*BY ORDER OF THE COMMANDER*
*97TH AIR MOBILITY WING*

*ALTUS AIR FORCE BASE*
*INSTRUCTION 15-101*

*15 JUNE 2021*

*Weather*

*WEATHER SUPPORT*

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This instruction implements Air Force Policy Directive (AFPD) 15-1, Air Force Weather Operations. It establishes responsibilities and weather support procedures. It provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather supported services; dissemination of information; and specialized and reciprocal support. This publication applies to units assigned to the 97th Air Mobility Wing (97 AMW) and subordinate units, and all other tenant units assigned to, or supported by Altus Air Force Base (AAFB). This publication applies to Air National Guard (ANG) and Air Force Reserve Command (AFRC) units stationed at AAFB. Ensure that all records created as a result of processes prescribed in this publication are maintained and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Form 847s from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. No waivers may be granted for any part of the publication. See **Attachment 1** for a glossary of references and supporting information.

***SUMMARY OF CHANGES***

This revision addresses changes to watches, warnings and advisory responsibilities IAW AFMAN 15-129. There are changes to notification procedures and numerous administrative updates. 1) Section 1.3.2. 97 OSS/OSW issues the Terminal Aerodrome Forecast (TAF). 2) Section 2.2.1. The WF operates Monday through Friday from 0000L Monday morning through last land before airfield closure. 3) Section 2.3.1 Stand-by technician may issue LTG Watch/Warning via Stand-by laptop at home. 4) Section 3.3.1-Table 3.3. OMITED. 5) Table 4.1. WF in charge of terminal forecast. 6) Section 4.3. Added Daily Flyer's Brief. 7) Strong Wind Warnings will be coordinated during airfield closure. 8) Section 7.11.2. ICEMAN criteria added.

## 1. General.

1.1. The 97th Operations Support Squadron (97 OSS) Weather Flight (WF) provides or arranges weather services and support to the 97th Air Mobility Wing (AMW) and other associate units assigned to Altus Air Force Base (AAFB). The WF is the OPR for all weather services for AAFB. This instruction establishes requirements and outlines duties and responsibilities of the WF and for reciprocal support requirements with other AAFB agencies.

1.2. Implementation. This instruction covers daily operations to include exercise and contingency operations. Unless superseded by Emergency War Orders, this instruction will be followed during wartime operations.

1.3. Concept of Operations. The WF is the single point of contact for weather information and will provide or arrange all weather services for units assigned to AAFB. The WF leverages the products of the 26th Operational Weather Squadron (26 OWS) for Meteorological Watch (METWATCH), resource protection, and flight weather briefing services.

1.3.1. Delineation of Duties. Weather duties are solely the responsibility of the WF and the WF is the focal point for all weather support at AAFB.

1.3.2. Airfield Operating Hours. During airfield operating hours, the WF provides weather observations, “eyes-forward” support, Mission Weather Products (MWPs), METWATCH, Mission Watch (MISSIONWATCH), Terminal Aerodrome Forecasts (TAFs), flight weather briefings, staff weather services, climatological data, observed/forecasted Warnings, Watches and Advisories (WWAs), Pilot-to-Metro-Service (PMSV) and resource protection.

1.3.3. Airfield Closure Hours. During hours of airfield closure, weather services are provided by the WF's stand-by forecaster IAW AFI 15-129, *Air and Space Weather Operations*. At a minimum, services provided include METWATCH, resource protection in the form of forecasted watches (excluding lightning watch), observed advisories and flight weather briefing support. During hours of closure, the WF will have a technician on-call to provide weather support for severe weather events, forecasted WWAs, operational/contingency missions or any other resource protection issues.

1.3.4. Contact Information. The physical location of the WF is 603 E Avenue, Bldg 185, Altus AFB, OK 73523. The official unit mailing address is 101 S. 6th Street, Altus AFB, OK 73523. The weather technician is available at DSN 866-7522 or commercial (580) 481-7522; Flight Chief: DSN 866-6837 or commercial (580) 481-6837; Flight Commander: DSN 866-5896 or commercial (580) 481-5896; FAX: DSN 866-7862 or commercial (580) 481-7862 and e-mail **97oss.osw@us.af.mil**.

1.4. Duty Priorities. The WF duty priorities are outlined in **Table 1** These were developed IAW AFMAN 15-129, *Air and Space Weather Operations*. These priorities exist to balance limited manning and mission critical tasks. Duty priorities focus efforts during peak work periods prone to task saturation and priority conflicts. Weather technicians will use sound judgment when complying with these duty priorities, especially where there is imminent danger to life and property.

**Table 1. WF Duty Priorities.**

| Priority | Duties |
|---|---|
| 1 | Perform Emergency War Order Taskings |
| 2 | Execute Weather Flight Evacuation/Continuity of Operations Procedures |
| 3 | Respond to Aircraft/Ground Emergencies |
| 4 | Provide Severe Weather Action Procedure (SWAP) Operations |
| 5 | Respond to Pilot-to-Metro Service (PMSV) Contacts |
| 6 | Provide Supervisor of Flying (SOF) support |
| 7 | Provide Resource Protection (Issue Weather Watches, Warnings, and Advisories) |
| 8 | Observe and Disseminate Surface Weather Observations Locally and Longline |
| 9 | Conduct Coordinated METWATCH/MISSIONWATCH and "Eyes Forward" Support |
| 10 | Disseminate Urgent (UUA) Pilot Reports (PIREPS) |
| 11 | Prepare and Disseminate Mission Weather Products (MWPs) |
| 12 | Disseminate Routine (UA) PIREPS Locally and Longline |
| 13 | Provide MWP Briefing Support |
| 14 | Provide Other Weather Products, Information, and Briefings |
| 15 | Accomplish Weather Function Training |
| 16 | Accomplish Administrative Tasks |

1.5. Assumption of Duties. During significant outages and evacuation of the 26 OWS facilities, responsibility for the AAFB transient flight briefings will transfer to the 97 OSS/OSW until back-up support is assumed by another Characterization Unit (CU).

1.6. Alternate Operating Location (AOL)/Continuity of Operations Procedures (COOP). The WF maintains an AOL to continually provide weather support requirements when the primary duty location (weather station) is evacuated; however, the mission essential WF personnel will NOT evacuate during exercises and will be available to provide continued support under such conditions. Should conditions warrant the WF's evacuation of the primary duty location, the 26 OWS will assume all responsibilities for WWAs, TAFs, and mission weather support briefings until such time the WF can reestablish support capabilities.

1.6.1. Location. The designated AOL is the 2nd Floor Conference/Training room within the Air Traffic Control (ATC) Tower (Bldg 525). To gain access to the ATC Tower, WF personnel will have a four digit pin assigned to them by ATC. This access does not include access to the control tower room on the top floor. WF personnel will be removed from the cipher lock operating system for permanent change of station orders and deployments/Temporary Duty Assignments over 60 days.

