

One-minute FAA ASOS/AWOS Data User Comments and Actions

1-Problem Reported by Daryl Herzmann:

FAA One-Minute ASOS data reports temperatures and dew point temperatures in whole degrees. The METAR reports have temperature and dew point temperature in whole degrees in the body of the report but also provide Temperature and dew point temperature values in tenths of degrees in the remarks section of the report.

Response:

- 1) The MADIS team has looked at the documentation provided by the FAA to decode the one-minute ASOS binary message formats. The current format and documentation doesn't provide for passing the higher precision temperature and dew point temperature measurements in the remarks section of the one-minute ASOS binary message.
- 2) The MADIS team also looked at thousands of one-minute ASOS observations to verify that there aren't temperature fields in the remark section of the report.
- 3) The MADIS team looked at the METAR messages and documentation and found that the FMH-1 document does require that the higher precision temperature and dew point temperature data be included in the METAR remarks section of the message.

10.4 Temperature and Dew Point Observing Standards

10.4.2 Temperature. Temperature shall be determined to the nearest tenth of a degree Celsius at all stations.

10.4.3 Dew Point. At designated stations, dew point shall be determined to the nearest tenth of a degree Celsius with respect to water at all temperatures.

10.5 Temperature and Dew Point Reporting Standards

10.5.1 Resolution for Temperature and Dew Point. The reporting resolution for the temperature and the dew point in the body of the report shall be whole degrees Celsius. The reporting resolution for the temperature and dew

point in the remarks section of the report shall be to the nearest tenth of a degree Celsius. Dew point shall be calculated with respect to water at all temperatures.

4) The MADIS team looked at approximately 14 million METAR reports covering the globe and found that 63% of the reports contain the remarks section, 37% of the reports are reporting in whole degrees only. That out of the 8.7 million reports that contain a remarks section that approximately 4.5 million or 32% of the total reports contain the higher precision temperature and dew point temperature, 68% of the METAR reports being received don't contain the higher precision temperature data. A list of the global stations reporting the higher precision temperatures is attached.

5) The FMH-1 document also states the following:

10.5.3 Reporting Procedures. Temperature and dew point are reported in the body of the report in accordance with paragraph 12.6.10. Temperature and dew point in the remarks section shall only be reported in METARs (see paragraph 12.7.2.d).

NOTE: That this states that Temperature and dew point in the remarks section shall only be reported in METARs. The FAA one-minute binary ASOS reports are not METAR reports.

6) The FAA voiced a concern from the start that the one-minute ASOS observations would be confused with METAR data messages. The MADIS team response was that the messages would never be distributed by MADIS in METAR form. That NWS was wanting to ensure that they had access to the higher resolution information to help with forecasting and verification of impacts to FAA airspace.

7) The MADIS team reached out to the FAA to find out if the one-minute binary messages could include the higher precision temperature information in the remarks section of the message. We are currently waiting for the FAA to get back to us. The FAA group responsible for these messages is ASWON (Aviation Surface Observation Network).

8) ASWON spelled out what NWS needs to do in order to get the changes incorporated into the one-minute binary data feed. The MADIS team pushed this information to NWS.

Current Action: NWS needs to make a request to the tri-agency (NOAA, FAA, DoD) ASOS configuration control board for a change to the one-minute binary format to include temperatures (atmospheric and dew point) in tenth of degrees.

2-Problem Reported by NCEI:

NCEI is currently archiving the FAA one-minute ASOS observations. They also receive system log files from each of the ASOS sites. NCEI would like to replace their current feeds for acquiring this data with a feed from MADIS. In order to do this completely NCEI would need MADIS to ingest the system log files.

- 1) The MADIS team looked at the FAA product list for the FAA WMSCR Binary and ASCII feeds and determined that the system log files aren't currently available on either of these feeds.
- 2) The MADIS team reached out to the FAA and the FAA verified that the system log files aren't currently available on the WMSCR feeds.
- 3) The FAA pushed the question to the ASWON group to determine if there is a way to make the files available on the WMSCR binary or ASCII feeds.
- 4) ASWON pointed out that Greg Dalyai ifrom the NWS maintenance branch is pulling these. We will look at collecting them from the NWS maintenance branch and passing them along to NESDIS as an approach.

Current Action: Verify that NWS has all the ASOS syslog files required by NESIDS and are willing to send the syslog files to MADIS so that they can be archived at NESDIS.

Action Closed --- FAA pointed to NWS as being the group that pulled syslog information from the ASOS sites. NWS has contracted with NCEI to provide this service. FAA WMSCR data feeds (binary and ASCII) don't contain syslog information.