before takeoff and landing.

(5) Exits. The PIC or a crewmember must brief passengers on the location and means of opening the passenger entry door and emergency exits. Crewmembers should also brief passengers on any additional information about the exits. The passengers seated nearest to an exit or door should be briefed on the operation of that door or exit. Some window exits are equipped with a life line or rope installed in the window frame. On other aircraft equipped for overwater operation, the life line is located in a small overhead stowage bin. This life line is primarily designed to stabilize passengers boarding a liferaft from the slippery surface of the aircraft wing. The National Transportation Safety Board (NTSB) has indicated, in Safety Recommendation A-10-081, that when life lines are installed on extended overwater aircraft, passengers must be briefed on the location to ensure that the life lines can be quickly and

effectively retrieved and used. This information should be included during the oral safety briefing or illustrated on the safety information card (refer to § 135.117(e)).

(6) Survival Equipment. The PIC or a crewmember must include in these briefings information about the location of survival equipment (refer to § 135.117(a)(5)).

(7) Fire Extinguisher. The PIC or a crewmember must brief passengers on the location and use of fire extinguishers (refer to § 135.117(a)(8)).

(8) Exit Seating.

(a) In its response to the NTSB Recommendation A-00-077 on exit seating, the FAA strongly encourages air carriers to require crewmembers to provide a preflight personal briefing to each passenger seated in an exit seat. That requirement would be part of the air carrier's approved Exit Seating Program, and would apply to each passenger seated in an exit seat. The preflight personal briefing should:

1. Clearly explain what each such passenger should do in the event the exit might be needed.

2. Refer each such passenger to the information included on the passenger information card.

(b) Existing regulations require that passenger briefings include a request for passengers seated in exit seats to identify themselves if they feel they cannot or do not wish to perform the exit seat functions included on the passenger information card (refer to § 135.129).

(c) An entity undergoing certification should include a requirement for crewmembers to perform preflight personal briefings in its approved Exit Seating Program. The FAA strongly recommends that each existing air carrier amend its approved Exit Seating Program by including the preflight personal briefing as an integral element (refer to § 135.129, as applicable).

(9) Passengers Needing Assistance. The PIC or a crewmember must individually brief a passenger who may need assistance in moving expeditiously to an exit if an emergency occurs as to the procedures to be followed if an evacuation occurs. If the person is accompanied by an attendant, the attendant must also be briefed. The briefing must include information about the most appropriate route to an exit and the most appropriate time to start moving toward that exit. There should also be an inquiry about the most appropriate manner of assisting the person to prevent pain and further injury. (Refer to § 135.117(b).)

(10) Floor Proximity Emergency Lighting. If an aircraft is equipped with floor proximity emergency lighting, the PIC should inform passengers that emergency lights are located on or near the floor of the aircraft.

(11) Portable Electronic Devices (PED). Except as provided in part 91, § 91.21, no part 119 certificate holder or PIC may operate or allow the operation of PEDs on any U.S.-registered aircraft operated by the certificate holder. Passengers should be informed of permissible times, conditions, and limitations when various PEDs may be used. Information for

Operators (InFO) 13010 provides operators with a method for expanding the allowances of PED use.

(12) Oxygen Equipment Including Passengers Using Oxygen Therapy.

(a) If the flight involves operations above 12,000 mean sea level (MSL), the PIC or a crewmember must brief passengers on the normal and emergency use of oxygen. These instructions should include locating, donning, and adjusting the equipment; any action which might be necessary to start the flow of oxygen; and the prohibition against smoking during oxygen use. Passengers shall also be given instructions regarding the automatic appearance of the oxygen mask in all sections of the cabin including lavatories. During the safety briefing, the passengers must be instructed to don their own oxygen masks before assisting children with their masks. The announcement must include information that oxygen mask reservoir bags may not inflate, although sufficient oxygen is flowing into the bag. On flights where smoking is permitted, passengers must be told to extinguish all cigarettes when oxygen is in use (refer to § 135.157).

