U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject:	**PASSENGER SAFETY INFORMATION BRIEFING AND BRIEFING CARDS**	**Date: 7/23/03** **Initiated by: AFS-200**	**AC No: 121-24C** **Change:**

1. PURPOSE. This advisory circular (AC) updates information regarding the items that are required to be, or should be, covered in oral passenger briefings and on passenger briefing cards. This AC provides specific information about air carrier operations conducted under parts 121 and 135 of Title 14 of the Code of Federal Regulations (14 CFR parts 121 and 135). Information about operations conducted under part 121 where flight attendants are present is contained in Appendix 1. Information regarding part 121 operations in which there are no flight attendants present is contained in Appendix 2. Information about operations conducted under part 135 is in Appendix 3. The AC also provides suggestions about making this information interesting and meaningful. In addition, Appendix 4 provides information regarding brace-for-impact positions.

2. CANCELLATION. Advisory Circular 121-24B, Passenger Safety Information Briefing and Briefing Cards, dated February 1, 1999, is canceled.

3. RELATED READING MATERIAL. 14 CFR parts 91, 121, 135, and 252, §§ 91.21, 121.311, 121.317, 121.333, 121.571, 121.573, 121.577, 121.585, 121.586, 121.589, 135.21, 135.23, 135.87, 135.117, 135.122, 135.127, 135.128, 135.129, 252.15; and AC 91.21-1, Use of Portable Electronic Devices Aboard Aircraft.

4. 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 Federal Aviation Administration (FAA) requires a passenger information system for U.S. air carriers and commercial operators that includes both oral briefings and briefing cards. Every airline passenger should be motivated to focus on the safety information in the passenger 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 cards as interesting and attractive as possible.

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

This AC encourages individual operators to be innovative in their approach in imparting such information. For specific requirements, please refer to the applicable appendix.

/s/ John M. Allen, for
James J. Ballough
Director, Flight Standards Service

APPENDIX 1. PART 121 OPERATIONS WITH FLIGHT ATTENDANTS

This Appendix discusses the passenger briefing and information cards for operations conducted under part 121 where flight attendants are present.

1. ORAL BRIEFINGS. The pretakeoff oral briefing should be given so that each passenger can clearly hear it and easily see required demonstrations. Flight attendants giving these briefings should speak slowly and distinctly. When there is only one flight attendant, the flight attendant should be located so that passengers can see the required oxygen demonstration and, if applicable to the flight, demonstrations of equipment and procedures to be used in an emergency situation during extended overwater operations. When more than one flight attendant gives the briefings and demonstrations, the flight attendants should be evenly distributed throughout the passenger cabin. For example, when there are only two flight attendants, one flight attendant should give the briefing by using the aft public address system (if one is available) while the other flight attendant gives the demonstration at the front of the aircraft. This will ensure that passengers see the demonstration. Flight attendants giving the demonstrations should coordinate them with the applicable information given in the oral briefing, be animated, and make eye contact with as many passengers as possible. The pretakeoff oral briefing may be given by audiotape or videotape means. This method of passenger briefing should be considered when the aircraft is equipped with the necessary videotape and sound equipment. The advantage of audiotape or videotape presentations is the assurance that a complete briefing is given, that the diction is good, and that an overall high quality briefing is maintained. Tape presentations also lend themselves very well to a multilingual presentation. In addition, a videotape presentation can include "signing" for the deaf and other visual presentations, which may be more meaningful to passengers. In accordance with § 121.577(d), airlines using videotape presentations must have procedures to ensure that screens used during these presentations that extend into the aisles 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. When a videotape briefing is used, flight attendants should be evenly distributed, close to their assigned flight attendant seats. In addition, operators should have alternative briefing procedures to follow if the videotape or audiotape presentation becomes inoperative.

a. Pretakeoff. Before each takeoff, the operator must ensure that all passengers are orally briefed on each of the following:

(1) Compliance with Signs and Placards. The 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.

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

APPENDIX 1. PART 121 OPERATIONS WITH FLIGHT ATTENDANTS (continued)

[1] Where reference is made to a regulatory requirement, this Advisory Circular uses "must" or "shall." Where reference is made to guidelines that are not regulatory requirements, this Advisory Circular uses "should" or "may."

(a) That smoking is not permitted on the ground, anytime the "smoking" sign is illuminated or, if applicable, when a flight has been designated as a no smoking flight (see § 252.11);

(b) That Federal regulations require passenger compliance with the lighted passenger information signs, posted placards, areas designated for safety purposes as no smoking areas, and flight attendants' instructions (see § 121.571(a)(1)(i));

(c) That smoking is prohibited in the lavatories and other designated nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the lavatories is prohibited by Federal law (see § 121.571(a)(1)(i));

(d) During flights where smoking is permitted, an announcement must be made stating that the smoking of cigars and pipes is not permitted (see § 252.15); and

(e) That the instructions of flight attendants or other appropriate crewmembers regarding smoking and prohibitions against smoking must be followed.

