



AEROSPACE RECOMMENDED PRACTICE

ARP4072™

REV. A

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Superseding ARP4072

Safety Considerations of Carry-On Baggage Relating to the
Emergency Evacuation of Transport Category Aircraft

RATIONALE

This revision reflects updates to the references.

FOREWORD

Investigations of transport category aircraft accidents have shown that items carried into the cabin by passengers have posed hazards during emergencies. Items of carry-on baggage have dislodged during crash decelerations, striking passengers and cabin crewmembers, blocking access to emergency exits and impeding evacuations. During evacuations, attempts by passengers to retrieve and take their carry-on baggage when exiting the aircraft have slowed the evacuations, damaged the evacuation slide, and created the need to dispose of items taken from passengers during the evacuation. Passengers who use slides while carrying baggage have also been unable to stabilize their descent, adding to the risk of injury.

1. SCOPE

This SAE Aerospace Recommended Practice (ARP) provides information and recommended guidelines for handling carry-on baggage prior to emergencies and during the emergency evacuation of transport category aircraft.

Recommendations are provided on limiting the size, amount, and weight of carry-on baggage brought into the cabin, improved stowage of carry-on baggage to minimize hazards to passengers in flight and during emergency evacuations, and procedures to ensure carry-on baggage is not removed during an emergency evacuation.

2. REFERENCES

2.1 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Aerospace Technical Report.

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<https://www.sae.org/standards/content/ARP4072A/>

SAE WEB ADDRESS:

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

ARP1384 Passenger Safety Briefing Materials

2.1.2 Code of Federal Regulations

Available from the United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-0000, www.gpoaccess.gov

14 CFR 25 Airworthiness Standards: Transport Category Airplanes

14 CFR 121 Operating Requirements: Domestic, Flag and Supplemental Operations

14 CFR 382 Nondiscrimination on the Basis of Disability in Air Travel

2.1.3 EASA Publications

Available from European Aviation Safety Agency, Postfach 10 12 53, D-50452 Cologne, Germany, Tel: +49-221-8999-000, www.easa.eu.int.

CS 25 Certification Specification for Large Aeroplanes

EU 965/2012 Air Operations

2.1.4 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

AC 91-62A Use of Child Seats in Aircraft

AC 121-29B Carry-on Baggage

2.1.5 ICAO Publications

Available from International Civil Aviation Organization, 999 University Street, Montreal, Quebec H3C 5H7, Canada, Tel: +1 514-954-8219, www.icao.int

Annex 6, Part 1 Operation of Aircraft - International Commercial Air Transport - Aeroplanes

2.1.6 TCCA Publications

Available from Transport Canada Civil Aviation, <http://www.canada.ca/en/services/transport/air/index.html>

CAR 525 Transport Category Aeroplanes

CAR 705 Commercial Air Services: Airline Operations

CASS 725 Commercial Air Services Standard: Airline Operations – Aeroplanes

AC 605-003 Child Restraint Systems

2.1.7 NTSB Publications

Available from National Transportation Safety Board Headquarters, 490 L'Enfant Plaza, SW, Washington, DC 20594, Tel: 202-314-6000, www.ntsb.gov.

NTSB/SS-00/01 Safety Study: Emergency Evacuation of Commercial Airplanes

A-00-87 Safety Recommendation – Carry-on Baggage

2.1.8 TSB Publications

Available from Transportation Safety Board of Canada, 200 Promenade du Portage, Place du Centre, 4th floor, Gatineau QC K1A 1K8, Tel: +1 819-994-3741, www.tsb.gc.ca

SA9501 A Safety Study of Evacuations of Large Passenger-Carrying Aircraft

A-07-07 Safety Recommendation – Carry-on Baggage

2.2 Definitions

CARRY-ON BAGGAGE: All items carried by passengers into the aircraft cabin.

STOWAGE COMPARTMENTS: Aircraft stowage compartments approved for carry-on baggage can include:

- a. Overhead compartments
- b. Closets
- c. Elevating coat racks
- d. Storage bustles
- e. Garment bag modules
- f. Carry-on baggage modules
- g. Overhead racks
- h. Ceiling compartments

UNDERSEAT STOWAGE: The space beneath the passenger seat that is bounded by the seat structure and includes restraint bars.

2.3 Mandating and Recommending Words

SHALL indicates a mandatory criterion.

SHOULD indicates a criterion for which an alternative, including noncompliance, may be applied if it is documented and justified

3. GENERAL REQUIREMENTS

3.1 Every air carrier should establish a carry-on baggage control program to prevent the boarding of carry-on baggage that will exceed the weight, size, shape, and total volume limitations of the approved stowage areas of the aircraft.

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3.2 The carry-on baggage control program should:

- identify who is responsible for the acceptance or refusal of carry-on baggage;
- identify and publicize the criteria that will be used for the acceptance or refusal of carry-on baggage;
- identify the procedures that will be used in acceptance or refusal of carry-on baggage; and
- identify the locations and under what conditions the screening will take place.

3.3 Items of carry-on baggage shall not exceed the stowage space in the aircraft cabin and shall not exceed the placarded weight and dimensions of the storage area. Carry-on baggage shall be stowed underneath a passenger seat or in an approved stowage compartment listed in the carry-on baggage control program.

3.4 The limitations on the size, number, and weight of carry-on baggage shall be visibly posted in passenger check-in areas both outside and inside the security zones of the terminal.

3.5 Each item of carry-on baggage shall be assessed prior to boarding to ensure compliance with the limits specified in the air carrier's carry-on baggage control program.

3.6 Underseat stowage should be limited to carry-on baggage that does not protrude into the main cabin aisle or beyond the rear edge of the seat bottom. This means that if a perpendicular line were drawn from the back of the seat bottom to the floor it would not intersect the stowed carry-on baggage. Items of carry-on baggage should not cause obstruction to passenger movement to, from, or across any aisle or passageway and should not be capable of sliding forward underneath the restraint bars.

NOTE: The dimensions of underseat stowage space vary by aircraft type/model and seat design; thus the same item of carry-on baggage may not fit under all seats. In addition, some seat designs include accessory/video boxes, or life preservers, which may further reduce the underseat stowage space.

3.6.1 Underseat stowage areas shall not be used unless the seat is equipped with a forward restraint bar and for locations bordering an aisle, a side restraint bar.

3.6.2 Underseat stowage areas forward of an emergency exit should not be used unless there is provision for rearward restraint to prevent the carry-on baggage from becoming dislodged into the passageway/exit area.

3.7 Carry-on baggage shall not be stowed in lavatories.

3.8 If musical instruments do not fit into other approved areas, they should be placed on outboard seats in the front rows of each zone behind a rigid bulkhead and secured with approved restraint devices to ensure that the article will not shift under emergency load conditions. They shall not be placed in seat rows adjacent to an exit. They shall not block any signage or interfere with deployment of oxygen masks.

3.9 Animal kennels carried on board by passengers shall fit underneath a passenger seat.

3.10 A child restraint system (CRS) shall not be placed in an exit row seat, or in any location where it obstructs access to the aisle from an outboard seat or to an emergency exit. Passengers should be informed to leave the CRS in the seat during an evacuation.

3.11 Passengers should be instructed, during the preflight safety briefing and via the safety information cards, to leave all carry-on baggage on the aircraft during an emergency evacuation.

3.12 The cabin crew should verify that all items of carry-on baggage have been stowed in approved compartments/locations prior to closing the aircraft boarding door and during cabin checks prior to takeoff and landing.