

## Section 2. Altimeter Setting Procedures

### 7-2-1. General

a. The accuracy of aircraft altimeters is subject to the following factors:

1. Nonstandard temperatures of the atmosphere.
2. Nonstandard atmospheric pressure.
3. Aircraft static pressure systems (position error); and
4. Instrument error.

b. **EXTREME CAUTION SHOULD BE EXERCISED WHEN FLYING IN PROXIMITY TO OBSTRUCTIONS OR TERRAIN IN LOW TEMPERATURES AND PRESSURES.** This is especially true in extremely cold temperatures that cause a large differential between the Standard Day temperature and actual temperature. This circumstance can cause serious errors that result in the aircraft being significantly lower than the indicated altitude.

**NOTE—**

*Standard temperature at sea level is 15 degrees Celsius (59 degrees Fahrenheit). The temperature gradient from sea level is minus 2 degrees Celsius (3.6 degrees Fahrenheit) per 1,000 feet. Pilots should apply corrections for static pressure systems and/or instruments, if appreciable errors exist.*

c. The adoption of a standard altimeter setting at the higher altitudes eliminates station barometer errors, some altimeter instrument errors, and errors caused by altimeter settings derived from different geographical sources.

### 7-2-2. Procedures

The cruising altitude or flight level of aircraft must be maintained by reference to an altimeter which must be set, when operating:

**a. Below 18,000 feet MSL.**

**1. When the barometric pressure is 31.00 inches Hg. or less.** To the current reported altimeter setting of a station along the route and within 100 NM of the aircraft, or if there is no station within this area, the current reported altimeter setting of an appropriate available station. When an aircraft

is en route on an instrument flight plan, air traffic controllers will furnish this information to the pilot at least once while the aircraft is in the controllers area of jurisdiction. In the case of an aircraft not equipped with a radio, set to the elevation of the departure airport or use an appropriate altimeter setting available prior to departure.

**2. When the barometric pressure exceeds 31.00 inches Hg.** The following procedures will be placed in effect by NOTAM defining the geographic area affected:

**(a) For all aircraft.** Set 31.00 inches for en route operations below 18,000 feet MSL. Maintain this setting until beyond the affected area or until reaching final approach segment. At the beginning of the final approach segment, the current altimeter setting will be set, if possible. If not possible, 31.00 inches will remain set throughout the approach. Aircraft on departure or missed approach will set 31.00 inches prior to reaching any mandatory/crossing altitude or 1,500 feet AGL, whichever is lower. (Air traffic control will issue actual altimeter settings and advise pilots to set 31.00 inches in their altimeters for en route operations below 18,000 feet MSL in affected areas.)

**(b)** During preflight, barometric altimeters must be checked for normal operation to the extent possible.

**(c)** For aircraft with the capability of setting the current altimeter setting and operating into airports with the capability of measuring the current altimeter setting, no additional restrictions apply.

**(d)** For aircraft operating VFR, there are no additional restrictions, however, extra diligence in flight planning and in operating in these conditions is essential.

**(e)** Airports unable to accurately measure barometric pressures above 31.00 inches of Hg. will report the barometric pressure as “missing” or “in excess of 31.00 inches of Hg.” Flight operations to and from those airports are restricted to VFR weather conditions.