1.6.2. Communications. The AOL is equipped with Local Area Network (LAN) communications that mirror the primary WF duty location. HOT KEYS on the telephone located at the AOL provide immediate connectivity to the ATC Tower, Radar Approach and Control (RAPCON), Supervisor of Flying (SOF), 97 AMW Command Post (CP), and 26 OWS. All WF contact numbers are identical to primary WF location. Additionally, sufficient communication capabilities and references are available for maintaining the ability to communicate with other supported units.

1.6.3. AOL Operations/COOP. In the event of an evacuation, support limitations will be highly dependent upon the operational status of LAN communications, the Joint Environmental Toolkit (JET) (the WF's primary means of disseminating weather information), and/or the AN/FMQ-19 (the primary Automated Meteorological Observing System (AMOS)).

1.6.3.1. The first priority is for the weather technician to take and disseminate augmented weather observations, assuming JET and AN/FMQ-19 systems are still operational and accessible, within 15 minutes of arriving at the AOL and during redeployment to the primary operating location IAW AFMAN 15-111, *Surface Weather Observations*.

1.6.3.2. If the AN/FMQ-19 sensors or JET system is not operating, or there is no communication interface available to augment the observation, WF personnel will use the Kestrel 5500 and other back-up meteorological equipment or techniques to prepare observations. Additionally, all wind and pressure data will be estimated. The WF will contact ATC Tower, RAPCON, SOF and 26 OWS with the most current observation data as it becomes available.

1.6.3.3. Mission services will revert to the 26 OWS until the WF is able to reestablish mission services at the AOL. Once established, the mission weather technician will liaise with the 26 OWS, CP, SOF, and primary customers to resume mission services locally.

1.6.4. The following limitations to normal weather services can be expected in the event of WF evacuation from the primary duty location:

1.6.4.1. Briefing and/or forecasting services may be curtailed or temporarily suspended until additional manning can be recalled and work priorities allow. Aircrews can expect some briefing delays due to limited resources. They may be referred to the 26 OWS for briefing and planning support.

1.6.4.2. Planning briefs, staff briefs, maintenance briefs and any other previously coordinated mission support services may not be possible to support from the AOL.

1.6.4.3. Use of tactical meteorological equipment and limited access to satellite imagery, lightning detection, and WSR-88D radar equipment will likely degrade the accuracy and timeliness of some forecasts and observations.

1.6.4.4. There is no direct PMSV capability for WF personnel at the AOL. Prior to evacuating the weather station or immediately upon relocating to the AOL, the weather technician will contact the ATC tower and request they monitor the PMSV frequency (239.8 MHz) until the WF can return to the primary duty location. Weather personnel will request that ATC tower personnel pass PMSV contacts to WF personnel via phone patch.

1.6.4.5. **Table 2**. Identifies the weather observing limitations from the AOL.

**Table 2. AOL Observing Limitations.**

| # | Limitation |
|---|---|
| 1 | The ATC tower AOL room has one small window facing the runway. Rapid changes in the weather (i.e., the start and stop of precipitation) may go unnoticed for a short time. |
| 2 | Bldgs, parked aircraft and trees block portions of the sky as well as ground visibility reference markers, especially north through northeast. |
| 3 | There are few adequate ground visibility reference markers beyond 1 ½ miles. This especially degrades determination of nighttime visibility. |

1.7. Operating Assumptions.

1.7.1. The WF assumes adequate resources, communications, personnel, and facilities will be available to execute all AAFB weather support requirements.

1.7.2. The 26 OWS assumes adequate resources, communications, and facilities will be available to execute the identified requirements outlined on the Altus Installation Data Page, and there will be sufficient weather information available on which to continue base weather operations and production.

1.8. Release of Weather Data to Non-Department of Defense (DOD) Agencies and Individuals. No weather data will be released to non-DOD agencies or personnel without the express approval of 97 AMW Public Affairs (97 AMW/PA) and/or 97 AMW Staff Judge Advocate (97 AMW/JA) legal offices. Weather observations and TAFs produced locally are sent to the 557 Weather Wing (WW) for distribution to Non-DOD Agencies.

1.9. Additional Weather Support. Direct all requests for additional weather support to WF leadership (Flight Commander and/or Flight Chief). WF leadership will arrange or direct

services IAW this instruction, Air Education and Training Command (AETC) directives, AFIs, AFMANs and AFPDs.

**2. Weather Flight Operations.**

2.1. WF Responsibilities. The WF is the single point of contact for weather information at AAFB. It provides and/or arranges all strategic, operational and tactical-level weather information for AAFB and its tenant units.

2.1.1. The WF Commander (WF/CC) and/or Flight Chief provides or arranges for all weather support and services to AAFB and its tenant units IAW AFI 15-128.

2.2. Hours of Operation.

2.2.1. The WF will have personnel on duty when supported units are performing their primary operation, duty, or mission and/or when ATC is open and no automated observing system capability exists. The WF operates Monday through Friday from 0000L Monday morning through last land before airfield closure. Additionally, WF personnel will be on duty as required on weekends and holidays to support mission requirements.

2.2.1.1. A WF technician and severe weather lead will be on stand-by from the end of flying Friday through 0000L the first morning of airfield reopening. The stand-by technician is charged with 24-hour METWATCH during weather station closure via the stand-by laptop. The WF is not required to be on duty during airfield closure, unless adverse weather defined in **Table 15** is forecasted or observed.

2.2.1.2. Prior to the weekend the severe weather team will determine the way forward for weekend weather forecasting and continually monitor the atmosphere as needed. When adverse weather is expected, the stand-by technician will report to the office. When Severe Weather Action Procedures (SWAP) (annotated by the + on **Table 15**) have been implemented a member of the WF leadership team will report to the office to provide oversight.

2.2.2. In the event any of the following criteria is met at scheduled closure time, the WF will not close until the criteria is no longer a factor.

2.2.2.1. A watch has been issued by the WF for severe weather or lightning as defined in **Table 15**.

2.2.2.2. AAFB airfield remains open for any other reason.

2.3. Stand-by Weather Technician Recall.

2.3.1. The WF maintains a stand-by weather technician to respond to significant weather events after hours (normally weekends and holidays when no flying is otherwise scheduled). This technician is available to report when a watch is required as defined in **Table 15** or WF leadership notifies him/her of a need (operational, meteorological, or as per 97 AMW/CP) to reopen. Upon recall, the stand-by weather technician will report to the weather station and notify the 97 AMW/CP upon arrival. If a need for a watch or warning is imminent, the stand-by forecaster may issue from home with the stand-by laptop, and then proceed to report to the weather shop.

2.3.2. In the event any of the following criteria occur during airfield closure, the on-call weather technician will be recalled.

2.3.2.1. A watch has been issued by the WF forecaster as defined in **Table 15**.

2.3.2.2. Unscheduled airfield movements require the airfield to open for departures or arrivals.

2.3.2.3. AAFB airfield is required to open for any reason.

2.4. Meteorological Equipment. The WF uses a wide range of equipment to determine the current state of the atmosphere. These critical systems are used continuously to provide customers with the most timely, accurate and relevant weather intelligence possible. Below is the meteorological equipment installed and utilized by the WF

2.4.1. Gibson-Ridge Radar software. The WF is a principal member of the Unit Radar Committee for the NEXRAD Radar Product Generator (RPG) located in Norman, OK. The WF uses the Gibson-Ridge software, which displays graphic and alphanumeric data critical to the timely detection of severe weather (i.e., tornadoes, severe thunderstorms, and heavy precipitation). The radar and RPG are maintained by the 97 OSS/OSAM. If Gibson-Ridge is inoperative, some backup radar data is available over the internet.

