



# Policy Letter (PL)

## Altitude Markings for Aircraft Sensitive Altimeters

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## **1.0 INTRODUCTION**

### **1.1 Purpose**

The purpose of this PL is to provide guidance related to Transport Canada's policy on:

- (a) Altitude increment markings for aircraft "sensitive" altimeters as required by section 605.14, 605.15, 605.16, and 605.18 of the Canadian Aviation Regulations (CARs). This policy had been previously stated in Airworthiness Policy Letter (APL) No. 2 and a November 24, 1981 memorandum, Aircraft Altimeter Markings, from the Civil Aviation Airworthiness Branch (ABE/L) to C.C.A.E. Winnipeg and copied to other Regional offices; and
- (b) Aircraft altimeter markings stated in Notice of Proposed Amendment (NPA) 2003-007, Altimeter, Pressure Actuated, Sensitive Type.

### **1.2 Guidance Applicability**

This PL is applicable to Headquarters (HQ) and Regional Aircraft Certification personnel including delegates, and Transport Canada Civil Aviation Safety Inspectors.

### **1.3 Description of Changes**

This PL replaces APL No. 2, Issue 1, dated October 5, 1994, and has been updated to reflect current regulations and standards, including those proposed standards addressed in NPA 2003-007. It also incorporates changes to the definition of a "sensitive altimeter" as stated in the background section of APL No. 2.

### **1.4 Termination**

This PL will be terminated upon publication of Airworthiness Manual (AWM) Chapter 551, Section 551.110 as proposed in NPA 2003-007.

## **2.0 REFERENCES**

### **2.1 Reference Documents**

- (1) Canadian Aviation Regulation (CAR) Part VI, Subpart 5 - General Operating and Flight Rules, Aircraft Requirements;
- (2) Canadian Aviation Regulation (CAR) - Notice of Proposed Amendment (NPA) 2003-007 – Altimeter, Pressure Actuated, Sensitive Type, Transport Canada RDIMS document number 238380;
- (3) Airworthiness Manual (AWM) Chapter 537 – Airworthiness, Appliances;
- (4) Airworthiness Manual (AWM) Chapter 551 – Airworthiness, Aircraft Equipment and Installation;
- (5) Memorandum on Aircraft Altimeter Markings dated November 24, 1981. Transport Canada RDIMS document number 318760;
- (6) Air Navigation Order (ANO) Series II No. 6 – Order Respecting Flight Instrument and Equipment Systems For Night Flying—Cancelled;
- (7) Air Navigation Order (ANO) Series V No. 22 – IFR Flight Instruments and Equipment—Cancelled;
- (8) United States of America, Federal Aviation Administration (FAA) - Technical Standard Order (TSO) – TSO-C10b Altimeter, Pressure Actuated, Sensitive Type;
- (9) United States of America, Federal Aviation Administration (FAA) - Airworthiness Inspector's Handbook Bulletin 92-05, FAA Order 8300.10 – Definition of "Sensitive" Altimeters; and
- (10) Society of Automotive Engineers - Aerospace Standards (SAE AS) 392C.

## **2.2 Cancelled Documents**

As of the effective date of this PL, Airworthiness Policy Letter (APL) No. 2, Issue 1, dated October 5, 1994, will be cancelled.

## **3.0 BACKGROUND**

Concerns over the use of altimeters with 50-foot increments versus the 20-foot increments required by TSO-C10b had been identified in APL No. 2, Issue 1, dated October 5, 1994. Paragraph 605.14(b), 605.15(1)(b), 605.16(1)(b), and 605.18(a) and (b) of the CARs require that aircraft be equipped with sensitive altimeters when operating under those respective flight operating environments. These requirements were previously contained in Air Navigation Order (ANO) Series II No. 6 and ANO Series V No. 22.

TSO-C10b defines one standard (SAE AS 392C) to which sensitive altimeters may be designed and built. The current requirements for this TSO require dial-marking increments not exceeding 20-feet of altitude. Altimeters marked in 50-foot increments, which are in widespread use in general aviation, may meet the requirements as a sensitive altimeter. These altimeters may or may not they meet the requirements of the TSO. These altimeters were originally approved as being part of the aircraft type design, supplemental type certificates or other approval. The approvals were based on flight evaluations which showed that reading accuracy provided by 50-foot marked altimeters was adequate for safe Visual Flight Rule (VFR) and Instrument Flight Rule (IFR) operations to Category I approach minima.

A policy was required to address the use of sensitive altimeters with 20-foot vs. 50-foot increments in various operating environments. Transport Canada's position was stated in a memo dated November 24, 1981, which adopted the position taken by the FAA in a letter, dated July 17, 1975. APL No. 2 was subsequently published to formally state Transport Canada's policy. Subsequently, the FAA issued Airworthiness Inspector's Handbook Bulletin 92-05, FAA Order 8300.10 to further clarify the definition of sensitive altimeters, and where altimeters with different scale markings could be used.

In 1999, the Canadian Aviation Regulatory Advisory Council (CARAC) Technical Committee V established an AWM 537/551 working group. This working group was requested to review equipment requirements prescribed by operating regulations under CAR Part VI and VII, and to recommend appropriate standards to be included in Chapter 551. The working group recommended in its final report of May 2002, that consideration be given to relocating the contents of APL No. 2, Aircraft Altimeter Markings to AWM Chapter 551.

NPA 2003-007 was developed to implement this CARAC working group recommendation, and was presented to the CARAC Technical Committee V meeting in February 2003. This PL is being issued to cover the interim period of time until the amendment proposed by the NPA is published. This PL reflects the position stated in APL No. 2 and NPA 2003-007.

## **4.0 SENSITIVE ALTIMETER MARKINGS**

### **4.1 Definitions**

For the purpose of this PL, the following definition of a "sensitive altimeter" (Sensitive Type, Pressure Actuated Altimeter) has been taken from NPA 2003-007:

*"A sensitive aneroid barometer, constructed so as to respond to pressure changes with a high degree of sensitivity that is graduated and calibrated and used chiefly in aircraft for finding distance above sea level, terrain, or some other reference point by a comparison of air pressures."*

## **4.2 Policy**

The intent of the Transport Canada Aviation (TCA) policy promulgated in the November 24, 1981 memo from Headquarters to the Regions on aircraft altimeter markings and in APL No. 2 is still valid and is specified below. The following criteria defines Transport Canada requirements for altitude increment markings for sensitive altimeters:

- (a) For all operations to Category II limits or lower, altimeters shall be marked in altitude increments not to exceed 20-feet; and
- (b) For all VFR operations, which require a sensitive altimeter and all IFR operations to Category I limits, altimeters shall be marked in altitude increments not exceeding 50-feet.

## **5.0 HEADQUARTERS CONTACT**

For more information please contact:

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