

1. Automated weather reporting systems are increasingly being installed at airports. These systems consist of various sensors, a processor, a computer-generated voice subsystem, and a transmitter to broadcast local, minute-by-minute weather data directly to the pilot.

**NOTE—**

*When the barometric pressure exceeds 31.00 inches Hg., see AIM, Para 7–2–3, Altimeter Errors.*

2. The AWOS observations will include the prefix “AUTO” to indicate that the data are derived from an automated system. Some AWOS locations will be augmented by certified observers who will provide weather and obstruction to vision information in the remarks of the report when the reported visibility is less than 7 miles. These sites, along with the hours of augmentation, are to be published in the Chart Supplement. Augmentation is identified in the observation as “OBSERVER WEATHER.” The AWOS wind speed, direction and gusts, temperature, dew point, and altimeter setting are exactly the same as for manual observations. The AWOS will also report density altitude when it exceeds the field elevation by more than 1,000 feet. The reported visibility is derived from a sensor near the touchdown of the primary instrument runway. The visibility sensor output is converted to a visibility value using a 10–minute harmonic average. The reported sky condition/ceiling is derived from the ceilometer located next to the visibility sensor. The AWOS algorithm integrates the last 30 minutes of ceilometer data to derive cloud layers and heights. This output may also differ from the observer sky condition in that the AWOS is totally dependent upon the cloud advection over the sensor site.

3. These real-time systems are operationally classified into nine basic levels:

(a) **AWOS–A** only reports altimeter setting;

**NOTE—**

*Any other information is advisory only.*

(b) **AWOS–AV** reports altimeter and visibility;

**NOTE—**

*Any other information is advisory only.*

(c) **AWOS–I** usually reports altimeter setting, wind data, temperature, dew point, and density altitude;

(d) **AWOS–2** provides the information provided by AWOS–1 plus visibility; and

(e) **AWOS–3** provides the information provided by AWOS–2 plus cloud/ceiling data.

(f) **AWOS– 3P** provides reports the same as the AWOS 3 system, plus a precipitation identification sensor.

(g) **AWOS– 3PT** reports the same as the AWOS 3P System, plus thunderstorm/lightning reporting capability.

(h) **AWOS– 3T** reports the same as AWOS 3 system and includes a thunderstorm/lightning reporting capability.

(i) **AWOS– 4** reports the same as the AWOS 3 system, plus precipitation occurrence, type and accumulation, freezing rain, thunderstorm, and runway surface sensors.

4. The information is transmitted over a discrete VHF radio frequency or the voice portion of a local NAVAI. AWOS transmissions on a discrete VHF radio frequency are engineered to be receivable to a maximum of 25 NM from the AWOS site and a maximum altitude of 10,000 feet AGL. At many locations, AWOS signals may be received on the surface of the airport, but local conditions may limit the maximum AWOS reception distance and/or altitude. The system transmits a 20 to 30 second weather message updated each minute. Pilots should monitor the designated frequency for the automated weather broadcast. A description of the broadcast is contained in subparagraph c. There is no two-way communication capability. Most AWOS sites also have a dial-up capability so that the minute-by-minute weather messages can be accessed via telephone.

5. AWOS information (system level, frequency, phone number, etc.) concerning specific locations is published, as the systems become operational, in the Chart Supplement, and where applicable, on published