(3) Seatbelts. Flight attendants or other appropriate crewmembers must brief passengers on the method of fastening, tightening, and unfastening seatbelts. They 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 "seatbelt" sign is illuminated and should be fastened anytime they are seated. In addition, passengers must be informed that they must obey the instructions of the flight attendants regarding the "fasten seatbelt" signs. (See §§ 121.317(f) and (k).)

(4) Exits. Flight attendants 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.

(5) Flotation Equipment. Flight attendants 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 briefing must include instructions about the location and 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, flight attendants should brief passengers on both types of equipment and must brief passengers on the required flotation equipment.

(6) Exit Seating.

(a) In response to the National Transportation Safety Board (NTSB) recommendation on exit seating (A-00-77), 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

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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 (section 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.

(7) Passengers Needing Assistance. Flight attendants or other appropriate crewmembers must individually brief a passenger who may need assistance in moving expeditiously to an exit. 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 must also be an inquiry about the most appropriate manner of assisting the person to prevent pain and further injury. (See § 121.571(a)(3).)

(8) Floor Proximity Emergency Lighting. Flight attendants should inform passengers that emergency lights are located on or near the floor of the aircraft.

(9) Portable Electronic Devices. Except as provided in § 91.21, no part 119 certificate holder or pilot in command may operate or allow the operation of portable electronic devices on any U.S.-registered aircraft operated by the certificate holder. Passengers should be informed of permissible times, conditions, and limitations when various portable electronic devices may be used.

(10) Oxygen Equipment. Before reaching 25,000 feet, flight attendants or other appropriate crewmembers must demonstrate the use of oxygen equipment including 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 should also be given instructions regarding the automatic appearance of the oxygen mask. In addition, passengers should be advised to don their own oxygen masks before assisting children with their masks. The announcement should include the information that oxygen mask reservoir bags may not inflate, although sufficient oxygen is flowing into the bag. On smoking flights, passengers should be told to extinguish all cigarettes when the oxygen masks drop.

APPENDIX 1. PART 121 OPERATIONS WITH FLIGHT ATTENDANTS (continued)

(11) Supplemental Information. Passengers should be briefed regarding passenger briefing cards and additional safety actions. Passengers should be told the following:

(a) The location of the 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; positioning of each passenger's seat back to the upright position; securing each passenger's food and beverage tray in its stowed position; and stowing of any food, beverage, or tableware.

(12) Extended Overwater Operations. If the flight involves extended overwater operations, flight attendants 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 over water. It should include:

(a) Exits. Flight attendants or other appropriate crewmembers should instruct passengers on the most appropriate exits for their use.

(b) Life Preservers. Flight attendants or other appropriate crewmembers must point out the stowage locations of life preservers and demonstrate their removal from stowage, 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 only on the characteristics of the life preserver located at the individual passenger's seat. It is suggested that flight attendants individually brief parents or guardians accompanying small children on the use of life preservers as it applies to these children.

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

(d) Information on Cards. Flight attendants should emphasize that review of the passenger information cards is important.

b. Posttakeoff.

(1) Seatbelts. Immediately before or after the "seatbelt" sign is turned off, an announcement must be made that passengers should keep their seatbelts fastened while seated even if the "seatbelt" sign is turned off. The possibility of encountering unexpected turbulence should be emphasized to passengers.

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(2) Information Signs. Flight attendants or other appropriate crewmembers should remind passengers to be seated anytime the "seatbelt" 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; smoking materials must be extinguished; tray tables must be secured in their stowed position; seat backs must be in a fully upright position; food, beverages, or tableware must be picked up; and carry-on baggage and movie/video screens must be properly stowed for landing.

d. Postlanding. A postlanding briefing is recommended. A flight attendant or other appropriate crewmember should advise passengers to remain seated with seatbelts fastened until the "seatbelt" sign has been turned off. This announcement should be accompanied by an explanation that this is for their own safety and the safety of those seated around them. Passengers should also be reminded concerning prohibitions against smoking. In addition, they should be reminded to use caution when opening the overhead bins.

e. Crewmember Procedures. 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 flight attendant tasks and coordination procedures to ensure passenger compliance with information signs and flight attendants' safety instructions. This description should include the stipulation that flight attendants should notify the pilot in command anytime a passenger is not complying with safety instructions. Flight attendants should neither be assigned nor perform nonsafety-related duties during the safety briefings if those duties could obstruct the view of the passengers or distract them from listening.

