



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: ACTION: Equivalent Level of Safety, Cessna Date:
526, FAR Section 23.807(b) (5), Occupant
Escape; Finding No. ACE-94-9

From: Manager, Standards Office, ACE-110

Reply to
Attn. of:

To: Manager, Small Airplane Directorate, ACE-100

This memorandum is to document concurrence with an equivalent level of safety to the occupant escape requirements of FAR Section 23.807(b) (5).

Background: See attached Issue Paper AG-2.

Applicable Regulations: Federal Aviation Regulation (FAR) Section 23.807(b) (5), occupant escape.

Applicant's Position: See attached Issue Paper AG-2.

FAA's Position: See attached Issue Paper AG-2.

Compensating Features: See attached Issue Paper AG-2.

Recommendation: We concur with Cessna's position as stated in Issue Paper AG-2. The installation of the ejection seats and their associated systems and the jettisonable canopy provide an equivalent level of safety to the occupant escape requirements of FAR Section 23.807(b) (5). The certification basis for the Model 526 will include an equivalent safety finding for Section 23.807(b) (5).

Concurred by:

Manager, Standards Office, ACE-110

Date

Manager, Small Airplane Directorate
Aircraft Certification Service, ACE-100

Date

Attachment

ISSUE PAPER**Project:** Cessna Aircraft Company Model 526, Project No. TC0155WI-A**Item:** AG-2**Stage:** 1**Reg. Ref.:** 23.807(b)(5)**Date:** June 10, 1994**National Policy Ref.:** None**Issue Status:** Closed**Subject:** Installation of Ejection Seats**Branch Action:**
115W/120W/140W/160W**Compliance Target:** Pre-TC

Statement of Issue:

Cessna's letter of January 18, 1993 made application for a new Type Certificate for the Model 526. The Cessna Model 526 will be a twin engine turboprop airplane certificated in the Acrobatic Category under Part 23. By their letter Cessna also informed the FAA of their intent to certify the Model 526 with ejection seats installed. Cessna plans to obtain a Provisional Type Certificate by June 27, 1994.

Discussion:

The Model 526 is a twin engine two place (tandem seating) low wing monoplane of conventional configuration and construction. Two ejection seats and a jettisonable canopy are incorporated. The ejection seat is a Universal Propulsion Company (UPCO) Model SIIS-3RW. This seat is a modification of the seat currently in use in the Harrier which has previously been qualified to military specifications. The other components of the ejection system (i.e. canopy unlock thrusters, canopy jettison rockets, and electronic inter-seat sequencing system) are also all derivatives of existing equipment.

The FAA informed Cessna by letter dated January 11, 1994, that qualification of the ejection seat to the requirements of the Air Force Systems Requirement Document (SRD) could be used as justification for a finding of equivalent safety for the escape requirements of §23.807(b)(5). The Air Force was requested to assist the FAA in making this finding of compliance to the SRD requirements since they had the personnel with experience in evaluating ejection seat performance. The test and design data for the 526 ejection system was submitted to the Air Force by UPCO for evaluation. The results of this evaluation are shown in their memo dated June 8, 1994, (copy attached). The Air Force found that the Cessna 526 escape system complied with the SRD requirements to the extent that flight safety requirements have been met sufficiently for a provisional type certificate. Full compliance with the SRD and specified testing must be completed or fulfilled by similarity before issuance of a full type certificate would be endorsed.

Conclusion: The FAA concurs and finds that installation of the ejection seats and their associated systems and the jettisonable canopy provide an equivalent level of safety to the requirements of §23.807(b)(5). The certification basis for the Model 526 will include an equivalent level of safety finding for §23.807(b)(5).

Coordination: (Initial and date)

ACE-115W	ACE-120W	ACE-140W	ACE-160W
<i>Eupittner</i> 6/13/94	<i>RK Rothgeb</i> 6-13-94	<i>C.S. Riddell</i> 6-10-94	<i>J.J. Miller</i> 6-13-94

ACE-107	ACE-110	ACE-100W
<i>AWagner</i> 6/13/94		