(b) If a passenger requires air carrier- or passenger-supplied therapeutic oxygen, the briefing should include what to do in case of cabin decompression. The operational altitude for portable oxygen concentrators (POC) is up to 10,000 feet (3,048 m) (523 mmHg). Higher altitudes may affect oxygen canister performance; therefore, passengers using therapeutic oxygen should discontinue use of the POC and use the oxygen mask from the passenger service unit. The PIC will announce when it is safe to discontinue use of the decompression oxygen.

(13) Supplemental Information. Passengers shall be briefed regarding passenger safety information briefing cards and additional safety actions. Critical information includes the following:

(a) The location of the safety information briefing cards and the fact that they contain additional safety information, which the passengers should read.

(b) The briefing should also contain instructions regarding passenger compliance with the following pretakeoff requirements: proper stowage of each passenger’s carry-on baggage, including large PEDs; securing each passenger’s food and beverage tray in its stowed position; and stowing any food, beverage, or tableware.

(c) Passengers must be instructed to leave carry-on baggage behind during an emergency evacuation. Carry-on baggage during an emergency egress can put other passengers at risk by delaying evacuation, injuring passengers, obstructing the exit, or potentially damaging the evacuation slide (when installed).

(14) Extended Overwater Operations. If the flight involves extended overwater operations, the PIC or a crewmember must brief passengers on ditching procedures and the use of required flotation equipment. The PIC or the crewmember must brief passengers before takeoff. It should include:

(a) Exits. The PIC or a crewmember must instruct passengers on the most appropriate exits for their use. Passengers should be aware of installed life lines or ropes designed to assist passengers while on the aircraft wing surface.

(b) Flotation Equipment.

1. The PIC or a crewmember must ensure that passengers are briefed on the type, location, and use of required flotation equipment. This briefing must include the type of equipment available at the individual passenger's seat and the method of use in the water, such as putting the arms through the straps and resting the torso on the cushion. When the aircraft is equipped with life preservers, the safety information briefing must include instructions about the specific location (e.g., under or between seats, or in a side console), removal of life preservers from stowage areas, including pouches, and the donning and inflation of the life preservers. If the aircraft is equipped with both flotation cushions and life preservers, crewmembers must brief passengers on both types of equipment.

2. When the safety briefing includes more than one type of flotation cushion or life preserver, it can be confusing. The different methods of donning and/or operating the individual flotation device shall be specific to the equipment on the aircraft, depicted on the safety information briefing card, and provided in the oral briefing, video, or live demonstration (refer to § 135.117(a)(6) and (e)(3)).

(c) Individual Flotation Equipment for In-Lap Child (Under the Age of 2). Section 135.128 permits an adult occupying an approved seat to hold a child less than 2 years of age. This child is commonly referred to as an "in-lap" child. The FAA's long-standing reading of § 121.340(a) is that all cabin occupants, including in-lap children, must have an individual flotation means available for use. That reading was affirmed in 1996, when the FAA issued a legal interpretation regarding § 121.340(a). Although this legal interpretation was not directly applied to part 135 operators, appropriately-sized flotation equipment is recommended to mitigate the safety risk. When infant flotation equipment is provided, the briefing for a parent or caregiver traveling with an "in-lap" child is more effective when it is part of a special personalized briefing rather than using the public address (PA) system. Operators should not invent or create their own unique method of using a flotation device for an adult holding a lap child or infant. Operators must verify that the safety information card illustrations reflect the design specifications for the individual flotation cushion or life preserver (refer to Technical Standard Order (TSO)-C72c, Individual Flotation Devices).

(d) Liferafts and Slide/Rafts. Flight attendants (F/A) or other appropriate crewmembers must instruct passengers on liferaft and slide/raft retrieval from stowage and their presentation for use. Operators shall avoid confusion by not combining overwater and non-overwater equipment on the same safety information briefing card.