2. PASSENGER SAFETY BRIEFING CARDS. Oral briefings must be supplemented with briefing cards, which must be pertinent only to that type and model of aircraft and consistent with the airline's procedures. The information on the 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 information cards specific to that aircraft. Merely labeling exits or other equipment with the type and model of aircraft is not sufficient. Cards must show the most common method used to operate the emergency exits in an emergency. They must also show other instructions necessary for the use of emergency equipment.

a. Design and Location. The passenger safety briefing card must be designed and located so that the seated passenger will be able to see and have access to the card when it is placed in its normal location aboard the aircraft. The passenger briefing card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for taxi, takeoff, and landing will be able to visually locate and identify the card. It should not be possible for the

card,

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when it is in its normal location, to slip out of the sight of the passenger. The 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 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. Cards should also be interesting and attractive so passengers will want to read them. For example, a multicolored card which has pictures and drawings will be picked up and read more often than a black and white printed card.

b. Extraneous Information. Passenger safety briefing cards should contain only 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 briefing cards that provide information to passengers should include:

(1) Passenger Compliance with Safety Information. The instructions on the cards should advise passengers that they must comply with safety instructions including signs, placards, and instructions of flight attendants. The importance of complying with the "seatbelt" sign should be emphasized.

(2) Smoking. The cards should inform passengers that smoking is prohibited in the lavatories or other designated nonsmoking areas, during takeoff and landing, anytime the "no smoking" sign is illuminated, or when in the immediate vicinity of passengers using oxygen.

(3) Seatbelts. The cards should have instructions for fastening, tightening, and opening seatbelts.

(4) 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.

(5) Exit Seating. The following information may be on separate cards located at the exit seat or it may be on each passenger information card. The important part of the requirement is that the information must be available at the exit seat. The information regarding exit seating must be printed on the card in the languages in which briefings and oral commands are given by the crew. Information on the criteria and functions applicable to a passenger occupying an exit seat must be listed on the card. In addition, the passenger information card must contain a request in the language used by the operator that a passenger identify himself or herself to allow reseating if he or she cannot meet the selection criteria; has a nondiscernible condition that will prevent him or her from performing the functions listed above; may suffer bodily harm as the result of performing one or more of those functions; or does not wish to perform those functions.

For additional information on this subject, please refer to § 121.585.

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

(7) Exit Operations. The cards must contain diagrams depicting the emergency opening of each exit type. Any manual operations necessary to successfully complete an evacuation, such as manual inflation of the evacuation slide, operation of the stairs, or the recommended placement of the hatch on the seat or outside the aircraft should also be included. The procedures for the placement of the hatch should be consistent with the procedures used during the aircraft evacuation demonstration conducted for that aircraft certification. Showing more than one method of opening a door could be confusing. Past experience has indicated that confusion is sometimes created by a diagram or picture that demonstrates operation of an exit peculiar to only one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this could be explained on the cards. The cards could show that the handles need to be rotated in the direction of the arrow.

(8) Evacuation Slide/Assist Means. The 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.

(9) Overwing Exit Use. The cards must contain instructions illustrating the proper method of egressing through an overwing exit. The cards should 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 all overwing exits should also be included. The procedure for placement of the window exit plug should be consistent with the procedure used during the operator's evacuation demonstration for that aircraft's operating certificate.

(10) Carry-On Baggage. The cards should inform passengers that in an emergency situation, they should not bring carry-on baggage to the exit.

(11) Brace Position. The cards should contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, and side-facing) and all seat spacing for that aircraft. Information about these brace positions is contained in Appendix 4.

(12) Individual Flotation Equipment. 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. It is suggested that if the airline supplies child flotation devices, the donning and method of inflation of these devices be depicted on the cards.

APPENDIX 1. PART 121 OPERATIONS WITH FLIGHT ATTENDANTS (continued)

(13) Oxygen Mask. The cards should contain instructions on the location, 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.

(14) Portable Electronic Devices. The cards should inform passengers of permissible times, conditions, and limitations when various portable electronic devices may be used.

(15) Supplemental Information. The 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.

(16) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the cards should depict liferaft and slide/raft stowage, launching, and securing locations. The cards also should contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft.

APPENDIX 2. PART 121 OPERATIONS WITHOUT FLIGHT ATTENDANTS

This Appendix discusses briefing and passenger information cards for operations conducted under part 121 where flight attendants are not used.

