



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memorandum

Subject: **ACTION:** Equivalent Level of Safety, SIAI
Marchetti S211A, 14 CFR Part 23, § 23.807(b)(5);
Occupant Escape; Finding No. ACE-95-11

Date:

APR 06 1995

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 14 CFR Part 23, § 23.807(b)(5).

BACKGROUND:

The SIAI Marchetti Model S211A is a two-place (tandem), all metal, mid-wing cantilevered, retractable gear, pressurized, single turbofan engine airplane with a maximum weight of 6,394 pounds intended for specialized military (public aircraft) operations as a Part 23 airplane in the Acrobatic Category. SIAI Marchetti, with the S211A, is competing for the Joint Primary Aircraft Training System (JPATS) contract. The S211A is equipped with existing Martin Baker MK 10 ejection seats. This seat is used in more than 10 types of existing military jets throughout the world.

APPLICABLE REGULATIONS:

Section 23.807(b)(5) falls under the Emergency Exits requirements and states, "In the case of acrobatic category airplanes, [each emergency exit must -] allow each occupant to bail out quickly with parachutes at any speed between V_{SO} and V_D .

APPLICANT'S POSITION:

SIAI Marchetti in coordination with the Italian civil aviation authorities (RAI) offer the following position:

The S211A is equipped with an existing Martin Baker MK 10 seat, which was not developed explicitly to meet the JPATS SRD requirements.

However, the same seat model is in service with many air forces throughout the world and is currently installed on many widely-used aircraft.

RAI has evaluated the relevant installation, tests and service experience (which includes three successful double ejections and one single, of S211 aircraft equipped with Martin Baker MK 10 crew escape systems.) For present installation equivalence with safety aspects of SRD concerning crew escape, test and evaluation has been demonstrated.

DISCUSSION:

Non-JPATS related Air Force personnel will review the ejection seat data since the FAA does not have the experience or expertise to evaluate ejection seats. The standards for ejection seat approval will come from the Air Force JPATS Systems Requirement Document (SRD). The FAA will only approve the ejection seat data after the Air Force has reviewed the data and concurs that the ejection seat meets the intent of the SRD specifications. The ejection seat provides an equivalent level of safety for the emergency exit requirement in § 23.807(b)(5) because powered egress is the only way to escape from airplanes with high V_D speeds.

FAA'S POSITION:

The FAA finds that the installation of the ejection seats and their associated systems provides an equivalent level of safety to the occupant escape requirements of § 23.807(b)(5). The Air Force evaluation states that the ejection seat and associated systems are sufficient for the proposed type certificate, that is limited to two aircraft. The certification basis for the Model S211A will include an equivalent level of safety finding for § 23.807(b)(5).

CONCURRED BY:

_____ Manager, Standards Office, ACE-110	_____ Date
_____ Manager, Small Airplane Directorate Aircraft Certification Service, ACE-100	_____ Date