2.4.2. AN/FMQ-19 Automated Meteorological Observing System. The AN/FMQ-19 is an integrated system of multiple weather sensors and data automation components that continually measure environmental conditions to provide responsive, reliable, accurate, real-time weather data to all supported agencies. The AN/FMQ-19 measures airfield weather conditions to include, but not limited to wind direction, wind speed, present weather, runway visual range, visibility, cloud heights as well as coverage, temperature, dew point temperature, atmospheric pressure, and lightning detection. Refer to **Attachment 7** for sensor locations.

2.5. Communications Equipment.

2.5.1. Joint Environmental Toolkit (JET) is the Air Force's primary weather communication and dissemination computer system. Air Force Weather units utilize the JET hardware and web based software to transmit data to, and receive data from weather agencies worldwide via the internet.

2.5.1.1. The JET system consists of a dedicated collection sensor device, maintained by the 97th Communications Squadron (97 CS) IAW 24 AF-AF/A3OW-JET Project Management Office Memorandum of Agreement, along with hardware that allows for a connection to the AAFB Airfield Automation System or IDS-5 server located in the RAPCON facility. Theses servers, integrated through the LAN, provide weather information to both the ATC Tower and RAPCON. Additionally, the 26 OWS has the capability to access the JET system in the absence of WF personnel.

2.5.1.2. The WF and 26 OWS use JET locally to disseminate observations, forecasts, and WWAs to the CP, ATC agencies, SOF, Airfield Management Operations (AMOPS), RAPCON and the Maintenance Operations Control Center (MOC). If there are any JET system malfunctions, that office should immediately inform the WF for troubleshooting and repair. If the WF cannot resolve the outage they will refer the problem to the JET Help Desk at the 557 WW and will track the outage daily until the issue is resolved.

2.5.1.3. JET outages can range from partial to catastrophic impacts to AAFB operations. For JET back-up procedures, refer to **paragraph 5.3** for observation dissemination, **paragraph 5.4.3** for TAF dissemination and **paragraph 7.12** for WWA dissemination.

2.5.2. PMSV. The WF is assigned frequency 239.8 MHz for PMSV. See **paragraph 4.6** for more information on PMSV.

2.5.3. Local Area Network (LAN). The LAN is a vital tool for the WF. Information available over the internet and intranet is used to acquire weather data to provide mission essential briefings and forecasts. In the event of LAN failure, all services are significantly degraded.

2.5.4. Telephone. The WF has several multi-line phones in the operations area, with many others nearby that can be used to relay information. Telephones in the operations area also have hotlines to the ATC Tower, RAPCON, SOF, CP, AMOPS and MOC.

2.6. The WF Web Page. Online WF products may be obtained through the 97 AMW SharePoint. **https://usaf.dps.mil/teams/aetc-alt-97og-oss/weather/SitePages/Home.aspx**. Products include, but are not limited to Altus AFB Climatology, 5-day Forecast, and MWPs.

2.7. Facility Power. The WF offices have an independent back-up power generator in the event of a total electrical outage. The generator is maintained by the 97th Civil Engineer Squadron (CES), and 97 CES is the point of contact for associated power or any other Bldg 185 issues.

2.8. WF Limitations.

2.8.1. AN/FMQ-19 Sensor Limitations.

2.8.1.1. The official point of observation for meteorological conditions is the active AN/FMQ-19 sensor. There are a total of four sensors across the airfield with one located at each end of Runway 35L/17L and 35R/17R. It takes readings from a single location--as such it may not always represent conditions through the entire base or along runway approach tracks.

2.8.1.2. The AN/FMQ-19 lacks the capability to detect and report all specified airfield visibility minima criteria specified in **Attachment 2**. The system reports visibility in 1/4 statute mile (SM) increments up to 2 SM and the 1/2 SM increments up to 3 SM.

2.8.1.3. The following conditions may degrade the accuracy of the AN/FMQ-19 sensor readings.

2.8.1.3.1. The AAFB airfield complex is surrounded from the Northwest through South by open irrigated fields causing localized dense fog.

2.8.1.3.2. Grass surrounds all AN/FMQ-19 sensor sites.

2.8.1.3.3. The 35R sensors have a shallow ditch/creek of water that affects visibility/RVR sensors.

2.8.2. Augmentation Limitations.

2.8.2.1. When weather technicians perform augmentation duties from the weather station, the official point of observation is located on the south side of Bldg 185 next

to the back-up rain gauge. See **paragraph 5.2.3** for additional augmentation limitations.

2.8.2.2. When augmenting from the AOL, the official point of observation is around the ATC Tower. Refer to **Table 2** for AOL observing limitations.

2.8.3. The WF has coordinated a Cooperative Weather Watch with AAFB ATC and other appropriate base agencies and is reliant on weather data passed to construct representative weather reports. See **paragraph 5.7** for details on the Cooperative Weather Watch.

2.8.4. Optimum forecast and observing support is dependent on fully operational communication and meteorological sensing equipment.

2.8.5. The AN/FMQ-19 lightning detection system is used to determine the approximate direction and distance of lightning strikes around the airfield complex. Equipment limitations and operational status would limit lightning detection.

2.8.6. Certain services, such as staff briefings and SOF training may not be available without prior coordination, due to manning levels or duty priorities.

**3. Mission Information.**

3.1. General. The WF supports the 97 AMW and its tenant units. In this capacity, the WF is the single point of contact for weather information at AAFB. It provides and/or arranges all strategic, operational and tactical-level weather information for all units assigned to AAFB including three active duty flying units (the 54th Air Refueling Squadron (54 ARS), the 56 Air Refueling Squadron (56 ARS) and the 58th Airlift Squadron (58 AS)) and one AFRC associate unit (the 730th Air Mobility Training Squadron (730 AMTS)). The Mission Statement of the 97 AMW is "We Train Exceptional Mobility Airmen." This includes training pilots and enlisted aircrews of all experience levels and qualifying them for KC-135, KC-46, and C-17 Operations.

3.2. Ground Operations and Weather Sensitivities. Per AFMAN 11-2C-17V3, *C-17 Operations Procedures*; AFMAN 11-2KC-135V3 *KC-135 Operations Procedures*; associated AETC supplements; and Air Force Occupational Safety and Health Standards directives, **Attachment 8** provides guidance on weather sensitivities for the various personnel, training, and operations conducted at AAFB.

3.3. Area of Responsibility. The WF will prepare tailored products to meet the differing needs of all supported agencies. Flying units conduct the majority of their training in areas including, but are not limited to the local flying pattern, a variety of Military Training Routes and high-level routes throughout western Oklahoma, the Texas Panhandle, and northern Texas. Additionally, a variety of air refueling tracks are used throughout the central United States. Figures in **Attachment 6** depict commonly used Air Refueling (AR) tracks, Military Training Routes, and drop zones.

