



SURFACE WEATHER OBSERVATIONS

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OPR: HQ USAFE/A3WO
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Supersedes AFMAN 15-111_USAFE
Supplement, 30 November 2000.

Certified by: HQ USAFE/A3W
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Pages: 11
Distribution: F

AFMAN 15-111, 19 December 2003, is supplemented as follows:

This supplement applies to all Air Force Weather organizations that take and disseminate surface observations in support of United States Air Forces Europe (USAFE) or United States Army Europe (USAREUR) operations. This instruction does apply to Air National Guard or Air Force Reserve Command units. This publication provides further clarification on weather operations unique to USAFE. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 37-123, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS).

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This supplement adds North Atlantic Treaty Organization (NATO) color code reporting requirements for all fixed-wing capable airfields, institutes the use of 5000 meters (instead of 4800 meters) in visibility encoding and reporting, specifies Air Force Weather-Europe coding and reporting of additive data, and directs the coding of weather observations to facilitate an effective meteorological watch from the USAFE Operational Weather Squadron (OWS.)

1.3.1. All USAFE weather facilities are considered Manual until their Fixed Meteorological Equipment FMQ-19 is installed, certified and the FMQ-19/NTFS (New Tactical Forecast system) interface is fully functional at their site.

2.18.2.2. Weather units will discuss differences between tower and surface visibility with ATC personnel, whenever the difference is more than one Special criterion. At no time will this discussion compromise safety of flight; after discussing the difference, the weather unit will encode visibility provided by ATC personnel.

2.18.2.2.1. (Added) The weather unit will provide a list of visibility Special criteria to the ATC facility. The weather unit is responsible for the review of the Special criteria (based on the Flight Information Publication, DoD FLIP update cycle) and for providing the ATC facility with any required updates.

2.18.2.4. Weather units will not report tower visibility obtained from non-Department of Defense controllers as prevailing visibility in column 4b; the information may be encoded as a remark in column 13. Determine if controllers are providing actual prevailing visibility or lowest sector visibility and encode appropriately, e.g. Tower Visibility, TWR VIS 0400 or TWR VIS SE 0400.

2.19.4. The weather unit will contact the ATC facility at least annually and offer assistance with the maintenance of the tower visibility aids.

3.3.7.1.1. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or Pilot Report (PIREP)) encode the actual distance using nautical miles, if not then encode as distant (DSNT).

3.3.12.1.5. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or PIREP) encode the actual distance using nautical miles.

3.3.12.1.5.1. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or PIREP) encode the actual distance using nautical miles.

3.3.13. Encode on all Meteorological Aviation Report (METAR) observations if manually calculating pressure tendency (5appp.)

3.3.19.1.2.2. At units opening between 0600 and 0800 Universal Time Coordinated (UTC), determine this precipitation data at the time of the first METAR of the day and enter it on the line corresponding to the 0600Z 6-hourly observation.

3.3.20.2.2. At units opening between 0600 and 0800 UTC, determine this precipitation data at the time of the first METAR of the day and enter it on the line corresponding to the 0600Z 6-hourly observation.

3.3.21.3.2. At units opening between 0600 and 0800 UTC, determine this precipitation data at the time of the first METAR of the day and enter it on the line corresponding to the 0600Z 6-hourly observation.

4.4.1.1.3. Air Force Weather-Europe organizations will use 5000 meters or less.

4.4.1.1.4. Air Force Weather-Europe organizations will use 5000 meters or less.

5.5.2. Air Force Weather-Europe organizations will use 5000 meters instead of 4800 meters in all visibility encoding and reporting requirements.