(e) Information on Cards. The PIC or crewmember should emphasize that review of the passenger information cards is important.

b. Post-Takeoff. Immediately before or after the lighted "Fasten Seat Belt" sign (if installed) is turned off, an announcement should be made that passengers should keep their

seatbelts fastened while seated even if the "Fasten Seat Belt" sign is turned off. The possibility of encountering unexpected turbulence should also be emphasized to passengers.

c. Prelanding. The minimum prelanding briefing information should include the following:

- Seatbelts must be securely fastened.
- PEDs, such as laptop computers and DVD players, should be powered down and stowed. Some carriers permit small items, such as hand-held PEDs, to be secured (refer to InFO 13010).
- Tray tables must be secured in their stowed position.
- Seat backs must be in a fully upright position; sleeper seats and lie-flat seats must be returned to the taxi, takeoff, and landing position (TTL); and seats with adjustable footrest must be retracted.
- Food, beverages, or tableware must be picked up.
- Carry-on baggage and movie/video screens must be properly stowed for landing.

d. Postlanding. Postlanding safety instructions are not required by regulation; however, they are the industry standard practice. After landing, an F/A or other appropriate crewmember should inform passengers to remain seated with seatbelts fastened until the "Fasten Seat Belt" sign has been turned off. This announcement should be accompanied by an explanation that this is for passenger safety and the safety of those seated around them. The signal to release the seatbelt, gather belongings and proceed to the exit is when the pilot turns off the "Fasten Seat Belt" sign. In addition, passengers should be reminded to use caution when opening the overhead bins; items may have shifted and could potentially injure seated passengers by falling from overhead bins. Passengers should be cautioned on the appropriate time to use cell phones in accordance with air carrier procedures. Passengers should also be reminded about prohibitions against smoking.

3. PASSENGER SAFETY INFORMATION BRIEFING CARDS. Oral briefings must be supplemented with safety information briefing cards, which must be appropriate for the type and model of aircraft on which they are to be used and consistent with the airline's procedures. The information on the safety information briefing cards should be consistent with the information contained in the air carrier's manuals. When aircraft equipment is substantially different even with the same model of aircraft, the air carrier should provide safety information briefing cards specific to that aircraft. Merely labeling the depiction of the differences with the type and model of aircraft is not sufficient. Safety information cards must also show the method of operating the emergency exits in an emergency and other instructions necessary for the use of emergency equipment.

a. Design, Location, and Layout. Consideration of the design, dimensions, layout, and location of the passenger safety information briefing card can significantly contribute to passenger safety education. The passenger safety information card must be designed and located so that the seated passenger will be able to see and have access to the safety information card when it is placed in its normal location aboard the aircraft. The passenger safety information card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for TTL will be able to visually locate and identify the safety information card. It should not be possible for the safety information card, when it is in its normal location, to slip

out of the sight of the passenger. The safety information card should have an eye-catching title or symbol identifying itself as safety or emergency instructions. The mode of presentation should be diagrammatic or pictorial, making written information, to the extent possible, unnecessary. The information on the safety information card must apply to only the type and model of aircraft on which it is used. The method used to depict equipment and actions can be pictures of people, diagrams, drawings, words, or combinations of these. The use of international symbols is encouraged. All depictions should be easy to understand and not complex. Safety information cards should also be interesting and attractive so passengers will want to read them. For example, a multicolored card that has pictures and drawings will be picked up and read more often than a black and white printed card. Information regarding exit seating should be printed on the safety information card in the languages used by the air carrier (refer to § 135.117(e)).

b. Extraneous Information. Passenger safety information briefing cards should only contain information that is essential for safety. For example, advertising, schedules, or promotional information is not safety-related and should not be on the cards.

c. Content. Safety information briefing cards that provide information to passengers must include:

(1) Passenger Compliance With Safety Information. The instructions on the safety information cards must advise passengers that they must comply with safety instructions including signs, placards, and instructions of crewmembers. The importance of complying with the “Fasten Seat Belt” sign should be emphasized.

(2) Smoking. The passenger safety information briefing cards must inform passengers that smoking, including e-cigarettes, is prohibited in the aircraft lavatory at all times.

(3) Seatbelts (Including Seatbelts, Airbag Seat Belts, and Shoulder Harness Lap Belt Combinations). The cards should have instructions for fastening, tightening, and opening seatbelts. (Refer to § 135.128.)

(4) Seat Backs. The safety information cards must instruct passengers to place the seat backs in the upright position for takeoff and landing. Instructions for the TTL setting must be provided for lie-flat, sleeper seats, and seating with footrests. (Refer to § 135.117(a)(3).)