3.4. Weapons Systems and Weather Sensitivities. Instructions, supplements, and Technical Orders provide the guidance on weather sensitivities for the various weapon systems and related programs. As per AFI 11-2C-17V3; AFI 11-2KC-135V3; and AFI 11-202V3 AETC SUP 1; 97 AMW assigned C17s, KC-135s, and KC-46s operate under the weather restrictions outlined in **Attachment 8**.

**4. Mission Services.**

4.1. General. Mission services are administered by the WF in conjunction with the 26 OWS directly relating to the mission of the 97 AMW and its tenant units. This chapter explains AAFB's mission weather support including METWATCH, MISSIONWATCH, Resource Protection, Disaster Support, Forecast Verification, Tactical Decision Aid Support, Mission Weather Products (MWPs), and the respective dissemination processes.

4.1.1. Duty Hours. Mission services are provided Monday through Friday (beginning 0000L Monday through the end of flying Friday). Services are not normally provided when the airfield is closed unless previously coordinated with the 97 OSS leadership.

4.1.2. Meteorological Watch (METWATCH). The WF conduct METWATCH to provide controlled and organized situational awareness of the current and future meteorological situation for AAFB. The WF serves in an "eyes forward" role to collaborate and advise the 26 OWS on current conditions and how they may affect weather products. Upon detecting an un-forecasted change, weather technicians will notify all supported units and begin the process to amend the forecast and/or Mission Weather Products (MWPs).

4.1.3. MISSIONWATCH. The WF will monitor aerospace weather during specific missions focusing on mission-limiting meteorological impacts to ongoing military operations as described in **Table 3**

**Table 3. Meteorological Watch Variations.**

| Type of METWATCH | Missions Watched | Responsible Unit |
|---|---|---|
| Terminal | Operations on AAFB | WF |
| Area | Operations within local flying area and flying training areas | WF |
| Route | Specific route operations designated by the SOF | WF |
| Flight | Specific flight or mission operations (upon request) | WF |

4.2. Mission Weather Products (MWPs). The WF produces a suite of MWPs to include the Mission Execution Forecast (MEF), flight weather briefings, planning weather, 5-Day forecast and DD Form 175-1s. See **Attachment 10** for sample products, formats, delivery methods, and decoding information.

4.2.1. MEF. The primary MWP produced by the WF is the Mission Execution Forecast. The MEF is developed using a constant two-tiered approach of both administrative and operational processes as outlined in AFMAN 15-129. During these processes, WF personnel create the MEF by fusing and tailoring products created by strategic and regional weather centers, as well as information supplied by local units and agencies. The end result is a product designed to provide timely, accurate and relevant weather information to customers. MEFs must be horizontally consistent with, but not necessarily mirror, products issued by the 26 OWS and the 557th Weather Wing. During rapidly changing conditions, the WF will amend the MEF to reflect accurate conditions and brief the customer and/or the SOF, then back-brief 26 OWS if needed. MEFs are developed Monday through Friday to support the 97 AMW flying missions and are available at the forecast counter located in Bldg 185 or electronically on the WF SharePoint page. These briefings are prepared during

the mid-shift the morning of, and updated first thing the next morning with the day shift. The MEF will be amended for mission impacting criteria that are observed or later forecast to decrease to less than, or if below, increase to equal or exceed any of the values outlined in **Table A8.12**.

4.2.2. AAFB Planning Weather. A generated product provided by the WF and is provided for mission planning and training and is NOT amended. This information is issued during swing shift for the second flying day in the future.

4.2.2.1. Local Planning Weather. Weather data is in TAF format to include clouds, visibility, weather, winds, hazards and solar-lunar data. In addition, a two-hour breakdown of forecast maximum temperature, minimum altimeter, and pressure altitude is provided for two hour increments just prior to take-off for morning and evening missions.

4.2.2.2. Air Refueling Routes. General forecast conditions broken down by AR track identifying sky condition at flight level, forecast visibility, winds at several flight levels and whether turbulence, icing and/or thunderstorms are expected on the route. Temperature and temperature deviation are also produced.

4.2.2.3. Low Level Training Routes. General forecast conditions broken down by low level track identifying sky condition at flight level, forecast visibility, hazards on the tracks and whether turbulence, icing and/or thunderstorms are expected on the route.

4.2.2.4. Drop Zones. Weather data is in TAF format to include clouds, visibility, weather, winds, and hazards. In addition, forecast winds/temperatures are provided for surface, flight levels 005, 010, 015, and 030.

4.3. Flyer's Daily Brief. An aircrew mission planning briefing is held Monday through Friday for students from the 54th, 56th, and 58th. It begins at 0830L in the auditorium of BLDG 87. Three products are produced and briefed to students: A satellite image with AR tracks, a 5 Day outlook, and hazard charts from the 26 OWS page.

4.4. Flight Weather Briefings (FWBs). The WF will provide FWBs to all aircrew as duty priorities permit. Aircrews of non-scheduled flights and/or transient aircrews should request FWBs from the WF at least 2 hours prior to brief time. The WF will provide a MEF, DD 175-1 FWB, or verbal briefing to all aircrews, as duty priorities allow.

4.4.1. Non-Scheduled Flights. Aircrews should provide as much advanced notice as possible when requesting FWBs to allow WF personnel adequate time to analyze data, generate forecasts and develop MWPs. Place flight weather briefings on request by calling DSN 866-7522 or Commercial (580) 481-7522.

4.4.2. The 26 OWS will provide FWBs to support flights conducted outside of normal organization operations when ATC is closed and WF personnel are unavailable. FWBs can be requested via phone at Commercial (318) 529-2651/2633/2635/2636 or DSN 331-2651/2633/2635/2636, by FAX (318) 529-2609 or DSN 331-2609 or via webpage **https://26ows.us.af.mil/** and selecting the "Jet- Request a Briefing" link from the drop down menu under the "Flight WX Briefing" tab at the top of the page. FWBs should be submitted with at least 2 hours lead time. Questions on completing the Flight Wx Brief form should be directed to the FWB cell at the numbers above.

4.4.3. The WF technician will enter a FWB request via the 26 OWS webpage when the supported unit provides advanced notification of intent to conduct operations, and the WF is unable to provide MWPs.

4.4.4. The WF will coordinate requests for briefing support with the 26 OWS on larger flying operations when the WF cannot provide MWPs to the supported unit(s) due to manning levels or temporary duty commitments.

4.4.5. Transient Aircrew Services. IAW AFMAN 15-129, transient aircrews requesting support from the WF will receive a briefing or update to an existing briefing form IAW duty priorities. In the event WF is unable to provide transient aircrew support, then the aircrew will be directed to the dedicated Airfield Operations-maintained web based briefing terminal located in the flight planning room in Bldg 185, or access to a computer to schedule a flight weather briefing from the 26 OWS. The WF leadership maintains a Transient Aircrew Weather Support binder located in the flight planning room. This provides detailed contact information and instructions on accessing/navigating the 26 OWS web site. The 26 OWS stands ready to brief any transient aircrew 24 hours-a-day.