Table 5.1. Content of Manual Surface Observations.

| Category 1 - Manual and Plain Language | | | | |
|---|--|---|---|----|
| Sector Visibility | | Air Force Weather-Europe organizations will use 5000 meters. | X | X |
| Variable Prevailing Visibility | | Air Force Weather-Europe organizations will use 5000 meters. | X | X |
| NATO Color Codes | | Use the Airfield Weather Color Code described in Allied Weather Publication 4A (AWP), <i>NATO Meteorological Codes Manual</i> , and in Table 5.4 (Added) to determine the landing status of an airfield. Enter the ceiling and visibility code of the airfield as the last entry in Column 13, except when an RCR or the term "LAST" is appended to the observation. Disseminate this remark locally only if required by locally supported agencies. (NOTE: This requirement is mandatory for the following locations: EGUL, EGVA, EGUN, ETAD, ETAR, LIYW, KQDG, ETIK, ETOU, ETIC, ETEU, and ETOR). | X | X |
| Category 2 - Additive Data | | | | |
| 24-Hour Precipitation | | Air Force Weather-Europe organizations will report this group at 0600 UTC. | X | NR |
| Snow Depth on Ground, 4/sss. | | Air Force Weather-Europe organizations will report the total snow depth on the ground (4-group) in the 00, 06, 12, and 18 UTC observations whenever there is more than a trace of snow on the ground, regardless if any precipitation has occurred in the previous 6 hours. If deployed and the supported customer requires it, code the 4-group in the 00, 03, 06, 09, 12, 15, 18, and 21 UTC observations. | X | NR |
| State Of Ground (905EE) | | If required by locally supported agencies, Air Force Weather-Europe organizations will report this group at 00, 06, 12, and 18 UTC. See Table 5.3. (Added) for a breakdown of the code. | X | NR |

Table 5.2. Reporting Requirements for Additive Data.

| | 00 | 03 | 06 | 09 | 12 | 15 | 18 | 21 |
|--|----|----|----|----|----|----|----|----|
| 24-Hour Precipitation, 7R24R24R24R24 Air Force Weather-Europe organizations will report this group at 0600 UTC. | | | X | | | | | |
| 6-Hour Maximum Temperature, 1snTxTxTx. Air Force Weather-Europe organizations will not report this group. | | | | | | | | |
| 6-Hour Minimum Temperature, 2snTnTnTn. Air Force Weather-Europe organizations will not report this group. | | | | | | | | |
| State Of Ground (905EE) | X | | X | | X | | X | |

Table 5.3. (Added) State Of Ground (905EE).

| CODE | DESCRIPTION | OBSERVATIONS BASED ON: |
|------|---|---|
| 00 | Surface of Ground dry with no appreciable amount of dust or loose sand. | Representative area which approximates the following: (1) Convenient and permanent access. (2) Not affected by paved areas. (3) 100 yards diameter. (4) Elevation within 100 feet of station elevation. (5) Same general topographical structure and vegetation as surrounding area. |
| 01 | Surface of ground moist. | |
| 02 | Surface or ground wet (Puddles on surface). | |
| 03 | Surface of ground frozen to at least several inches. | Representative cleared ground which approximates the following: (1) Part of representative area. (2) More than 50 square feet. (3) Level. (4) Soil typical of country. (5) Preferably grass covered (kept free of overgrowth, but surface layer of soil undisturbed). |
| 04 | Glaze or ice on ground but no snow or melting snow. | |
| 05 | Snow or melting snow covering less than one-half of the ground. | |
| 06 | Snow or melting snow covering more than one-half the ground. | |
| 07 | Snow or melting snow, covering ground completely. | |
| 08 | Loose dry snow, dust, or sand covering more than one-half but not all the ground. | |
| 09 | Loose dry snow, dust, or sand covering the ground completely. | |

Table 5.4 (Added) NATO Airfield Weather Color Code.

| USAFE Weather Color Code | Encode and Disseminate as: | Ceiling Equal To or More Than (5/8 or more cumulative coverage): | Prevailing Visibility Equal To or More Than: |
|---------------------------------|-----------------------------------|---|---|
| BLUE | BLU | 2500 feet | 8000 meters |
| WHITE | WHT | 1500 feet | 5000 meters |
| GREEN | GRN | 700 feet | 3700 meters |
| YELLOW | YLO | 300 feet | 1600 meters |
| AMBER | AMB | 200 feet | 0800 meters |
| RED | RED | Less than 200 feet | Less than 0800 meters |
| BLACK | BLACK | Airfield not useable for reasons other than ceiling or visibility | |

7.3.1. Air Force Weather-Europe organizations will use 5000 meters instead of 4800 meters in all visibility encoding and reporting requirements.

