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Aircraft Crash Axes

RATIONALE

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1. SCOPE:

This SAE Aerospace Information Report (AIR) provides information demonstrating the need for establishing design and performance standards for aircraft crash axes.

1.1 Purpose:

The purpose of this AIR is to provide information concerning the regulation and use of aircraft crash axes. These axes are required by regulations specified below. They are intended for use by aircraft crew members to assist in evacuation, extrication, fire fighting, or other emergency activities.

2. REFERENCES:

2.1 Applicable Documents:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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2.1.1 FAA Publications: Available from the United States Government Printing Office (GPO). Order online at www.access.gpo.gov/su_docs.

- 14 CFR Part 91 General Operating and Flight Rules
- 14 CFR Part 121 Operating Requirements: Domestic, Flag, and Supplemental Operations
- 14 CFR Part 125 Certification and Operations: Airplanes having a seating capacity of 20 or more passengers or a maximum payload capacity of 6000 pounds or more
- 14 CFR Part 135 Operating Requirements: Commuter and On-Demand Operations

2.1.2 JAA Publications: Available from Printing & Publications Services Ltd., Greville House 37, Gratton Road, Cheltenham GL50 2BN, England, Telephone +44(0)1242 235 151, Fax +44(0)1242 584 139, Credit Card Hotline +44(0)1242 263 993.

JAR-OPS 1.795 Crash Axes and Crowbars

2.1.3 National Transportation Safety Board (NTSB) Publications: Available from NTSB website: <http://www.nts.gov>.

NTSB Recommendation AAR-72/10
NTSB Recommendation AAR-96/06

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

AS5402 Design and Performance Criteria, Aircraft Crash Axes
ARP5403 Aircraft Crash Axes

2.2 Definitions:

CRASH AX: A hand tool to aid aircraft crew members in emergencies. The hand tool is to assist crew members in penetrating aircraft materials and for prying, twisting and cutting jammed items that are impeding the crews' responding to an emergency.

3. REGULATORY BACKGROUND:

The following background explains the requirements for provision of the crash ax in aircraft and lists actual aircraft accidents in which an improved crash ax design may have increased the chance for escape and survival.

3.1 FAR Requirements:

The following Federal Aviation Regulation (FAR) sections govern aircraft crash ax requirements:

- §91.513 Emergency equipment
 - e) Each airplane accommodating more than 19 passengers must be equipped with a crash ax.
- §121.309 Emergency equipment.
 - e) Crash ax. Except for non-transport category airplanes type certificated after December 31, 1964, each airplane must be equipped with a crash ax.
- §125.207 Emergency equipment requirements.
 - a) No person may operate an airplane having a seating capacity of 20 or more passengers unless it is equipped with the following emergency equipment:
 - 2) A crash ax carried so as to be accessible to the crew but inaccessible to passengers during normal operations.
- §135.177 Emergency equipment requirements for aircraft having a passenger seating configuration of more than 19 passengers.
 - a) No person may operate an aircraft having a passenger seating configuration, excluding any pilot seat, of more than 19 seats unless it is equipped with the following emergency equipment:
 - 2) A crash ax carried so as to be accessible to the crew but inaccessible to passengers during normal operations.

Although the above regulations do specify when and where a crash ax is required, no design or performance standards are given.

3.2 JAR Requirements:

The following Joint Aviation Requirement (JAR) section governs aircraft crash ax requirements outside the United States for all JAA member countries:

- JAR-OPS 1.795 Crash axes and crowbars
 - (a) An operator shall not operate an aeroplane with a maximum certified take-off mass exceeding 5700 kg or having a maximum approved passenger seating configuration of more than 9 seats unless it is equipped with at least one crash axe or crowbar located on the flight deck. If the maximum approved passenger seating configuration is more than 200 an additional crash axe or crowbar shall be carried and located in or near the most rearward galley area.

Although the above regulations do specify when and where a crash ax is required, no design or performance standards are given.