



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: **ACTION:** Review and Concurrence, Equivalent Level of Safety, Raytheon Model 3000, 14CFR, Part 23, Section 23.562 and 23.807(b)(5), Ejection Seats; Finding No. ACE-99-06

Date: June 7, 1999

From: Tina Miller, ACE-117W
FAA Program Manager

Reply to: Steven E. Potter
Attn. of: (316)946-4168

To: Manager, Small Airplane Directorate, ACE-100
Attn: Karl M. Schletzbaum

This memorandum is to document concurrence with an equivalent level of safety to the emergency landing and emergency exit requirements of 14 CFR, Part 23, Section 23.562 and 23.807(b)(5).

Background: Because of the high design diving speed (V_D) of the Raytheon Model 3000 Joint Primary Airplane Training System (JPATS) airplanes, an ejection seat is the only means to comply with the requirements of Section 23.807(b)(5). This section requires that emergency exits in acrobatic category airplanes "allow each occupant to bail out quickly with parachutes at any speed between V_{S0} and V_D ". Possible alternatives to issuance of ejection seat special conditions were evaluated and considered during the source selection process and it was determined that since the FAA does not have the expertise to evaluate ejection seat testing, the Air Force will be used as a consultant. It has been determined that qualification of the ejection seat to the Systems Requirement Document (SRD) will be used as an equivalent level of safety finding for Section 23.807, especially paragraph 23.807(b)(5). The FAA has approved the ejection seat data based on the Air Force's review of the data and concurs that the ejection seat satisfies the SRD crew escape, and test & evaluation requirements. Additionally, in accordance with Section 21.21(b)(1), the ejection seat will be used as an equivalent level of safety in lieu of literal compliance with Section 23.562. Refer to attached ACE-100 Memo, Revision to ACE-100 Program Plan for Certification of Joint Primary Aircraft Training System (JPATS) and Request for Air Force Review of Ejection Seat Data, dated December 29, 1993.

Applicable Regulations: 14 CFR, Part 23, Sections 23.562 and 23.807.

Regulations Requiring an ELOS: 14 CFR, Part 23, Sections 23.562 and 23.807.

Compensating Features: Canopy fracturing system and the Martin-Baker MkUS16LA ejection seats.

Applicant's Position: See attached Raytheon letter of May 14, 1999 and Department of the Air Force letter dated May 3, 1999. Also attached are the referenced limitations from the draft Airplane Flight Manual and the draft Airworthiness Limitations Section of the Maintenance Manual.

FAA's Position: See attached FAA Memorandum to USAF ASC/YTPE, Revision to ACE-100 Program Plan for Certification of Joint Primary Aircraft Training System (JPATS) and request for Air Force Review of Ejection Seat Data of December 29, 1993.

Recommendation: We concur with the Air Force's recommendation as stated in their letter dated May 3, 1999, that the FAA proceed with granting the Raytheon requested equivalent level of safety to FAR Sections 23.562 and 23.807 with the component operational limitations as stated in the AFM and maintenance manuals.



Tina L. Miller
FAA Program Manager
Wichita Aircraft Certification Office

Concurrence:



Manager, Standards Office, ACE-110

7/8/99

Date



Manager, Small Airplane Directorate, ACE-100

7/8/99

Date