

**EXEMPTION FROM PARAGRAPH 804.01(c) OF THE
CANADIAN AVIATION REGULATIONS AND FROM CHAPTER 4 OF THE MANUAL
OF SURFACE WEATHER OBSERVATION**

Pursuant to subsection 5.9(2) of the *Aeronautics Act*, and after taking into account that the exemption is in the public interest and is not likely to affect aviation safety, I hereby exempt persons who provide aviation weather services, that have met the criteria and application set out below, from the requirements of Chapter 4 of the *Manual of Surface Weather Observation* made pursuant to paragraph 804.01(c) of the *Canadian Aviation Regulations*, subject to the following conditions.

PURPOSE

The purpose of this exemption is to permit service providers to provide meteorological observations consisting of the measurement of station pressure by aircraft altimeters for use in instrument procedures which is not permitted by Chapter 4 of the *Manual of Surface Weather Observation*.

CRITERIA AND APPLICATION CONDITIONS

Criteria:

Persons providing aviation weather services must have met the following criteria in order to operate under the authority of this exemption:

- (a) the aviation weather service must be measurements provided from a comparison of a minimum of two aircraft altimeters as defined in Technical Standard Order C-10b as adopted by the *Airworthiness Manual Chapter 537 Airworthiness Standards Appliances Subchapter B - Technical Standard Orders 537.103*; and
- (b) the aviation weather service must consist only of meteorological observations of the meteorological element of atmospheric pressure.

Application conditions

This exemption applies to persons who provide aviation weather services and have met, in addition to the above criteria, the following application conditions:

1. A service provider shall notify the Minister in writing in advance of commencing to provide the services as specified in the above criteria, of the intent to operate under the authority of this exemption, and upon reasonable notice given by the Minister after the date of that notification, shall provide the Minister with documentation that meets the requirements of section 3 of the Application conditions.
2. If a service provider is already providing services on the date that this exemption comes into effect and the service provider wishes to operate under the authority of this exemption, the service provider shall immediately notify the Minister in writing of the service provider's intent and, upon reasonable notice given by the Minister after the date of that notification, shall provide the Minister with documentation that meets the requirements of section 3.
3. The notification of intent required by application conditions 1 and 2 shall include the following information:
 - (a) the name, address telephone number and e-mail address (as applicable) of the provider of meteorological observation services;
 - (b) the name, location indicator, geographical coordinates, address and e-mail address (as applicable) of the aerodrome or station where the meteorological observation services will be provided;
 - (c) the name, address, telephone number and e-mail address (as applicable), of the person with whom the service provider has entered an agreement to provide meteorological observation services;
 - (d) the manufacturer, model and serial number of the aircraft altimeters used to make the observations;
 - (e) the name, address, telephone number and e-mail address (as applicable), of the person providing calibration of the altimeters to be used;
 - (f) the name, address and telephone number (and e-mail as applicable) of the person who inspected the aircraft altimeters to ensure compliance with section 3 of **Annex A** attached to this exemption;
 - (g) the schedule (including specification of an 'on request' basis, as applicable), at which meteorological reports of altimeter setting will be provided as established by the service provider;

- (h) the documentation of any irregularity in the siting or installation of the altimeters; and
- (i) method(s) by which meteorological reports of altimeter setting will be disseminated.

CONDITIONS

This exemption is subject to the following conditions:

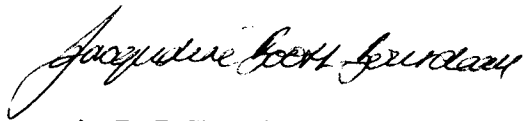
1. Each person providing meteorological observations under the authority of this exemption shall do so in accordance with **Annex A** attached to this exemption;
2. The service provider shall notify the Minister in writing prior to making any changes to the information referred to in the notification and required by condition 3 of the "Application" part of this exemption;
3. A service provider shall notify the Minister in writing prior to making any changes to services already being provided under the authority of this exemption;
4. The service provider shall immediately notify the Minister in writing if the aviation weather services provided under the authority of this exemption are discontinued; and
5. The service provider shall immediately notify NAV CANADA and the appropriate air traffic services units of any change to the service being provided if that service is used to permit the execution of an instrument procedure that is published in the *Canada Air Pilot*.