4.4.5.1. Tanker Airlift Control Center (TACC) Integrated Flight Management (IFM) Briefings. The WF will update aircrews with take-off weather data and notify 618 AOC (TACC)/XOW if the update includes any of the criteria listed in **Table 4** WF technicians will provide access to meteorological satellite imagery, radar imagery, and other perishable weather data to crews upon request IAW established duty priorities. The WF will consult/coordinate with 618 AOC (TACC)/XOW as required to resolve any aircrew concerns/issues with the mission weather package and will facilitate discussions between aircrew members and 618 AOC (TACC)/XOW to elaborate on weather impacts and/or answer aircrew questions. The 618 AOC (TACC)/XOW is the final authority for weather issues involving AMC sorties/missions.

**Table 4. IFM Standard Mission-Limiting Criteria.**

| Criteria |
|---|
| Ceiling/visibility less than or equal to 200ft/1/2sm (or other published airfield limitations) |
| Dry runway crosswind 25kts or greater |
| Wet runway crosswind 20kts or greater |
| Forecast low-level wind shear for KC-10 operations |
| Observed low-level wind shear for all AMC aircraft |
| Predominant thunderstorms on station |
| Freezing precipitation |
| Moderate (or greater severity) turbulence/icing |
| Forecast or observed volcanic ash on takeoff |

4.4.5.2. Air Combat Command Air Operations Squadron (ACC/AOS) Controlled Missions. If tasked to support launch, alternate, abort and destination bases for ACC AOS-controlled missions, the WF will brief aircrews using ACC AOS/AOSW Controlled Mission Weather products (CMWPs), coordinate deviations from CMWPs

with ACC AOS/AOSW, and debrief arriving aircrews at destination bases and report any deviations from the CMWP (weather not as forecast) to ACC AOS/AOSW.

4.5. Forecast Amendments. Amendment criteria are defined as mission weather thresholds that will impact completion of a mission.

4.5.1. Required Amendments. The thresholds identified in **Table A8.12** are considered to be required amendment criteria from 1 hour prior to takeoff times until the mission is complete. Amendments will be issued as soon as possible IAW duty priorities.

4.5.2. Representative Amendments. Forecasts may be amended at any other time the WF deems it to be unrepresentative of the current or forecast conditions at any location on the MEF.

4.6. Forecast Verification. The WF and 26 OWS conduct post-mission analysis of their forecasts to verify the operational effectiveness of their processes/procedures, which aids in identifying areas of needed improvement and the base-line for the metrics program.

4.6.1. Metrics Programs. Although the WF provides most of the verification data utilized by the 26 OWS, both units maintain separate metrics programs.

4.6.1.1. WF Metrics. Derived from real-time meteorological data, Warning Verification, PIREPS, and aircrew feedbacks, the WF metrics program compiles the information provided into graphical form.

4.6.1.2. 26 OWS Metrics. The 26 OWS verifies WWA times versus false alarm rates. Each month the 26 OWS posts watch metrics onto their web page **https://26ows.us.af.mil/tech_ref/metrics/**.

4.6.2. MWP Reviews. The WF will conduct MWP reviews to improve forecast capabilities and processes. These will be forwarded to AETC/A3OW (Weather Branch) and if warranted to the 26 OWS for inclusion in local training.

4.7. Pilot-to-Metro Service (PMSV). The WF provides weather observations and forecasts to aircrews, while in flight or on the airfield, using the PMSV radio (239.8 MHz) or via phone patch via the CP or ATC tower. By giving weather personnel PIREPs over the PMSV, aircrews enhance situational awareness to atmospheric conditions experienced in data-sparse areas.

4.7.1. When contacted by aircrew on the PMSV, the WF will provide timely, relevant and accurate weather data to include observations, forecasts, and/or WWAs.

4.7.2. During WF extended outages, aircrews may obtain PMSV briefs from the 26 OWS via phone patch by dialing Commercial (318) 529-2651/2633/2635/2636 or DSN 331-2651/2633/2635/2636.

4.7.3. The WF will solicit a PIREP during each PMSV contact with aircrew, and will log it on the PMSV/Reliable Source Log. PIREPs are a tool for aircrews to help the WF better serve them and enhance flight safety.

4.7.4. Outages. The WF will notify ATC personnel of any PMSV outage and request assistance in monitoring frequency 239.8 MHz. Additionally, the WF will contact 97 OSS/OSAA AMOPS to annotate long term outages via Notice to Airmen (NOTAM) until repairs are complete. During WF PMSV outages, aircrews can contact the WF via phone patch at DSN 866-7522, Commercial (580) 481-7522, via the 97 AMW/CP at frequency

349.4 MHz and then phone patch to the WF; or via the ATC tower frequency 254.4 MHz and then phone patch to the WF. Once PMSV service is restored, the WF technician will notify the back-up agency that the WF assumes full PMSV support and AMOPS to cancel the NOTAM.

4.8. Space Weather. The WF provides space weather impacts on each MWP focusing on communications and navigation systems to include High Frequency (HF), Ultra High Frequency (UHF), and Global Positioning Systems (GPS).

4.8.1. Space weather products are produced and available directly from the Air Force Weather Web Services (AFW-WEBS) page. Sample space weather products and descriptions are found in **Attachment 11**.

4.8.2. The WF will submit any reported space weather impacts through AFW-WEBS. For more information about space weather products, please contact the WF.

4.8.3. Local Space Weather Criteria. The criteria listed in Tables **5** through **8** are used in the MEF and/or DD Form 175-1 to determine space weather impacts to operations.

**Table 5. Local Space Weather Criteria (HF-Impacts).**

| Criterion | No Impact | Marginal | High |
|---|---|---|---|
| Frequency (Block 15 on 175-1) Global/Regional 6 Hr Forecast of Ionospheric Conditions Impacting HF Propagation. | No color shading indicates no impact | HF Impacts to frequencies up to 20 MHz | Impacts to the entire HF spectrum (up to 30 MHz) |
| Products issued four times daily and available on AFW-WEBS. Identifies location where space weather conditions are expected to degrade HF communications and other HF applications. | | | |

**Table 6. Local Space Weather Criteria (UHF-Impacts).**

| Criterion | No Impact | Marginal | High |
|---|---|---|---|
| Frequency (Block 15 on 175-1) Global/Regional 6 Hr Forecast of Ionospheric Conditions Impacting UHF Radio Propagation/UHF SATCOM/*UHF SATCOM Scintillation. | No color shading indicates no impact | UHF Impacts experiencing 4-10 dB fade | UHF Impacts > 10 dB fade |
| | *Light or weak Impacts depicted green for 1-4 dB fade | | |
| Products issued four times daily and available on AFW-WEBS. Identifies location where space weather conditions are expected to degrade UHF SATCOM. | | | |