1. ORAL BRIEFINGS. The pretakeoff oral briefing should be given 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. This method of passenger briefing should be considered when the aircraft is equipped with the necessary videotape and sound equipment. The advantage of audiotape and videotape presentations is the assurance that a complete briefing is given, that the diction is good, and that an overall high quality briefing is maintained. Tape presentations also lend themselves very well to a multilingual presentation. In addition, a videotape presentation can include "signing" for the deaf and other visual presentations, which may be more meaningful to passengers. In accordance with § 121.577(d), airlines using videotape presentations must have procedures to ensure that screens used during these presentations that extend into the aisles 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 briefing procedures to follow if the videotape or audiotape presentation becomes inoperative.

a. Pretakeoff. Before each takeoff, the operator must ensure that all passengers are orally briefed on each of the following:

(1) Compliance with Signs and Placards. The briefing must include a statement that the FAA's regulations require passenger compliance with the lighted passenger information signs (if installed) and posted placards.

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

(a) That smoking is not permitted on the ground, anytime the "smoking" sign is illuminated or, if applicable, when a flight has been designated as a no smoking flight (see § 252.11);

(b) That 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 (see § 121.571(a)(1)(i));

(c) That smoking is prohibited in the lavatories (if installed) and other designated nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the

[1] See footnote 1 in Appendix 1.

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lavatories are prohibited by Federal law (see § 121.571(a)(1)(i));

(d) That on flights where smoking is permitted, an announcement must be made stating that the smoking of cigars and pipes is not permitted (see § 252.15); and

(e) That the instructions of crewmembers regarding smoking and prohibitions against smoking, must be followed.

(3) Seatbelts. 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 "seatbelt" sign is illuminated (if installed) and should 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. (See §§ 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 should be individually briefed on the operation of that door or exit.

(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. (See § 121.571(a)(1)(v)(D).)

(8) Flotation Equipment. 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 briefing must include instructions about the location and 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.

(9) Exit Seating.

(a) In response to the National Transportation Safety Board (NTSB) recommendation on exit seating (A-00-77), the FAA strongly encourages air carriers to require crewmembers to

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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 (section 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.

(10) Passengers Needing Assistance. Crewmembers must individually brief a passenger who may need assistance in moving expeditiously to an exit. 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 must also be an inquiry about the most appropriate manner of assisting the person to prevent pain and further injury. (See § 121.571(a)(3).)

(11) Floor Proximity Emergency Lighting. Crewmembers should inform passengers that emergency lights are located on or near the floor of the aircraft (when floor proximity emergency lighting is installed).

(12) Portable Electronic Devices. Except as provided in § 91.21, no part 119 certificate holder or pilot in command may operate or allow the operation of portable electronic devices on any U.S.-registered aircraft operated by the certificate holder. Passengers should be informed of permissible times, conditions, and limitations when various portable electronic devices may be used.

(13) Oxygen Equipment. In accordance with § 121.571(a)(1)(v)(C), if the flight involves operations above 12,000 MSL, crewmembers 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. In addition, passengers should be advised to don their own oxygen masks before assisting children with their masks. The announcement should include the information that oxygen mask reservoir bags may not inflate, although sufficient oxygen is flowing into the bag. On smoking flights, passengers should be told to extinguish all cigarettes when the oxygen masks drop.

APPENDIX 2. PART 121 OPERATIONS WITHOUT FLIGHT ATTENDANTS (continued)

(14) Supplemental Information. Passengers should be briefed regarding passenger briefing cards and additional safety actions. Passengers should be told the following:

(a) The location of the 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; securing each passenger's food and beverage tray in its stowed position; and collecting any food, beverage, or tableware.

(15) 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 over water. It should include:

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

(b) Life Preservers. Crewmembers must point out the stowage locations of life preservers and demonstrate their removal from stowage, 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 only on the characteristics of the life preserver located at that passenger's seat. It is suggested that crewmembers individually brief parents or guardians accompanying small children on the use of life preservers as it applies to these children.

(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 Cards. Crewmembers should emphasize that review of the passenger information cards is important.

b. Posttakeoff. If a "seatbelt" sign is installed, then immediately before or after the "seatbelt" sign is turned off, an announcement must be made that passengers should keep their seatbelts fastened while seated even if the "seatbelt" sign is turned off. If there is no "seatbelt" 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.

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

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seatbelts must be securely fastened; smoking materials must be extinguished; tray tables (if the aircraft is so equipped) must be secured in their stowed position; seat backs must be in a fully upright position; food, beverages, or tableware must be picked up; and carry-on baggage and movie/video screens must be properly stowed for landing.

d. Postlanding. A postlanding briefing is recommended. Crewmembers should advise passengers to remain seated with seatbelts fastened until the "seatbelt" sign has been turned off. This announcement should be accompanied by an explanation that this is for their own safety and the safety of those seated around them. Passengers should also be reminded concerning prohibitions against smoking. In addition, they should be reminded to use caution when opening carry-on baggage stowage area doors, including overhead bins.

e. Crewmember Procedures. Each oral briefing provided by a carrier 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 crewmembers' safety instructions.