7.3.3.3.1. Air Force Weather-Europe organizations will use 5000 meters or less.

7.3.4. Air Force Weather-Europe organizations will use 5000 meters or less.

7.3.5.1. Air Force Weather-Europe organizations will use 5000 meters or less.

14.6.2.1.3. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or PIREP) encode the actual distance using nautical miles.

18.4.5. FMQ-19 system administrators will replace 4800 meters with 5000 meters in the configuration tables to the maximum extent possible.

Table 25.1. Augmentable Parameters.

| |
|--|
| Body of Observation |
| Visibility: Values < 400 meters (if required) |

27.5.2.3.1. Air Force Weather-Europe organizations will report the total snow depth on the ground (4-group) in the 00, 06, 12, and 18 UTC observations whenever there is more than a trace of snow on the ground, regardless if any precipitation has occurred in the previous 6 hours. If deployed and the supported customer requires it, code the 4-group in the 00, 03, 06, 09, 12, 15, 18, and 21 UTC observations.

27.5.2.4. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or PIREP) encode the actual distance using nautical miles.

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

Allied Weather Publication 4A (AWP), *NATO Meteorological Codes Manual*

Abbreviations and Acronyms

appp—Three-hourly pressure tendency and amount of change

AOS—Automated Observing System

AWP—Allied Weather Publication

CB—Cumulonimbus

CBMAM—Cumulonimbus Mammatus

CONTRAILS—Condensation Trails

DoD—Department of Defense

EGUL—RAF Lakenheath, United Kingdom

EGUN—RAF Mildenhall, United Kingdom

EGVA—RAF Fairford, United Kingdom

ETAD—Spangdahlem AB, Germany

ETAR—Ramstein AB, Germany

ETEU—Giebelstadt, Germany

ETIC—Grafenwoehr, Germany

ETIK—Illesheim, Germany

ETOR—Coleman Army Airfield, Germany

ETOU—Wiesbaden, Germany

FLIP—Flight Information Publication

FMQ—Fixed Meteorological Equipment

KQDG—Adana Incirlik AB, Turkey

LIYW—Aviano AB, Italy

METAR—Meteorological Aviation Report

NATO—North Atlantic Treaty Organization

N-TFS—New-Tactical Forecast System

OWS—Operational Weather Squadron

PIREP—Pilot Report

RCR—Runway Condition Report

SPECI—Special

TCU—Towering Cumulus

TS—Thunderstorm

TWR—Tower

USAFE—United States Air Forces in Europe

USAREUR—United States Army Europe

UTC—Universal Time Coordinated

VIS—Visibility

Table A2.1 Table of SPECI Criteria

| Remark Number | Criteria | Pertinent Data | Manual | Automated | Augmented |
|---------------|-----------------------------------|---|--------|-----------|-----------|
| 1 | (1) 3 miles (4800 meters). | Air Force Weather-Europe organizations will use 5000 meters. | X | X | X |
| 17 | Wind Speed | The maximum wind speed increases by 10 knots or more since the last METAR or SPECI, and the predominant wind speed or gusts exceed 25 knots. (NOTE: This requirement enables the USAFE Operational Weather Squadron (OWS) to conduct a more effective met watch). | X | | X |

Table A3.1. Manual, Automated, and Plain Language Remarks/Additive Data.