**Table 7. Local Space Weather Criteria (GPS-Impacts).**

| CRITERION | No Impact | Marginal | High |
|---|---|---|---|
| GPS (Block 15 on 175-1)<br>Estimated GPS Single-Frequency GPS Error Map | Colors in the 0 - 15 range | Colors in the 15 - 50 range | Colors in the 50 - 75 range |
| GPS maps are issued every hour on AFW-WEBS. Identifies estimates of current single-frequency GPS accuracy based on calculations that take into account ionospheric-induced errors. This product is not valid for Dual Frequency GPS receivers. White on this product (values greater than 75) indicates no usable GPS navigation expected. | | | |

**Table 8. Local Space Weather Criteria (High-Altitude Radiation Dosage).**

| Criterion | No Effects | Marginal | Severe |
|---|---|---|---|
| Radiation (Block 15 on 175-1)<br>High Altitude Radiation Dosage Charts | 0.0 – 9.9 mrem/hr | 10.0 – 99.9 mrem/hr | 100.0 or greater mrem/hr |
| Products/forecasts issued four times daily via AFW-WEBS based on cosmic radiation measurements. Quantifies the global level of radiation dosage at high altitudes based on background cosmic radiation. Followed up by faxed notification during high-energy particle events. | | | |

4.8.4. Space Weather Product Dissemination. Space weather product information and dissemination is described in **Table 9**.

**Table 9. Space Weather Product Dissemination.**

| Product Source | Disseminated By | Update Frequency |
|---|---|---|
| AFW-WEBS Space Weather Web Site | 2 WS | Instant |
| MEF/175-1 | WF Technician | Upon Request |
| WF | WF Technician | Upon Request/As Needed |

4.9. Disaster Support. The WF provides support to the 97 AMW for disaster and contingency operations by:

4.9.1. Assisting the installation commander and Emergency Management (EM) personnel in thoroughly educating installation agencies on purpose, applicability and operating procedures related to the warning and watch system to include various severe weather threats to the local area.

4.9.2. Implementing Severe Weather Action Procedures as required.

4.9.3. Performing formal forecast reviews of severe weather events according to *AFMAN 15-129, Air and Space Weather Operations.*

4.9.4. Providing actual experienced severe weather conditions validity of forecast at the time of occurrence to include any watches or warnings issued and operational status of meteorological equipment at the time of event to the CP in preparation of OPREP-3 reporting IAW AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*.

4.9.5. Conducting and documenting periodic severe weather refresher seminars for WF personnel.

4.9.6. Providing injects in the Installation Emergency Management Plan 10-2 (IEMP 10-2).

4.9.7. Providing representation to the 97 AMW Wing Inspection Team and Crisis Action Team (CAT).

4.10. CBRNE Support. Air Force Weather forces serve as Weather Subject Matter Expert to CBRNE operations IAW roles and responsibilities outlined in AFI 15-128, AFI 10-2501, and AFMAN 10-2503, *Operations in a Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) Environment*. The WF staff weather element supports CBRNE operations by:

4.10.1. Routinely meeting with AAFB EM, Fire Emergency Services, and Base Environmental Element to achieve appropriate mission immersion.

4.10.2. Getting familiar with the CBRNE plume models utilized by the Emergency Support Function (ESFs), their tactical decision aid outputs and uses in installation commanders' decision cycles.

4.10.3. Understanding the variety of possible weather input options within each model for each type of C, B, R, N and E event.

4.10.4. Recommending and providing the most appropriate weather data type for EM and other ESFs to use to run their chosen CBRNE model to assess a real-time event which has occurred at a specific location and time. The staff weather element's familiarity with EM's and other ESF's CBRNE models and associated weather input parameters/data types will help in determining the optimal weather data type for the chosen CBRNE model.

4.10.5. Providing a region-specific model data recommendation consistent with the 26 OWS model for use in transport models. Historical climatological data is not recommended except for training or long-term planning where "canned" scenarios are being used.

4.10.6. Making sure that weather technicians provide requested observations and forecasts that are representative of the location/time of the CBRNE event.

4.10.7. Working closely with EM or other ESF functions to ensure the supported commander gets a consistent picture.

4.10.8. Obtaining/providing Chemical Downwind Messages (CDMs)/Effective Downwind Messages (EDMs) from the 26 OWS for Emergency Management Function or the 557 WW (AFW-WEBS). CDMs and EDMs are available via the 26 OWS webpage accessible by the WF. In the event the information is not available, the WF retains the ability to calculate and construct CDM messages and will provide a wind forecast in lieu of the EDM.

4.11. Bioenvironmental Engineering (BE) Support/Information.

4.11.1. The WF provides weather notifications of extreme thermal conditions IAW AFI 48-151, *Thermal Injury Prevention Program* and AFI 11-418, *Operations Supervision*. This is accomplished principally through the determination and application of thermal indices (i.e., Index of Thermal Stress (ITS)) and the wind-chill index and associated caution and danger zones. Refer to AFI 48-151 Table A3.1/A3.2 for ITS Reference Values and **Table 3.4** for Equivalent Chill Temperature.

4.11.2. The WF does not measure Wet Bulb Globe Temperatures or compute index measurements. These measurements are completed by the BE.

**5. Airfield Services.**

5.1. Airfield Services include those actions and areas that affect AAFB. Airfield Services include weather observing, TAF production, resource protection (WWAs), and PMSV support. Observing services include providing "Eyes Forward" support. "Eyes Forward" support is defined as WF personnel relaying all significant, time-sensitive meteorological information to the other organizations.

5.2. Weather Observations. Observations will be taken and disseminated IAW AFMAN 15-111. The AN/FMQ-19 is the AF standard system for automated observations, with WF technicians augmenting the system when required. While in automated mode, the AN/FMQ-19 continually senses and reports the following weather elements: wind, visibility, precipitation/obstructions to vision, cloud height, sky cover, temperature, dew point, altimeter (ALSTG), and lightning. Note: The FMQ-19 reports weather elements over a more limited area, concentrating on the approach end of the active runway. The AN/FMQ-19 takes readings every minute, and uses time averaging of elements for more consistent observations.

5.2.1. Types of Observations. There are three types of observations: Aviation Routine Weather Report (METAR), Special (SPECI) Observations, and Local (LOCAL) Observations. All observations are taken from the official observation point.

5.2.1.1. METAR (Routine Meteorological Observation Report). A METAR is a regularly scheduled observation taken and disseminated every hour at 55-59 minutes after the hour. A METAR observation may also include special weather criteria that were met during the given observing period. METAR observations are disseminated locally and longline. Longline is the process of submitting an observation through JET and eventually to non-DoD sources (i.e. NWS, ADDS, .EDU sites, etc.).

5.2.1.2. SPECI (Special Observation). A SPECI is an unscheduled observation taken and disseminated when any special criteria in AFMAN 15-111 or local criteria listed in **Attachment 2** has been observed. SPECI reports will be prepared and transmitted after the last relevant criteria is observed and will be disseminated locally and longline. Longline is the process of submitting an observation through JET and eventually to non-DoD sources (i.e. NWS, ADDS, .EDU sites, etc.).