(5) Floor Proximity Emergency Lighting. If the aircraft is equipped with floor proximity emergency lighting, then the safety information briefing cards should inform passengers that emergency lights are located on or in the vicinity of the floor of the aircraft.

(6) Exit Seating. An exit seat is a seat with direct access to an emergency exit without entering an aisle or passing around an obstruction. The passenger safety briefing must call attention to the existence of special exit seating briefing cards located at exit seats. (Certificate holders may elect to incorporate the additional information required to be included in the exit seating briefing cards into the standard safety information briefing cards required to be provided for the use of all passengers). Exit seat information on safety cards must meet the requirements of §§ 135.117(e) and 135.129(d) and (e). The exit seating briefing cards are part of the approved Exit Seating Program described or referenced in Operations Specification (OpSpec) A022.

(7) Exit Location. The safety information briefing cards must give the location of every available exit in the cabin. The safety information cards should encourage passengers to familiarize themselves with the location of exits other than the one they entered.

(8) Exit Operations. The safety information briefing cards must contain diagrams depicting the emergency opening of each exit type. Any manual operations necessary to successfully complete an evacuation, such as arming, manual inflation of the evacuation slide, location of life lines, operation of the stairs, or the placement of the hatch type exit on the seat or outside the aircraft, shall also be included. The procedures for the placement of the hatch should be consistent with the procedures in the operator's manual. Showing more than one method of opening a door could be confusing. Lessons learned from interviews with surviving passengers indicate that confusion is sometimes created by a diagram or pictograph of an exit operation on only one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this shall be explained on the safety information briefing cards. The explanation should show that handles are rotated in the direction of the arrow.

(9) Evacuation Slide/Assist Means. The safety information cards must contain instructions for passengers to use the evacuation slide or other assist means in a manner consistent with the exits on that aircraft. Evacuation instructions for slides, stairs, and window exits depicted on safety information briefing cards shall be in accordance with manufacturers' specification and type certification.

(10) Overwing Exit Use. The safety information briefing cards must contain instructions illustrating the proper method of egressing through an overwing exit. Safety information briefing cards shall also contain instructions for passengers to walk or run on any ramp that leads from an exit, and the direction and route of escape after leaving all overwing exits should be included. The procedure for placement of the window exit plug must be consistent with the procedure in the operator's manual. NTSB Safety Recommendation A-10-081, following US Airways Flight 1549 ditching on the Hudson River, states that passengers should be aware of life lines installed in the window frame. These assist devices are typically designed to assist passengers egressing through an overwing exit during a ditching or unplanned water landing. Where certification for ditching in accordance with 14 CFR part 25, § 25.801 is applicable, there must be provisions to store life lines. Accordingly, safety information briefing cards must identify life line stowage and instructions to enable the occupants to stay on the wing after ditching.

(11) Carry-On Baggage. The safety information briefing cards should inform passengers not to bring carry-on baggage to the exit in the event of an emergency. Evidence from evacuations of airplanes since 2013 has shown that significant numbers of passengers attempt to take time to retrieve carry-on baggage with them when evacuating an aircraft. Such passenger behavior can present a significant hindrance to egress, injury to other passengers, and damage to evacuation slides.

(12) Brace Position. To prepare for an accident, one action that an occupant can take to contribute to their survival is to assume an appropriate brace-for-impact position. The safety information cards shall contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, oblique-, and side-facing) and all seat spacing for that aircraft. To reduce detrimental interaction between the

occupant's arms and the seat back, the brace position for forward-facing passenger seats has been modified by placing the hands down by the lower legs instead of on the seat back. This alternate position was successful in significantly reducing head and neck injury risk for all of the seat back types evaluated in a 2015 Civil Aerospace Medical Institute (CAMI) research study. The current positions recommended in Appendix 4, Brace-for-Impact Positions, have been revised to provide an equivalent level of safety for all passenger seat back types.

(13) Location of Survival Equipment. The safety information briefing cards must provide information about the location of survival equipment. This is best done by using diagrams.

