AC NO: 91-43

DATE: 6/26/75

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: UNRELIABLE AIRSPEED INDICATIONS

1. PURPOSE. The purpose of this Advisory Circular is to alert pilots to the possibility of erroneous airspeed/Mach indications that may be caused by blocking or freezing of the pitot system, and corrective action to be taken.

2. BACKGROUND. Unreliable airspeed/Mach indications may have contributed to one recent serious incident and a fatal accident. A frozen or blocked pitot system may have caused the unreliable indications. These erroneous readings can be so subtle, that a pilot may not detect the problem until it is too late for adequate corrective action. Many pilots may associate a frozen pitot head with symptoms of a rapidly decreasing or zero airspeed indication. This is not always the case, especially when operating high performance aircraft at high altitudes.

3. DESCRIPTION. When blocking or freezing of the pitot system occurs, two situations can develop as follows:

   a. If the ram air input to the pitot head is blocked, the indicated airspeed may drop to zero; and

   b. If the ram air input plus the drain hole is blocked, the pressure is trapped in the system and the airspeed indicator may react as an altimeter; e.g.:

      (1) During level flight, airspeed indication will not change even when actual airspeed is varied by large power changes;

      (2) During climb, airspeed indication will increase; and

      (3) During descent, airspeed indication will decrease.

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4. RECOMMENDATIONS. Due to the critical nature of this in-flight problem, pilots should be aware of indications symptomatic of a frozen or blocked pitot system and take the following corrective action:

   a. Emphasis should be on attitude flying when these symptoms are recognized.

   b. Check position of pitot heat switches and associated circuit breakers.

   c. If conditions during or shortly after takeoff are conducive to pitot system icing, pitot heat should be on prior to flight.

R. P. SKULLY, Director
Flight Standards Service