5.2.1.3. LOCAL (Local Observation). A LOCAL is an unscheduled observation, reported to the nearest minute during back-up of the AMOS pressure sensor. LOCAL altimeter setting observations are taken at an interval not to exceed 35 minutes when there has been a change of 0.01 inch Hg (0.3 hPa) or more since the last ALSTG value.

A METAR or SPECI taken within the established time interval will meet this requirement. LOCALs are taken and disseminated to ATC agencies as soon as possible after the relevant altimeter setting change is observed.

5.2.2. Official Point of Observation. The official point of observation is the active AN/FMQ-19 sensor. When augmenting the AN/FMQ-19, the point of observation is located on the south side of Bldg 185 next to the back-up rain gauge. The cab in the weather station may be used by weather personnel to determine ceiling and visibility elements. When augmenting from the AOL, the official point of observation is around the ATC tower.

5.2.3. Backup Observation Site Limitations. The official point of observation located on the south side of Bldg 185 near the rain gauge does not allow a clear, unobstructed 360 degree view around the runway complex. The technician's view from southwest through north is obstructed by trees, Bldgs and hangars. The obstructions interfere with accurate visibility measurements and may obscure features moving in from the stated directions. Aircraft engine noise may impede the forecaster's ability to hear thunder. High intensity lights located around the airfield complex and security lights on nearby Bldgs hinder the technician's ability to determine sky condition and visibility at night. For AOL observing limitations refer to **Table 2**.

5.2.4. AN/FMQ-19 Operations. The WF will operate the AN/FMQ-19 in full automated mode to provide the official METAR and SPECI observations for AAFB, except when augmentation is required IAW AFMAN 15-111 and/or this publication.

5.2.4.1. Augmentation. Augmentation is the process of having position-qualified weather technicians manually add or edit data to observations generated by a properly sited AMOS such as the AN/FMQ-19. The two augmentation processes are supplementing and back-up.

5.2.4.1.1. Supplementing. Supplementing is a method of manually adding meteorological information to an automated observation that is beyond the capability of the AN/FMQ-19 to detect and/or report.

5.2.4.1.1.1. Technicians will perform a Basic Weather Watch (BWW) and be prepared to supplement observations when the airfield is open and the conditions in **Table 10** are observed and/or are forecast to occur within 1 hour.

5.2.4.1.1.2. Technicians will be ready to perform a BWW and be prepared to supplement observations when the airfield is open and the conditions listed below are occurring or expected to occur within 1 hour.

5.2.4.1.1.2.1. Ceiling forms below or decreases to less than 1,500 feet.

5.2.4.1.1.2.2. Ceiling dissipates, or increases to equal or exceed 1,500 feet.

5.2.4.1.1.2.3. Visibility decreases to less than 3 statute miles.

5.2.4.1.1.2.4. Visibility increases to equal or exceed 3 statute miles.

5.2.4.1.1.2.5. Precipitation (any form).

5.2.4.1.1.2.6. Thunderstorms.

5.2.4.1.1.2.7. Fog or Mist.

5.2.4.1.1.2.8. During mandatory back-up of AMOS.

5.2.4.1.1.2.9. Any other conditions or changes in the weather that will require a SPECI observation, and/or have the potential to limit mission capabilities.

5.2.4.1.1.3. Technicians are required to log on to JET, place JET in augment mode, and be prepared to supplement whenever a watch or warning has been issued for tornadic activity.

5.2.4.1.1.4. Technicians will only supplement the automated weather observation during airfield closure hours when SWAP has been implemented and it is necessary to provide the eyes forward function or whenever a watch or warning has been issued for tornadic activity.

5.2.4.1.1.5. Technicians always take Operational Risk Management into consideration when deciding whether or not to supplement observations. Safety of the technician always comes first and safety of flight and resource protection is paramount.

5.2.4.1.1.6. Immediate reporting of a tornado or funnel cloud takes precedence over other phenomena.

**Table 10. Mandatory Supplementary Weather Conditions.**

| Weather Conditions |
|---|
| Tornado (+FC) / Funnel Cloud (FC) / Waterspout (+FC) |
| Hail (GR) (greater than or equal to 1/4” in diameter) |
| Volcanic Ash (VA) |
| Ice Pellets (IP) |
| Snow Depth (4/sss) (only during controlled airfield hours) |
| Visibility <1/4 mile |
| Tower Visibility (Report in remarks if Tower visibility is less than 4 miles and differs from surface visibility by at least one category.) |

5.2.4.1.2. Back-up. Back-up is the method of manually providing meteorological data and/or dissemination to an AN/FMQ-19 observation when the primary automated method is not operational or unavailable due to sensor and/or communication failure. Technicians use guidance in AFMAN 15-111, Para. 3.4 and **Attachment 2** and **Attachment 3** to determine which observation elements to back-up.

5.2.4.1.2.1. There is no requirement to back-up the system/sensor when the airfield is closed. However, the technician will back-up the system/sensor (as needed) when recalled to perform SWAP operations.

5.2.4.1.2.2. When an AN/FMQ-19 sensor is no longer working properly, the technician will ensure supported ATC agencies are notified of all outages prior

to contacting any maintenance agency. Once notifications are made, technicians will make every attempt to report the outage and perform back-up on logged out sensor(s) until fixed. The technician will enter the corrected or missing element(s) in the METAR/SPECI.

5.2.4.1.2.3. Altimeter Updates. When backing up the AN/FMQ-19 pressure sensor, ALSTG update LOCALs will be taken at an interval not to exceed 35 minutes when there has been a change of 0.01 inch Hg (0.3 hPa) or more since the last reported ALSTG value. A METAR or SPECI taken within the established time interval meets this requirement. LOCALs are taken and disseminated to ATC agencies as soon as possible after the relevant altimeter setting change is observed.

5.2.4.2. The technician will maintain situational awareness of local weather conditions and the AN/FMQ-19 observations during airfield operating hours. Weather technicians will also monitor area observation and forecast products to keep abreast of changes expected to affect AAFB.

5.2.5. Weather Watch. The AN/FMQ-19 system performs a Continuous Weather Watch. When the FMQ-19 requires augmentation, WF personnel will conduct a BWW (see **paragraph 5.6**).

5.3. Back-up Dissemination Procedures. During JET or communications outages, the WF will disseminate weather observations locally to agencies shown in **Table 11** (in order), and record dissemination on Local Dissemination Log. During extended outages when JET is down, the WF will send observations longline via the AFW-WEBS website. If the network is down or the webpage is not working, technicians will call another weather unit or the 26 OWS for assistance in transmitting products longline via AFW-WEBS. "Eyes-forward" support will also continue via telephone.

**Table 11. WF Voice Dissemination Listing.**

| Order of Dissemination | Phone |
|---|---|
| Command Post | DSN 866-6313/Commercial (580) 481-6313 |
| SOF | DSN 866-7490/Commercial (580) 481-7490 |
| ATC Tower | DSN 866-3386/Commercial (580) 481-3386 |
| RAPCON | DSN 866-3378/Commercial (580) 481-6408 |
| 26 OWS | DSN 331-2619/Commercial (318) 529-2619 |

5.4. Terminal Aerodrome Forecasts (TAF).

5.4.1. AAFB TAFs are produced and disseminated by the 97 OSS WF. For TAF format, specification, and amendment criteria, see **Attachment 4**. TAFs are issued at the times outlined in this instruction.