2. PASSENGER SAFETY BRIEFING CARDS. Oral briefings must be supplemented with briefing cards, which must be pertinent only to that type and model of aircraft and consistent with the airline's procedures. The information on the 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 information cards specific to that aircraft. Merely labeling the equipment depictions with the type and model of aircraft is not sufficient. Cards must also show the most common method used to operate the emergency exits in an emergency and other instructions necessary for the use of emergency equipment.

a. Design and Location. The passenger safety briefing card must be designed and located so that the seated passenger will be able to see and have access to the card when it is placed in its normal location aboard the aircraft. The passenger briefing card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for taxi, takeoff, and landing will be able to visually locate and identify the card. It should not be possible for the card, when it is in its normal location, to slip out of the sight of the passenger. The 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 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. 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 card in the languages used by the air carrier.

APPENDIX 2. PART 121 OPERATIONS WITHOUT FLIGHT ATTENDANTS (continued)

b. Extraneous Information. Passenger safety briefing cards should contain only 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 briefing cards that provide information to passengers should include:

(1) Passenger Compliance with Safety Information. The instructions on the cards should advise passengers that they must comply with safety instructions including signs, placards, and instructions of crewmembers. The importance of complying with the "seatbelt" sign should be emphasized.

(2) Smoking. The cards should inform passengers that smoking is prohibited in the lavatories or other designated nonsmoking areas, during takeoff and landing, anytime the "no smoking" sign is illuminated, or in the immediate vicinity of passengers using oxygen.

(3) Seatbelts. The cards should have instructions for fastening, tightening, and opening seatbelts.

(4) Seat Backs. The cards should provide instructions to passengers that their seat backs should be in the upright position for takeoff and landing.

(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. The following information may be on separate cards located at the exit seat or it may be on each passenger information card. The important part of the requirement is that the information must be available at the exit seat. Information regarding exit seating must be printed on the card in the languages in which briefings and oral commands are given by the crew. Information on the criteria and functions applicable to a passenger occupying an exit seat must be listed on the card. In addition, the passenger information card must contain a request in the primary language in which emergency commands are given that a passenger identify himself or herself to allow reseating if he or she cannot meet the selection criteria; has a nondiscernible condition that will prevent him or her from performing the functions listed above; may suffer bodily harm as the result of performing one or more of those functions; or does not wish to perform those functions. For additional information on this subject, please refer to § 121.585.

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

(8) Exit Operations. The cards must contain diagrams depicting the emergency opening

APPENDIX 2. PART 121 OPERATIONS WITHOUT FLIGHT ATTENDANTS (continued)

of each exit type. Any manual operations necessary to successfully complete an evacuation, such as manual inflation of the evacuation slide, operation of the stairs, or the recommended placement of the hatch on the seat or outside the aircraft should also be included. The procedures for the placement of the hatch should be consistent with the procedures used during the aircraft evacuation demonstration conducted for that aircraft certification. Showing more than one method of opening a door could be confusing. Past experience has indicated that confusion is sometimes created by a diagram or picture that demonstrates operation of an exit peculiar to only one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this could be explained on the cards. The cards could show that the handles need to be rotated in the direction of the arrow.

(9) Evacuation Slide/Assist Means. The 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.

(10) Overwing Exit Use. The cards must contain instructions illustrating the proper method of egressing through an overwing exit. The cards should 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 all overwing exits should also be included. The procedure for placement of the window exit plug should be consistent with the procedure used during the operator's evacuation demonstration for that aircraft's operating certificate.

(11) Carry-On Baggage. The cards should inform passengers that in the event of an emergency, they should not bring carry-on baggage to the exit.

(12) Brace Position. The cards should contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, and side-facing) and all seat spacing for that aircraft. Information about these brace positions is contained in Appendix 4 of this AC.

(13) Location of Survival Equipment. The 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 cards must depict the location of fire extinguishers. In addition, they must provide information regarding the use of fire extinguishers.

(15) Individual Flotation Devices. 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. It is suggested that if the airline supplies child flotation devices, the donning and method of inflation of these devices be depicted on the cards.

(16) Oxygen Mask. The cards should contain instructions on the location, 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) Portable Electronic Devices. The cards should inform passengers of permissible times, conditions, and limitations when various portable electronic devices may be used.

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

(19) Supplemental Information. The 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.

(20) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the cards should depict liferaft and slide/raft stowage, launching, and securing locations. The cards also should contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft.