(14) Location and Use of Fire Extinguishers. The safety information briefing cards must depict the location of fire extinguishers. In addition, they must provide information regarding the use of fire extinguishers.

(15) Individual Flotation Devices.

(a) The safety information briefing cards must depict their stowage location and contain instructions concerning removal of the devices from the stowage locations, extraction from the stowage pouches or packages, manual and oral inflation backup systems, its use in the water, and the manual operation of survivor locator lights and accessories, as appropriate. The safety information briefing cards should depict the method of fitting adult life preservers on small children. If the operator supplies child flotation devices, the donning and method of inflation of these devices should be depicted on the cards.

(b) When a passenger is informed about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger's seat. In some cases, this may mean different safety information cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a different passenger safety briefing. Another method for informing passengers is to advise them during the oral safety briefing that there are different types of flotation devices on the airplane, therefore, it is important that they study the safety information card carefully and be aware of the differences in the flotation equipment. The different methods of donning and/or operating the individual flotation device must be depicted on the safety information card and given in the oral safety briefing or demonstration (refer to § 135.117). Air carriers should not invent or create their own unique method of using a flotation device with an adult and holding a lap child or infant. Operators should verify that the safety information card illustrations reflect the design specifications for the individual flotation cushion or life preserver (refer to TSO-C72c).

(16) Oxygen Mask. The safety information briefing cards must contain the following instructions:

(a) The location of oxygen masks (including lavatories where applicable);

(b) The donning of oxygen masks, including removing the protective cover or extending the pull tab to extend the mask tubing (where installed); and

(c) The method of adjusting an oxygen mask to the face.

NOTE: The safety briefing card should illustrate any design features that indicate the flow of oxygen; and instructions to passengers to don their own oxygen masks before assisting children or a passenger who may need assistance with their mask.

(17) PEDs. The safety information briefing cards should inform passengers of permissible times, conditions, and limitations when various PEDs may be used (refer to the report from the Portable Electronic Devices Aviation Rulemaking Committee (PED ARC) to the Federal Aviation Administration (FAA), Recommendations on Expanding the Use of Portable Electronic Devices During Flight).

(18) Supplemental Information. Passengers shall be briefed regarding passenger safety information briefing cards and additional safety actions. Critical information includes the following:

(a) The location of the safety information briefing cards and the fact that they contain additional safety information, which the passengers should read.

(b) The briefing should also contain instructions regarding passenger compliance with the following pretakeoff requirements: proper stowage of each passenger's carry-on baggage, including large PEDs; securing each passenger's food and beverage tray in its stowed position; and stowing any food, beverage, or tableware.

(c) Passengers must be instructed to leave carry-on baggage behind during an emergency evacuation. Carry-on baggage during an emergency egress can put other passengers at risk by delaying passenger egress, injuring passengers, obstructing the exit, or potentially damaging the evacuation slide (when installed).

(19) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the safety information briefing cards must depict liferaft and slide/raft stowage, launching, and securing locations. The safety information briefing cards also must contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft. Safety information briefing cards shall not commingle extended overwater and non-extended-overwater equipment on the same card (refer to § 135.117(a)(6) and (e)(1)).

APPENDIX 4. BRACE-FOR-IMPACT POSITIONS

1. INTRODUCTION. A brace position is designed to minimize injury to occupants in the cabin by positioning the head and extremities in a protective position. A protective position or brace position increases survivability by reducing the severity of injury during severe turbulence, rapid deceleration, or a sudden impact. Research indicates that passengers who assume a brace position prior to impact significantly reduce the likelihood and severity of injury to the head, arms, and legs. Cabin occupants that are uninjured are more likely to expeditiously evacuate the aircraft, thereby increasing survivability. An optimum brace position would be dependent on so many factors that it is impossible to describe a single position that would be best for every occupant in every case. Instead, the positions described in this advisory circular (AC) are based on general crash safety principles applicable to most occupants.