| Remark Number | When Condition Observed is a | Enter in Remarks Section | Manual | Automated | Augmented |
|---------------|------------------------------|--|--------|-----------|-----------|
| 2 | Tornadic Activity | If the azimuth and distance of the funnel cloud, tornado or waterspout in progress can be accurately determined (e.g. by radar), encode the actual distance; in all cases encode using nautical miles. | X | | X |
| 4 | Peak Wind | Air Force Weather-Europe deployed or fixed-base observing stations, that cannot provide AOS access to the USAFE OWS and also have the ability to determine peak wind will append a peak wind remark to all METAR observations, regardless of speed. In the case of multiple occurrences of the peak wind during the hour, report the first occurrence. Encode a "calm" peak wind as "PK WND 00000/00." | X | | X |

| Remark Number | When Condition Observed is a | Enter in Remarks Section | Manual | Automated | Augmented |
|---------------|---------------------------------------|---|--------|-----------|-----------|
| 6 | Tower or Surface Visibility | Do not report tower visibility obtained from non-DoD controllers as prevailing visibility. Determine if controllers are providing prevailing visibility or sector visibility and encode appropriately e.g. TWR VIS 0400 or TWR VIS SE 0400. | X | | X |
| 7 | Variable Prevailing Visibility | Air Force Weather-Europe organizations will use 5000 meters. | X | X | X |
| 8 | Sector Visibility | Air Force Weather-Europe organizations will use 5000 meters. | X | | X |
| 10 | Lightning | Manual Units. If the azimuth and distance of the phenomena can be accurately determined (e.g. by radar, lightning detection system or PIREP) encode the actual distance using nautical miles. | X | | X |
| 13 | Thunderstorm Location | If the azimuth and distance of the TS can be accurately determined (e.g. by radar, lightning detection system or PIREP), encode the actual distance; in all cases encode using nautical miles. | X | | X |
| 19 | Significant Cloud Types | If the azimuth and distance of the clouds can be accurately determined (e.g. by radar), encode the actual distance; in all cases encode using nautical miles. | | | |
| 25 | Other Significant Information | Air Force Weather-Europe organizations will not report CONTRAILS. | | | |
| 28 | 24-Hour Precipitation Amount | Air Force Weather-Europe organizations will report this group at 0600 UTC. | X | X | X |

| Remark Number | When Condition Observed is a | Enter in Remarks Section | Manual | Automated | Augmented |
|---------------|--|--|--------|-----------|-----------|
| 29 | Snow Depth on Ground | Air Force Weather-Europe organizations will report the total snow depth on the ground (4-group) in the 00, 06, 12, and 18 UTC observations whenever there is more than a trace of snow on the ground, regardless if any precipitation has occurred in the previous 6 hours. If deployed and the supported customer requires it, code the 4-group in the 00, 03, 06, 09, 12, 15, 18, and 21 UTC observations. | X | | X |
| 29.1 | (Added) State Of Ground (905EE) | If required by locally supported agencies, Air Force Weather-Europe organizations will report this group at 00, 06, 12, and 18 UTC. See Table 5.4 (Added) for a breakdown of the code. | X | | X |
| 31 | 6-Hour Maximum Temperature | Air Force Weather-Europe organizations will not report this group. | | | |
| 32 | 6-Hour Minimum Temperature | Air Force Weather-Europe organizations will not report this group. | | | |
| 37 | (2) FIRST | Air Force Weather-Europe organizations will append this remark on the first observation. | X | | |
| 38 | NATO Color Codes | Use the Airfield Weather Color Code described in Allied Weather Publication 4A (AWP), <i>NATO Meteorological Codes Manual</i> , and in Table 5.4 (Added) to determine the landing status of an airfield. Enter the ceiling and visibility code of the airfield as the last entry in Column 13, except when an RCR or the term "LAST" is appended to the observation. Disseminate this remark locally only if required by locally supported agencies. (NOTE: This requirement is mandatory for the following locations: EGUL, EGVA, EGUN, ETAD, ETAR, LIYW, KQDG, ETIK, ETOU, ETIC, ETEU, and ETOR). | X | | X |

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