APPENDIX 3. PART 135 OPERATIONS

This Appendix discusses the oral briefing and passenger information cards used in operations conducted under part 135.

1. ORAL BRIEFINGS. The pretakeoff oral briefing should be given 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. This method of passenger briefing should be considered when the aircraft is equipped with the necessary videotape and sound equipment. The advantage of an 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. Tape presentations also lend themselves very well to a multilingual presentation. In addition, a videotape presentation can include "signing" for the deaf and other visual presentations, which may be more meaningful to passengers. Airlines using videotape 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.[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 briefing procedures to follow if the videotape or audiotape presentation becomes inoperative.

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

(1) Compliance with Signs and Placards. The 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 briefing must also include when, where, and under what conditions smoking is prohibited. This must include:

(a) That smoking is not permitted on the ground, anytime the "smoking" sign (if required) is illuminated or, if applicable, when a flight has been designated as a no smoking flight (see § 252.11);

(b) That 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 (see § 135.117(a)(1));

(c) That smoking is prohibited in the lavatories (if installed) and other designated

[1] See footnote 1 in Appendix 1.

APPENDIX 3. PART 135 OPERATIONS (continued)

nonsmoking areas and that tampering with, destroying, or disabling smoke detectors in the lavatories are prohibited by Federal law (see § 135.117(a)(1));

(d) During flights where smoking is permitted, that the smoking of cigars and pipes is not permitted (see § 252.15); and

(e) That passengers must comply with the instructions of the crewmembers regarding smoking or the prohibition against smoking (see § 135.117(a)(1)).

(3) Seatbelts. The pilot in command or a crewmember must brief passengers on the method of fastening, tightening, and unfastening seatbelts. The pilot in command 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 "seatbelt" 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. (See § 135.117(a)(2).)

(4) Seat Backs. The pilot in command 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 pilot in command 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 as clearly as possible 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.

(6) Survival Equipment. The pilot in command or a crewmember must include in these briefings information about the location of survival equipment.

(7) Fire Extinguisher. The pilot in command or a crewmember must brief passengers on the location and use of fire extinguishers.

(8) Exit Seating.

(a) In response to the National Transportation Safety Board (NTSB) recommendation on exit seating (A-00-77), 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.

APPENDIX 3. PART 135 OPERATIONS (continued)

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

(b) Existing regulations (section 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.

(9) Passengers Needing Assistance. The pilot in command 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. (See § 135.117(b).)

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

(11) Portable Electronic Devices. Except as provided in § 91.21, no part 119 certificate holder or pilot in command may operate or allow the operation of portable electronic devices on any U.S.-registered aircraft operated by the certificate holder**.** Passengers should be informed of permissible times, conditions, and limitations when various portable electronic devices may be used.

(12) Oxygen Equipment. If the flight involves operations above 12,000 MSL, the pilot in command 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. In addition, passengers should also be advised to don their own oxygen masks before assisting children with their masks. The announcement should include the information that oxygen mask reservoir bags may not inflate although sufficient oxygen is flowing into the bag. On smoking flights, passengers should be told to extinguish all cigarettes when the oxygen masks drop.

(13) Supplemental Information. The oral briefing must be supplemented by printed cards, which must be carried in the aircraft in locations convenient for the use of each passenger. In addition, passengers should be briefed regarding passenger briefing cards and additional safety actions. Passengers should be told the following:

(a) The location of the 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; securing each passenger's food and beverage tray in its stowed position; and stowing any food, beverage, or tableware.

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

(a) Exits. The pilot in command or a crewmember must instruct passengers on the most appropriate exits for their use.

(b) Flotation Equipment. The pilot in command 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 briefing must include instructions about the location and 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.

(c) Information on Cards. The pilot in command should emphasize that review of the passenger information cards is important.

b. Posttakeoff. Immediately before or after the lighted "seatbelt" sign (if installed) is turned off, an announcement should be made that passengers should keep their seatbelts fastened while seated even if the "seatbelt" 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; smoking materials must be extinguished; tray tables must be secured in their stowed position; seat backs must be in a fully upright position; food, beverages, or tableware must be picked up; and carry-on baggage and movie/video screens must be properly stowed for landing.

d. Postlanding. The minimum postlanding briefing should advise passengers to remain seated with seatbelts fastened until the "seatbelt" sign, if installed, has been turned off and the passengers receive permission to unfasten their seatbelts from the pilot in command. This

announcement should be accompanied by an explanation that this is for their own safety and the

safety of those seated around them. Passengers should also be reminded concerning prohibitions against smoking. In addition, they should be told to use caution when opening carry-on baggage stowage areas such as overhead bins.

e. Crewmember Procedures. Each oral briefing provided by a carrier 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 crewmembers' safety instructions. Crewmembers should neither be assigned nor perform nonsafety-related duties during the safety briefings if those duties could obstruct the view of the passengers or distract them from listening.