2. REASONS FOR BRACING FOR IMPACT.

a. There are two primary reasons for bracing for impact. One is to reduce flailing[1] and the other is to reduce secondary impact. Flailing can be reduced by having the occupants of forward-facing seats bend forward over their legs in some manner. Secondary impact can be reduced by prepositioning the body (particularly the head) against the surface it would strike during impact.

b. Today's aircraft may have seating arrangements that result in very small seat pitches (the space between seats) known as high-density seating, or a combination of small and large seat pitch spacing (i.e., an aircraft with a first-class/coach seating arrangement), where large seat pitch spacing is known as low-density seating.

3. PASSENGER POSITIONS. In all brace-for-impact positions, passengers should wear their seatbelts as tightly and as low on the torso as possible.

a. Forward-Facing Passenger Seat With Lap Belt.

(1) If there is sufficient room, passengers should bend over forward as far as possible with their heads face down, place their feet back as far as possible, and wrap their arms under their legs behind their knees, as shown in Figure 1, Forward-Facing Seat With Lap Belt.

(2) If there is not enough room to bend over completely, then passengers should place their head against the surfaces in front of them, their feet as far back as possible, and grasp their lower legs, as shown in Figure 2, Forward-Facing Seat (High-Density Seating).

b. Forward-Facing Passenger Seats With a Shoulder Belt. Several air carriers have installed oblique seats (over an 18-degree angle and up to a 28-degree angle from the aircraft centerline) in their premium class cabins. Passengers should sit upright, place their chins on their sternums, their hands in their laps, and their feet flat on the floor with their knees bent at about 90 degrees, as shown in Figure 3, Forward-Facing Jump Seat.

[1] Flailing is defined as limbs that wave or swing or cause to wave or swing wildly.

c. Aft-Facing Passenger Seat With a Lap Belt or Shoulder Belt. Passengers should sit upright, place their heads against the headrests, their hands in their laps, and their feet flat on the floor with their knees bent at about 90 degrees, as shown in Figure 4, Aft-Facing Jump Seat.

d. Pillows and Blankets. Passengers should not use pillows or blankets between their bodies and the objects against which they are bracing (either a seat back, a bulkhead, or their own body). Pillows and blankets provide little, if any, energy absorption and increase the possibility of secondary impact injury. Also, pillows and blankets could create additional clutter in the aisles which could be a detriment in an emergency evacuation. Refer to National Transportation Safety Board (NTSB) Safety Recommendations A-79-076, A-79-077, and A-79-078.

e. Children. A child who occupies an approved child restraint system (CRS) should be braced in accordance with its manufacturer's instructions. Children in passenger seats should utilize the same brace-for-impact positions as adults. Adults holding infants should provide as uniform support as possible to the infant's head, neck, and body, and lean over the infant to minimize the possibility of injury due to flailing.

f. Pregnant or Handicapped Passengers. Pregnant or handicapped passengers may need the assistance of another person in taking a brace-for-impact position but should, in general, attempt to take the same brace position as the other passengers. If aft-facing passenger seats are available, these passengers may benefit from being located in those seats.

4. FLIGHT ATTENDANT (F/A) POSITIONS. The brace-for-impact positions for F/As will depend on the direction their jump seats face and type of restraint systems with which those seats are equipped. In all brace-for-impact positions, F/As should wear their seatbelts as tightly and as low on the torso as possible.

a. Forward-Facing F/A Jump Seats.

(1) For seats with an inertial reel-type shoulder harness, the F/As should sit upright, place their chins on their sternums, their hands in their laps, and their feet flat on the floor with their knees bent at about 90 degrees, as shown in Figure 3.

(2) For seats with a manually adjustable shoulder harness, the F/As should tighten their lap and shoulder harnesses as tight as possible, lean against them, place their chins on their sternums, their hands in their laps, and their feet flat on the floor with their knees bent at about 90 degrees, as shown in Figure 3.

b. Aft-Facing F/A Jump Seats. The F/As should sit upright, place their heads against the headrests, their hands in their laps, and their feet flat on the floor with their knees bent at about 90 degrees, as shown in Figure 4.

