



Advisory Circular (AC)

Controllability During Approach And Landing V_{MCL} , Considerations

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Advisory Circular (AC) is to provide guidance material for acceptable means, but not the only means, of demonstrating compliance with the requirements of Chapter 525 of the Airworthiness Manual (AWM), dealing with controllability and minimum control speed (V_{MCL}) during landing approach.

This advisory material is presently the subject of international harmonisation, and this AC is issued for use during type approval programs. When harmonisation is completed, this AC will be amended, or revoked and the corresponding harmonised advisory material adopted.

1.2 Guidance Applicability

This document is applicable to all Transport Canada personnel, delegates and industry.

1.3 Description of Changes

This document, formerly AMA No.525/7A is reissued as an AC. With the exception of minor editorial changes, the content is unaltered.

1.4 Termination

This document does not have a terminating action. It will however, be reviewed periodically for suitability of content.

2.0 REFERENCES

2.1 Reference Document

It is intended that the following reference material be used in conjunction with this document:

Chapter 525 of the Airworthiness Manual — *Transport Category Aeroplanes*.

2.2 Cancelled Document

As of the effective date of this document, AMA No. 525/7A dated 30 June 1999 is cancelled.

3.0 BACKGROUND

Section 525.143 requires that an aircraft be safely controllable during landing and that it must be possible to make a smooth transition from one flight condition to any other flight condition under any probable operating conditions including sudden failure of the critical engine. Section 525.149 requires that V_{MCL} , the minimum control speed during landing approach must be established. This AC provides an acceptable means of relating the minimum approach and landing speeds to V_{MCL} , such that the requirements of 525.143 are met.

4.0 ACCEPTABLE MEANS OF COMPLIANCE

The following are acceptable means of compliance:

- (a) Minimum Landing Speed. It should be noted that in accordance with 525.119, all engines operating landing climb gradient must be met at a speed of not more than $1.3 V_S$. This is interpreted as not more than V_{REF} .
- (b) Minimum Approach Speed. The minimum approach speed used to show compliance with the requirements of 525.121(d) should meet the following:
 - V_{APP} not less than $1.2 V_S$ (Approach Configuration)
 - V_{APP} not less than $1.1 V_{MCL}$ (Approach Configuration)

It should be noted that in accordance with 525.121(d), the one-engine-inoperative missed approach climb gradient must be met at a speed not exceeding $1.5V_S$ and V_S for this configuration cannot exceed 110% of the V_S in the corresponding landing configuration.

- (c) Flight tests should be carried out to show that the above speed schedules and crew procedures for balked landing and missed approach meet the requirements of 525.101(h).

5.0 AEROPLANE FLIGHT MANUAL

The landing climb, approach climb and landing data in the AFM should be established with speed schedules in compliance with paragraph 4.

6.0 HEADQUARTERS CONTACT

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