The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE RECOMMENDED PRACTICE

SAE ARP1315 REV. B

Issued 1975-05
Revised 1992-03-05

Submitted for recognition as an American National Standard

LAVATORY INSTALLATION

1. SCOPE:

This SAE Aerospace Recommended Practice (ARP) establishes recommendations with respect to personnel and aircraft safety for the design of lavatory compartments in commercial aircraft. Consideration should be given to the fact the lavatory compartment is an area in which the passenger is not under direct observation of the flight attendants.

2. REFERENCES:

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

ARP4387 Cabin Accommodations for Passengers With Disabilities - Transport Category Aircraft
ARP503E Emergency Evacuation Illumination
ARP577B Emergency Placarding - Internal and External
ARP767A Impact Protective Design of Occupant
ARP1270 Aircraft Cabin Pressurization Control Criteria
ARP1815 Safe Carriage of Disabled and Impaired Passengers
ARP4001 Lavatory Smoke Detector
ARP4120 Foldable Onboard Wheelchair for Physically Impaired Passengers

2.2 Other Documents:

The current applicable sections of Federal Aviation Regulations (FAR's) and U.S. Public Health Service requirements shall be considered minimum requirements.

Uniform Federal Accessibility Standards

Human scale 1/2/3 MIT Press

2.3 Definitions:

2.3.1 LAVATORY INSTALLATION: A lavatory installation is a compartment within an aircraft passenger cabin for the purpose of providing facilities for washing, waste disposal, and toiletry needs. The compartment may include:

a. Curtains
b. Enclosure (walls, doors, ceiling, and floors)
c. Cabinets (sink, dispensers, and disposals)
d. Supply compartments
e. Toilet system
f. Plumbing (water lines, drain lines, vent lines, and oxygen lines)
g. Electrical wiring and components
h. Accessories
i. Lighting, call system, and public address system
j. Oxygen supply provisions
k. Fresh air outlet
l. Safety equipment needed to ensure safety of occupant and equipment
m. Smoke detector

3. DETAIL RECOMMENDATIONS:

3.1 General Lavatory Construction:

The material used in the construction of the lavatory compartment and furnishings shall meet the requirements of FAR Part 25.

3.1.1 Magnesium or magnesium alloys shall not be used.

3.1.2 Modular unit construction is desirable.

3.2 Human Factors:

3.2.1 Consideration shall be given to the placement and operation of passenger-operated equipment to prevent injury.

3.2.2 Placement and/or bypassing of vent lines shall consider potential passenger injury when using the toilet facilities. The toilet seat/shroud design must not create a pressure seal against the seated passenger.

3.2.3 Passenger protection shall be considered in the design and architectural shaping of lavatory furnishings and surfaces.

3.2.4 Consideration shall be given to the use of at least one facility per airplane by handicapped/extra care passengers, with appropriate assist means provided to aid movement within the compartment. All faucets, handholds, switches, door handles in such a unit shall reflect design practices in referenced standards.

3.2.5 Consideration shall be given to the use of the facility by persons unfamiliar with the lavatory. Placarding shall be used for clarity when necessary. International symbology is encouraged.

3.2.6 Sharp edges and corners shall be avoided, especially in blind areas where servicing is difficult.

3.2.7 Decompression (emergency) oxygen shall be available and readily accessible. A minimum of two oxygen masks shall be provided. Deployment of the masks and their compartment door shall not block access to the lavatory.

3.2.8 Adequate lighting within the compartment shall be provided.

3.2.9 Suitable handholds shall be provided for use during unexpected turbulence.

3.3 Lavatory Configuration:

3.3.1 Readily visible "No Smoking in Lavatory" placards and marked ashtrays shall be provided inside and outside the lavatory compartment. The ashtrays shall be obvious and accessible to either a standing or seated occupant and readily distinguishable from doors for disposables. Self-contained ashtrays and housings shall be designed and located to prevent smoking materials from falling inside or behind the cabinets or into waste containers. While lavatories are no smoking areas, a passenger inadvertently entering the lavatory with a lighted cigarette needs a proper disposal location.

3.3.2 The waste disposal flap/door shall be clearly identified and readily distinguishable from an ashtray. It shall be placarded against disposal of cigarettes and cigars and be self-closing.

3.3.3 Waste receptacles and compartments shall be capable of containing a fire and the waste container shall be constructed of noncombustible materials. Automatic or heat activated fire extinguishing units or systems shall be installed in each waste compartment and be easily accessible.

3.3.4 The waste container and chute shall direct waste into the bin and be designed to prevent jamming and for ease of servicing to facilitate and encourage good housekeeping. Easily opened and closed doors with straightforward access and easily removed waste container shall be provided. It shall be impossible to install the removable container improperly. Compartment door latching shall be positive and indicate the latch engaged position.

3.3.5 Consideration shall be given to the overall arrangement of furnishings and equipment to provide adequate separation and protection of electrical wiring and components, plumbing lines, vent lines, and oxygen lines from waste disposal areas.

3.3.6 Dispenser service doors and stowage compartment doors shall be designed to discourage opening and misuse by passengers. Any compartment which can be opened without the use of a tool or special knowledge shall be capable of containing a fire resulting from improper disposal of wastes and cigarettes.

3.3.7 Other than for controlled air extraction, there shall be no opening that could result in a flue action in the event of a fire within the lavatory compartment or subcompartments.

3.3.8 The floor shall be sealed to provide a barrier preventing liquids from dripping or seeping into compartments or equipment below.

3.3.9 Rapid decompression shall be considered during development of lavatory design. Passageway doors shall be designed to insure that they will not be torn loose in the event of rapid decompression.

3.3.10 Lavatory compartments shall be suitably ventilated.

3.3.11 The public address system shall be audible in the lavatory compartment to inform passengers of all announcements.

3.3.12 A service panel shall be available within the compartment and include an attendant call button and "Return to Seat" sign. A passenger call from the lavatory shall also illuminate a light outside the lavatory and (optionally) on the attendant panel to indicate the lavatory from which the passenger call originated.

3.3.13 Lavatory doors and the areas around the door opening shall have no sharp edges or protrusions which could cause injury or present a hazard to safe movement under normal or emergency conditions.

3.3.14 When in the open position, lavatory passageway doors shall not block the egress of occupants from seats through aisles required for access in emergency conditions. As an alternate, the door must be designed not to open under emergency conditions.

3.3.15 The door must be openable from the outside. The door lock must be openable without the use of tools or keys from outside of the lavatory. Doors shall have removable hinge pins or similar devices.

3.3.16 Operating handles or knobs shall "unlock" when gripped and turned in either direction. The operating mechanism shall be designed to be overridden should a linkage failure occur.

3.3.17 When two adjacent doors are so hinged that the doors open toward each other, the design shall preclude any jamming or interference that could lock the doors in a semiopen position.

3.3.18 Each lavatory shall be equipped with an approved detector. Indication of smoke detection shall comply with applicable FAR's.