VALIDITY

This exemption is in effect until the earliest of the following:

- (a) the date on which an amendment to the appropriate provisions of the *Canadian Aviation Regulations* and associated standards comes into effect;
- (b) the date on which any one of the conditions set out in this exemption is breached; or
- (c) the date on which this exemption is canceled, in writing, by the Minister of Transport, where he is of the opinion that it is no longer in the public interest or that it is likely to affect aviation safety.

DATED at Ottawa, Ontario, Canada this 1st day of April 2007, on behalf of the Minister of Transport, Infrastructure and Communities.



for **D. B Sherritt**
Director, Standards Branch

Annex A

In this Exemption,

“qualified person” means a person who meets the requirements of this exemption

“service provider” means any person providing aviation weather services pursuant to this exemption.

1. INSTALLATION, SITING, OPERATION AND MAINTENANCE

1.1 The service provider shall establish and follow practices, procedures and specifications for operation and maintenance.

1.2 The service provider shall document the practices, procedures and specification established and followed in accordance with section 1.1 and shall provide all of the relevant information to the Minister upon reasonable notice given by the Minister.

1.3 The service provider shall obtain authorization to report station atmospheric pressure from the operator of the aerodrome or station, where the services are being provided, and shall notify the operator of the aerodrome or station of any change to the level of service being provided.

1.4 The following shall apply to the installation, siting, operation and maintenance of the aircraft altimeters used to obtain meteorological observations of atmospheric pressure and provided as meteorological reports of the current altimeter setting for an aerodrome or station:

- (a) A minimum of two independent aircraft altimeters, each meeting the requirements of Technical Standard Order (TSO) C10b as adopted by the *Airworthiness Manual Chapter 537 Airworthiness Standards Appliances Subchapter B - Technical Standard Orders 537.103* shall be used;
- (b) The altimeters shall be of similar make, model and performance;
- (c) The altimeters shall be located so as to supply data which is representative of the aerodrome or station for which the altimeter setting is required;
- (d) The altimeters shall be mounted in a box or rack that precludes damage from mishandling and ensures a permanent location;
- (e) The position and height of the altimeters shall minimize reading errors due to parallax when viewed from the front and a step shall be available to offset such errors as necessary;
- (f) The altimeters shall be free from sources of moisture or sources of restriction or drafts, and kept at a consistent temperature;

(g) The altimeters shall not be located within a pressurized building or in a location within a building that may experience fluctuations in pressure due to wind venting, forced air heating or cooling systems, or other cause that may induce an error of greater than one hundredth of an inch of mercury, equivalent;

(h) The altimeters shall be vented to an outside vent, or static source, should they not meet the conditions of paragraph 1.4(g);

(i) The altimeters shall be tagged, or otherwise marked, in plain site showing;

(i) the elevation of the altimeters;

(ii) the date of the last inspection;

(iii) that they are "not for use in aircraft"; and

(iv) that they are not to be used to provide the altimeter setting if the altimeters differ by more than 5 hundredths of an inch of mercury.

(j) The altimeters shall each be calibrated, at an avionics facility or other facility where internal adjustments and repairs to an altimeter can be made, in accordance with the provisions of *Canadian Aviation Regulation 571.02* and appendix B to the *Airworthiness Manual* within 30 days prior to installation and shall;

(i) meet the allowable scale error tolerances in table I to appendix B of the *Airworthiness Manual* up to and including the second test point greater in altitude than the elevation of the aerodrome for which the altimeters are intended for use;

(ii) meet requirements for hysteresis, after effect, case leak and friction that are appropriate for the full range of atmospheric pressure and rates of change of atmospheric pressure expected over the aerodrome for which the altimeters are intended for use;

(iii) meet the barometric scale error requirements of table IV to appendix B of the *Airworthiness Manual* with a tolerance of 25 feet; and

(iv) include a correction card for each altimeter indicating any corrections that must be applied to obtain an accurate reading.

(k) An on-site inspection shall be carried out following installation and prior to the first use of the altimeters to ensure that the accuracy provisions of section 3 to this annex are met.

2. OBSERVATIONS AND REPORTS

- 2.1 The reference elevation used to compute the altimeter setting shall use the elevation of the aircraft altimeters measured to the nearest foot above or below mean sea level as determined from a nearby benchmark or survey.
- 2.2 The altimeter setting shall be read, from each altimeter, rounded to the nearest lower hundredth of an inch of mercury.
- 2.3 The reading from each altimeter, pursuant to section 2.2 shall be corrected as indicated by the correction card supplied by the calibration facility in accordance with paragraph 1.4(j).