2. PASSENGER SAFETY BRIEFING CARDS. Oral briefings must be supplemented with 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 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 information specific to that aircraft. Merely labeling the depiction of the differences with the type and model of aircraft is not sufficient. 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 and Location. The passenger safety briefing card must be designed and located so that the seated passenger will be able to see and have access to the card when it is placed in its normal location aboard the aircraft. The passenger briefing card should be large enough so that when placed in its normal location aboard the aircraft, the passenger seated for taxi, takeoff, and landing will be able to visually locate and identify the card. It should not be possible for the card, when it is in its normal location, to slip out of the sight of the passenger. The 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 card shall apply only to 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. 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 card in the languages used by the air carrier.

b. Extraneous Information. Passenger safety 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 briefing cards that provide information to passengers should include:

(1) Passenger Compliance with Safety Information. The instructions on the cards must advise passengers that they must comply with safety instructions including signs, placards, and instructions of crewmembers. The importance of complying with the "seatbelt" sign should be emphasized.

(2) Smoking. The cards should inform passengers that smoking is prohibited in the lavatories (if installed) or other designated nonsmoking areas, during takeoff and landing, anytime the "no smoking" sign (if installed) is illuminated, or when in the immediate vicinity of passengers using oxygen.

(3) Seatbelts. The cards should have instructions for fastening, tightening, and opening seatbelts.

(4) Seat Backs. The cards should provide instructions to passengers that their seat backs should be in the upright position for takeoff and landing.

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

(6) Exit Seating. The following information may be on separate cards located at the exit seat or it may be on each passenger information card. The important part of the requirement is that the information must be available at the exit seat. The information regarding exit seating must be printed on the card in the languages in which briefings and oral commands are given by the crew. Information on the criteria and functions applicable to a passenger occupying an exit seat must be listed on the card. In addition, the passenger information card must contain a request in the language used by the operator that a passenger identify himself or herself to allow reseating if he or she cannot meet the selection criteria; has a nondiscernible condition that will prevent him or her from performing the functions listed above; may suffer bodily harm as the result of performing one or more of those functions; or does not wish to perform those functions. For additional information on this subject please refer to § 135.129.

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

(8) Exit Operations. The cards must contain diagrams depicting the emergency opening of each exit type. Any manual operations necessary to successfully complete an evacuation, such as manual inflation of the evacuation slide or the recommended placement of the hatch on the seat or outside the aircraft, should also be included. Showing more than one method of opening a door could be confusing. Past experience has indicated that confusion is sometimes created by a diagram or picture that demonstrates operation of an exit peculiar to only one side of the aircraft. If, for instance, all the emergency door handles rotate toward the rear of the aircraft, this could be explained on the cards.

(9) Evacuation Slide/Assist Means. The 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.

(10) Overwing Exit Use. The cards must contain instructions illustrating the proper method of egressing through an overwing exit. The cards should 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 should be consistent with the procedure used during the operator's evacuation demonstration for that aircraft's operating certificate.

(11) Carry-On Baggage. The cards should inform passengers not to bring carry-on baggage to the exit in the event of an emergency.

(12) Brace Position. The cards should contain information about protective brace positions to be assumed by passengers, including children, in all seat orientations (i.e., forward-, aft-, and side-facing) and all seat spacing for that aircraft. Information about these brace positions is contained in Appendix 4 of this AC.

(13) Location of Survival Equipment. The 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 cards must depict the location of fire extinguishers. In addition, they must provide information regarding the use of fire extinguishers.

(15) Individual Flotation Devices. 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. It is suggested that if the airline supplies child flotation devices, the donning and method of inflation of these devices be depicted on the cards.

(16) Oxygen Mask. The cards must contain instructions on the location, 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) Portable Electronic Devices. The cards should inform passengers of permissible times, conditions, and limitations when various portable electronic devices may be used.

APPENDIX 3. PART 135 OPERATIONS (continued)

(18) Supplemental Information. The 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.

(19) Extended Overwater Operations. When liferafts are required to be carried in extended overwater operations, the cards must depict liferaft and slide/raft stowage, launching, and securing locations. The cards also must contain instructions for passengers concerning preparation for use, inflation methods, and the means for securing rafts to the aircraft.