5. OTHER SITUATIONS.

a. Helicopter Passenger and F/A Seats. Helicopter passengers and F/As should adopt the same positions as recommended for aircraft seats of similar orientations and restraint system

configuration; however, if possible, the occupants of all seat types should grip the edge of the seat pan, to help maintain orientation in the event of a rollover.

b. Briefing Passengers on Brace-for-Impact Positions During Planned and Unplanned Emergency Landings. When preparing the cabin for a planned emergency landing, the passengers shall be briefed on the above information. In the case of an unplanned emergency landing, the F/As may only have enough time to give a short command, such as "brace for impact," or "grab your ankles," or "heads down stay down." Post incident interviews with F/As and passengers have shown that, in an attempt to take a brace position of some sort, passengers have ended up in a position postlanding that resulted in less injury than when no attempt was made at all.

FIGURE 1. FORWARD-FACING SEAT WITH LAP BELT



FIGURE 2. FORWARD-FACING SEAT (HIGH-DENSITY SEATING)



FIGURE 3. FORWARD-FACING JUMP SEAT



NOTE: Figure 3 is applicable is applicable to forward-, side-, or oblique-facing passenger seats with shoulder harness.

FIGURE 4. AFT-FACING JUMP SEAT



NOTE: Figure 4 is applicable to aft-facing passenger seats with or without shoulder harness.

APPENDIX 5. SAFETY INFORMATION BRIEFING CARD CONTENT QUICK CHECKLIST: 14 CFR PART 121, § 121.571[1]

Passenger Safety Information Briefing Cards (General):

- ☐ Card must be aircraft specific to the type and model of aircraft.
- ☐ Depict diagram of the common method to operate emergency exits in the emergency mode.
- ☐ Instruction on use of emergency equipment used in emergency egress.

Card Design and Location:

- ☐ Visually accessible and designed so passengers can visually locate and identify the card when seated.
- ☐ Suggest a combination of good pictorial or drawing presentation combined with specific written details such as specific CFRs pertaining to exit seating and carry-on baggage.
- ☐ Cards should be interesting and attractive to passengers.

Extraneous Information:

- ☐ Cards should only contain information essential for safety (e.g., no advertisements, route maps, or promotional information).

Content of Cards: (NOTE: all the below should be consistent with current written crew procedures and training.)

- ☐ Advise passengers that they MUST comply with safety instructions including signs, placards, and instructions of the flight attendants.
- ☐ Importance of complying with the seatbelt sign MUST be emphasized.
- ☐ Instructions on fastening, tightening, and opening of seatbelts.
- ☐ Cards should inform passengers that smoking is prohibited in lavatories at any time, unless specifically informed by the crew on specific supplemental flights.
- ☐ Inform passengers about the specifics of the floor proximity emergency lighting.

[1] The safety information briefing card checklist may also assist in the development of 14 CFR part 125 or 135 safety cards with some minor modifications (refer to part 125, § 125.357 and part 135, § 135.117).

- Exiting seats are required to have Passenger Instruction Cards, but we encourage each passenger's seat to have a card accessible.
- Exit seating specific information MUST be printed on the cards and in the languages in which the oral briefings and commands are given by the crew.
- Criteria and information on function of exits by passengers MUST be listed on the cards.
- Cards MUST contain a request in the language used by the aircraft operator that a passenger identify himself or herself to allow for reseating if they cannot meet the selection criteria needed to operate an emergency exit.
- Cards must state that if the passenger has a non-discernible condition that will prevent them from performing the functions listed above, and if they may suffer bodily harm as the result of performing one or more of those functions, or if they do not wish to perform those functions, they can be reseated.
- Cards MUST give the location of every available exit in the cabin.
- Cards should encourage passengers to familiarize themselves with the location of the exits other than the one from which they entered the aircraft.
- Cards MUST contain diagrams depicting the emergency opening of each exit type.
- Any manual exit operations necessary to complete an evacuation (e.g., manual inflation of the evacuation slides, or operation of the stairs, or recommended placement of the overwing exit hatch).
- Cards should depict all emergency door handle types' direction arrow placard rotation.
- Cards MUST contain instructions to passengers on how to exit the aircraft.
- Cards MUST contain instructions to passengers on how to use the emergency slide or other means consistent with the exits on the aircraft type.
- Cards MUST contain instructions illustrating the proper methods of egressing through the overwing exit.
- Cards should contain instructions for passengers to walk or run on any ramp that leads from an exit. This should include placement of the window exit hatch/plug.
- Cards should inform passengers not to bring carry-on baggage to the exits.
- Cards should contain passenger protective brace positions to include, children, in all seat orientations whether forward- or aft-facing.
- Cards MUST depict individual flotation equipment: location, stowage, and instructions for removal from packaging. When the aircraft is equipped with seat cushion the card must provide instructions for removal of and use of straps. When infant/child life vests are provided the card must depict the location and instructions for donning the vest.

