



# Advisory Circular

**Subject: Methodology for Establishing Takeoff and Landing Performance on Contaminated Runways**

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## 1.0 INTRODUCTION

This Advisory Circular (AC) is provided for information and guidance purposes. It may describe an example of an acceptable means, but not the only means of demonstrating compliance with regulation and standards. This AC on its own does not change, create, amend or permit deviations from regulatory requirements nor does it establish minimum standards.

### 1.1 Purpose

The purpose of this AC is to provide information, guidelines, recommendations and acceptable means of compliance for use by applicants in the production of performance information for aeroplanes when operated on runways that are contaminated by standing water, slush, snow, ice or other contaminants.

### 1.2 Applicability

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

### 1.3 Description of Changes

Not applicable.

## 2.0 REFERENCES

### 2.1 Reference Documents

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

- (a) Chapter 525 of the Airworthiness Manual (AWM)—*Transport Category Aeroplanes*; and
- (b) European Aviation Safety Agency (EASA) Certification Specifications (CS)-25 — *Large Aeroplanes, Book 2—Acceptable Means of Compliance (AMC)*.

### 2.2 Cancelled Documents

Not applicable.

### 2.3 Definitions and Abbreviations

The following definitions and abbreviations are used in this document:

- (a) **AMC** means Acceptable Means of Compliance
- (b) **AMJ** means Advisory Material Joint
- (c) **AWM** means Airworthiness Manual
- (d) **CS** means Certification Specifications
- (e) **EASA** means European Aviation Safety Agency
- (f) **JAA** means Joint Aviation Authorities
- (g) **JAR** means Joint Aviation Regulation
- (h) **TCCA** means Transport Canada Civil Aviation

## 3.0 BACKGROUND

### 3.1 Transport Canada

- (1) On March 10, 1989 at Dryden, Ontario an Air Ontario Fokker F-28 MK 1000 crashed off the end of the runway on departure. Twenty-one passengers and three crew members (including the

Captain, First Officer and one Flight Attendant) of the 65 passengers and four crew members on board died as a result of the crash. The aircraft was destroyed in the post crash fire.

- (2) As a result of the Commission of Inquiry into this accident, evidence was heard that led it to conclude that the information regarding the operation of aircraft on a wet and contaminated runway must be made available to persons at all levels of flight operations. In his report dated March 1992, the Commissioner, The Honourable Virgil P. Moshansky, made the following Moshansky Commission Recommendation: *43—Transport Canada require that aircraft flight manuals and related aircraft operating manuals contain approved guidance material for supplementary operating procedures, including performance for operating on wet and contaminated runways.*
- (3) As of November 1991, subsection 525.1581(g) of the AWM required that an Aeroplane Flight Manual contain information in the form of approved guidance material for supplementary operating procedures and performance information for operating on contaminated runways. The Federal Aviation Administration, however, has no equivalent requirement in their regulations. EASA does have a similar requirement in CS 25.1591.

### **3.2 EASA**

- (1) A requirement related to performance on contaminated runways was introduced through JAA regulation JAR 25X1591 and AMJ 25X1591 in October 1988. The rule and associated advisory material addressed the development of performance information on both wet and contaminated runways. In the absence of any specific TCCA material, the JAA advisory material was used by Canadian manufacturers and accepted by TCCA.
- (2) As a result of regulatory developments and better knowledge of aeroplane performance on contaminated runways, the JAA Flight Study Group considered that a general revision of the AMJ 25X1591 was necessary and, as an interim measure, the Temporary Guidance Material 25/07 (Performance on Contaminated Runways) was published to give guidance for the application of JAR 25X1591 pending revision.
- (3) Now, following additional work on more accurate determination of performance on a contaminated runway, a revised EASA CS 25.1591 and a new AMC 25.1591 have been published. TCCA Flight Test Division staff was involved in the development of this AMC as part of their activities in the JAA Flight Study Group and commented on the EASA Notice of Proposed Amendment proposing changes to CS 25.1591 and a new AMC to CS 25.1591.

### **4.0 ACCEPTABLE MEANS OF COMPLIANCE**

An acceptable means of compliance with the requirements of subsection 525.1581(g) of the AWM is contained in AMC 25.1591 as published by EASA. This AMC is published in Book 2 of EASA Certification Specifications for Large Aeroplanes, CS-25, which is available from EASA's Certification Agency Measures web page at [http://www.easa.eu.int/home/certspecs\\_en.html](http://www.easa.eu.int/home/certspecs_en.html).

At present it has not been decided whether TCCA should consider adopting a similar requirement to that contained in CS 25.1591, although as noted above the AMC guidance material is acceptable for showing compliance with the existing AWM requirement.

## 5.0 CONTACT OFFICE

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Suggestions for amendment to this document are invited and should be submitted via the Transport Canada Civil Aviation Issues Reporting System (CAIRS) at the following Internet address:

<http://www.tc.gc.ca/CivilAviation/QualityAssurance/QA/cairs.htm>

or by e-mail at: [CAIRS\\_NCR@tc.gc.ca](mailto:CAIRS_NCR@tc.gc.ca)

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