APPENDIX 4. BRACE-FOR-IMPACT POSITION

1. INTRODUCTION. The Aeromedical Research Branch of the Civil Aeromedical Institute, Protection and Survival Laboratory, conducted research and tests with respect to establishing "brace-for-impact" positions for passengers and flight attendants. In order to establish a best brace-for-impact position for each person, it would be necessary to know the size and physical limitations of the individual, the seating configuration, the type of emergency, and many other factors.

2. REASONS FOR BRACING FOR IMPACT.

a. There are two primary reasons for bracing for impact. One is to reduce flailing and the other is to reduce secondary impact. Secondary impact can be reduced by prepositioning the body (particularly the head) against the surface it would strike during impact. Flailing can be reduced by having the occupant flex, bend, or lean forward over their legs in some manner.

b. Aircraft being used today may have seating arrangements which result in very small seat pitches (the space between rows of seats) or may have a combination of small and large seat pitch spacing (i.e., an aircraft with a first-class/coach seating arrangement). Also, recent amendments to part 121 have upgraded the airworthiness standards for flight attendant seats including the requirement for shoulder harnesses. In view of this information, the purpose of this appendix is to provide the best possible information for most emergency situations.

3. PASSENGER POSITIONS. Passengers should take a brace position in one of several ways and, in all cases, the seatbelt should be worn as tight as possible and as low on the torso as possible.

a. In aircraft with low-density seating or seats spaced relatively far apart, passengers should, as depicted in Figures 2 or 3, rest their heads and chests against their legs. Flailing can be reduced by having the passengers grasp their ankles or legs as depicted in Figure 2 or, if they are unable to do that, they should wrap their arms under their legs as depicted in Figure 3. Their heads should be face down in their laps and not turned to one side.

b. In aircraft with high-density seating or in cases where passengers are physically limited and are unable to place their heads in their laps, they should position their heads and arms against the seat (or bulkhead) in front of them as depicted in Figure 1.

c. Passengers in aft-facing seats should rest their heads on the seat back (or bulkhead) behind them as depicted in Figure 5. The passengers should not place their hands in back of their heads, as has been recommended in the past; instead, they should either place their hands in their laps or grasp the side of their seats.

d. The passengers' feet should be placed flat on the floor and slightly in front of the edge of the seat.

APPENDIX 4. BRACE-FOR-IMPACT POSITION (continued)

e. Passengers should not use pillows or blankets between their bodies and the object they are bracing against (either a seat back 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.

f. Children which are occupying approved child restraint devices should be braced in accordance with the manufacturer's instructions. Children in passenger seats should utilize the same brace position 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.

g. Pregnant or handicapped passengers may need the assistance of another person in taking a brace 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 POSITIONS. The brace positions for flight attendants will depend on the direction their seats face and type of restraint system those seats are equipped with.

a. In forward-facing seats equipped with an inertial reel shoulder harness, the flight attendants should sit back in the seat as depicted in Figure 5 and rest their chins on their sternums as depicted in Figure 4. If the seats are equipped with noninertial reel-type shoulder harnesses, the flight attendants should fasten their shoulder harnesses as tight as possible, lean against them, and rest their chins on their sternums as depicted in Figure 4. The flight attendants' arms and hands should be positioned in their laps or holding onto the side of their seats, but should not be holding onto their restraint systems.

b. In rear-facing flight attendant seats, the flight attendants should sit back in their seats, rest their heads against their seat backs or headrests, and have the restraint systems, either inertial or noninertial type, as tight as possible as depicted in Figure 5. Their hands should not be clasped behind their heads, but may be positioned as in a forward-facing seat.

5. OTHER SITUATIONS.

a. Helicopter "brace-for-impact" positions are the same as those for aircraft. Flight attendants, if present, should utilize either the brace position for passengers or for flight attendants, depending on their seats and restraint systems.

b. In the case of a planned emergency landing, the passengers should be briefed on the above information. In the case of an unplanned emergency, the flight attendants may only have

APPENDIX 4. BRACE-FOR-IMPACT POSITION (continued)

enough time to give a short command, such as “lean over” or “grab your ankles.” Experience has shown that in an attempt to take a brace position of some sort, the passengers will end up in a position which could result in less injury than if no attempt had been made at all.

APPENDIX 4. BRACE-FOR-IMPACT POSITION (continued)

FIGURES 1 through 5. BRACING POSITIONS

BRACING POSITIONS



Figure 1.



Figure 2.

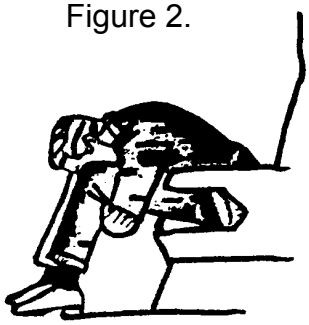

Figure 3.



Figure 4.



Figure 5.