- Cards should depict manual and oral inflation backup system use in water.
- Cards should depict operation of survivor locator lights and other accessories, such as life vest whistles as an example.
- It is suggested that if the air operator supplies child flotation devices, the cards should depict the method of donning and inflation.
- Cards should contain instructions on: the oxygen mask location (including lavatories), donning, and means for adjusting the oxygen mask; starting the flow of the oxygen; and donning his or her own mask before assisting children with their masks.
- Cards should inform passengers of permissible times, conditions, and limitations for use of portable electronic devices (PED).
- Cards MUST contain supplemental information, such as instructions for stowage of carry-on baggage specific to takeoff and landing.
- Cards MUST address tray table, galley service items stowage, and that all passenger seats MUST be placed in their fully upright position for aircraft ground movement, takeoff, and landing.
- When liferafts are required the cards should depict liferaft and slide/raft stowage, launching, and securing locations.
- Cards should contain instructions regarding slide/raft instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft.
- Title 14 CFR requires passenger compliance with lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas (including e-cigarettes), and crewmember instructions with regard to these items.
- Title 14 CFR requires passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of seatbelts.
- Location of survival equipment.
- Location of fire extinguishers (14 CFR part 135, § 135.117).
- Cards must state[2] “Final assembly of this airplane was completed in [INSERT NAME OF COUNTRY].”

[2] Part 121, § 121.571 and § 135.117 state, “No later than June 12, 2005, for Domestic and Flag scheduled passenger-carrying flights, the sentence, ‘Final assembly of this airplane was completed in [INSERT NAME OF COUNTRY].’”

APPENDIX 6. SAMPLE POSTFLIGHT PASSENGER SAFETY BRIEFING COMPREHENSION SURVEY FOR AIR CARRIER DATA ANALYSIS

Survey to determine passenger comprehension of required safety information.

1. The safety information video/live briefing increases passenger awareness of emergency procedures and safety features.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

2. The safety briefing format increases passenger awareness of nearest exit and alternate exit.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

3. The safety briefing format clearly explains the operation of the seatbelt.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

4. The safety briefing explains the importance of seatbelt compliance, when the seatbelt sign is illuminated, to prevent turbulence injuries.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

5. The safety briefing explains the location and operation of supplemental oxygen masks.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

6. The safety briefing card contains information pertinent to only the (insert aircraft make/model) aircraft.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

7. Passengers are encouraged to locate and read the safety information card.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

8. The safety information card describes the selection criteria for exit seating.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

9. The safety information card describes the functions required for exit seating.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

10. The safety briefing states that Federal regulations require passenger compliance with lighted passenger information signs and crewmember instructions.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

11. The safety information card has pictorial symbols to heighten awareness of the hazards of removing carry-on baggage during an emergency egress.

    A. Strongly Agree
    B. Agree
    C. Neither Agree nor Disagree
    D. Disagree
    E. Strongly Disagree

Advisory Circular Feedback Form

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by contacting the Air Transportation Division (AFS-200) at 9-AWA-AVS-AFS-200-Air-Transportation-Division@faa.gov or the Flight Standards Directives Management Officer at 9-AWA-AFS-140-Directives@faa.gov.

Subject: AC 121-24D, Passenger Safety Information Briefing and Briefing Cards

Date: _____

Please check all appropriate line items:

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:

_____

_____

☐ In a future change to this AC, please cover the following subject:
(Briefly describe what you want added.)

_____

_____

☐ Other comments:

_____

_____

☐ I would like to discuss the above. Please contact me.

Submitted by: _____ Date: _____