Reports

- 2.4 The meteorological report of altimeter setting shall use the lower of the altimeter setting readings obtained pursuant to sections 2.1 to 2.3.
- 2.5 All meteorological reports of altimeter setting shall contain the following information:
- (a) location indicator;
 - (b) time of the observation; and
 - (c) the altimeter setting rounded to the nearest lower hundredth of an inch of mercury.
- 2.6 All dates and times entered in a meteorological report shall be made with reference to the 24-hour clock of the Universal Coordinated Time.
- 2.7 The meteorological report of altimeter setting shall be considered valid for a period of no more than 90 minutes.
- 2.8 Altimeter settings in excess of 31 inches of mercury shall be reported as "altimeter setting in excess of 31 inches".
- 2.9 Meteorological observations of atmospheric pressure measured by aircraft altimeters shall not be used in the preparation of aviation routine weather reports (METAR/SPECI).

3. ACCURACY

3.1 The difference in reading between the altimeters shall be 5 hundredths of an inch of mercury equivalent, or less.

3.2 The altimeters shall receive on-site inspections at least once each year that:

- (a) verify that each altimeter reads within 4 hundredths of an inch of mercury of the value of the inspection barometer; and
- (b) the altimeters provide atmospheric pressure readings that are representative of the aerodrome or station for which they are intended.

3.3 The person performing the inspection pursuant to section 3.2 shall:

- (a) be independent from the manufacturer of the altimeters or from the service provider; and
- (b) have significant experience with meteorological instrumentation, access to a pressure standard adequate to verify accuracy to within 1 hundredth of an inch of mercury equivalent and have demonstrated experience in establishing traceability of measurements to a known standard.

3.4 If, following three immediately consecutive attempts to obtain a reading the altimeters do not meet the tolerance required by section 3.1 then they shall be immediately tagged or otherwise clearly marked as unserviceable and shall be re-calibrated or reconditioned prior to any further use;

3.5 If any of the altimeters do not meet the requirements of section 3.2 then they shall be immediately tagged or otherwise clearly marked as unserviceable and shall remain unserviceable until such time as an inspection shows that they meet these conditions.

3.6 The service provider shall ensure that the accuracy of the timing device used to establish the time of the meteorological observation is accurate to within 1 minute of the Universal Coordinated Time.

4. QUALITY CONTROL

4.1 The service provider shall establish and maintain documentation containing:

(a) the following meteorological station information:

- (i) contact information for the service provider and the person providing maintenance services for the meteorological station;
- (ii) contact information for the person providing inspection services for the aircraft altimeters;
- (iii) contact information for the calibration facility that calibrated the aircraft altimeters;
- (iv) written confirmation of location and elevation of the aircraft altimeters with reference to a survey result or benchmark;
- (v) location of the aircraft altimeters within the building;
- (vi) climatological description;
- (vii) a record of each meteorological report of altimeter setting provided for at least the previous 30 days;
- (viii) the schedule of observations and reports; and
- (ix) the person(s) authorized by the service provider to take observations.

(b) the following information for each altimeter:

- (i) type including manufacturer, model and serial number;
- (ii) written confirmation of the date and results of last calibration;
- (iii) the correction card resulting from the last calibration; and
- (iv) written confirmation of the date and results of the last inspection.

Training

4.2 The service provider shall ensure, and maintain documentation showing, that a qualified person(s) providing meteorological observations of atmospheric pressure obtained from aircraft altimeters, and provided as meteorological reports of the current altimeter setting to be used to permit the execution of instrument procedures, has/have received training which includes, as a minimum:

- (i) activating any buzzer mechanism or tapping the instrument as required;
- (ii) setting the dials to the correct elevation;
- (iii) reading the altimeters and interpolating values as necessary;
- (iv) using the correction cards;
- (v) determining the correct reading in accordance with section 2;
- (vi) established quality assurance routines including the comparison of the determined altimeter setting value with previous or nearby altimeter settings;
- (vii) approved dissemination methods; and
- (viii) the use and importance of the altimeter setting.

4.3 The service provider shall provide to the Minister, upon reasonable notice given by the Minister, a copy of the documentation required by sections 4.1 and 4.2.