5.4.2. TAFs are issued at the following times when the airfield is open and in conjunction with MEF production times: 0900 Zulu (Z) [(0400L Central Daylight Time (CDT)/0300L Central Standard Time (CST)]; 1700Z (1200L CDT/1100L CST); and 0100Z (2000L CDT/1900L CST).

5.4.3. The 97 OSS WF disseminates the TAF locally and longline utilizing JET; however, forecast information is available via the internet through various weather-related websites. Once the TAF has been disseminated, it is viewable by all JET users on AAFB. In case of WF JET malfunction, the WF will disseminate via AFW-Webs or contact the 26 OWS to transmit TAF. If the event is a widespread JET failure, the WF will email, fax, or phone the TAF to ATC agencies (Tower and RAPCON).

5.4.4. TAF amendments are described in **Attachment 4**. Amendment criteria are based on airfield minima and conditions that meet WWA criteria. The Installations Data Page (IDP), with further information on the TAF, can be found at **26ows.us.af.mil**.

5.4.5. The AAFB MEF is considered the official flight planning forecast for the 97 AMW.

5.5. Watches, Warnings, and Advisories (WWA). The WF performs resource protection for AAFB. Resource protection is detailed in **Chapter 7**.

5.6. Basic Weather Watch (BWW). A BWW will be conducted when the airfield is open and during periods when any of the mandatory augmentation of the AN/FMQ-19 is required. Due to these other weather duties, weather technicians on duty may not detect and report all weather changes as they occur. The BWW observing program has been implemented to establish the minimum requirements needed to ensure the proper level of weather watch is maintained. During a BWW, weather technicians will recheck weather conditions, at intervals not to exceed 20 minutes since the last observation/recheck, to determine the need for a SPECI observation, when any of the conditions listed in Tables **12** through **14** are observed to be occurring or are forecast to occur within 1 hour.

**Table 12. BWW Ceiling Criteria.**

| **Note:** The ceiling forms or dissipates below, decreases to less than, or if below, increases to equal or exceed: | | | |
|---|---|---|---|
| Criteria | Reference | Criteria | Reference |
| 7,000 feet | Local Inflight Guide for Duke Beam | 700 feet | AFMAN 15-111 |
| 5,000 feet | AFMAN 11-2C-17v3 | 600 feet | AFMAN 15-111; AFMAN 112C-17v3 |
| 3,000 feet | AFMAN 15-111 | 500 feet | AFMAN 15-111; DoD Flip |
| 2,500 feet | AAFBI 13-204V3 | 400 feet | DoD Flip |
| 2,000 feet | AFMAN 15-111; AAFBI 13-204v3; AFMAN 11-202v3 | 300 feet | AFMAN 15-111; AFMAN 11-2KC-135v3; AFMAN 11-2C-17v3 |
| 1,500 feet | AFMAN 15-111; AAFBI 13-204v3 | 200 feet | AFMAN 15-111; DoD FLIP; AFMAN 112C-17v3 |
| 1,000 feet | AFMAN 15-111; AAFBI 13-204v3; AFMAN 11-2KC135v3 | 100 feet | AAFBI 13-204v3 |

| | | | |
|---|---|---|---|
| 800 feet | AFMAN 15-111; AAFBI 13-204v3; DoD FLIP | | |

**Table 13. BWW Visibility Criteria.**

| **Note:** Surface visibility as reported in the body of the report decreases to less than or, if below, increases to equal or exceed: | | | |
|---|---|---|---|
| Criteria | Reference | Criteria | Reference |
| 3 miles (4800 meters) | AFMAN 15-111; AAFBI 13-204V3 | 1 1/8 miles (1800 meters) | DoD FLIP |
| 2 1/2 miles (4000 meters) | DoD FLIP | 7/8 mile (1400 meters) | DoD FLIP |
| 2 miles (3200 meters) | AFMAN 15-111; DoD FLIP; AAFBI 13-204V3; AFMAN 11-2KC-135V3; AFMAN 11-2C-17V3 | 3/4 mile (1200 meters) | AFMAN 15-111; DoD FLIP; AFMAN 11-2KC-135V3; AFMAN 11-2C-17V3 |
| 1 1/2 miles (2400 meters) | AFMAN 15-111; DoD FLIP | 5/8 mile (1000 meters) | DoD FLIP |
| 1 3/8 miles (2200 meters) | DoD FLIP | 1/2 mile (0800 meters) | AFMAN 15-111; DoD FLIP; AFMAN 112KC-135V3; AFMAN 11-2C-17V3 |
| 1 mile (1600 meters) | AFMAN 15-111 | 1 /4 mile (0400 meters) | AFMAN 15-111 |

**Table 14. BWW Additional Criteria.**

| Criteria | Reference |
|---|---|
| Tornado/Funnel Cloud/Waterspout | AFMAN 15-111 |
| Hail | AFMAN 15-111 |
| Volcanic Ash | AFMAN 15-111 |
| Ice Pellets | AFMAN 15-111 |
| Visibility <1/4 mile (400 meters) | AFMAN 15-111 |
| Snow Depth (only during controlled airfield hours) | AFMAN 15-111 |

| | |
|---|---|
| Tower Visibility (≤4SM and differs from surface visibility) | |

5.7. Cooperative Weather Watch. The WF will maintain a Cooperative Weather Watch program with ATC personnel, SOF, 97th Security Forces Squadron (SFS) and local Flying Squadrons. Of primary concern is the report of tower visibility different from the prevailing surface visibility, local PIREPS and any occurrence of previously unreported weather conditions that could affect flight safety or be critical to the safety or efficiency of other local operations and resources.

5.7.1. A WF technician will:

5.7.1.1. Provide training and certify ATC personnel as limited weather observers. Training, at a minimum will include:

5.7.1.1.1. Evaluating and reporting tower visibility to the WF when tower visibility is less than 4 Statute Miles (SM) and is different from surface prevailing visibility.

5.7.1.1.2. PMSV procedures.

5.7.1.1.3. Decoding surface weather observations and forecasts.

5.7.1.2. Provide WF orientation for the ATC personnel and SOF upon request.

5.7.1.3. Evaluate weather information provided by ATC personnel to determine that AN/FMQ-19 data is accurate. If AN/FMQ-19 data is determined to be erroneous, ATC agencies will be notified first and then it will be logged out IAW back-up procedures outlined in **paragraph 5.2.4.1.2**.

5.7.1.4. Evaluate information received from aircraft in the local pattern for possible inclusion into MEF, surface observations, and/or PIREPS.

5.7.1.5. Relay all PIREPS to the 26 OWS after longline/local dissemination.

5.7.2. ATC personnel and SOF, as applicable, will:

5.7.2.1. Review the cooperative weather watch training seminar. Once complete, they will complete a written exam. A certified 7-level (or higher) weather technician will grade the test and conduct a review of any missed questions with the trainee. A minimum score of 90% is required for passing. After passing the written exam, ATC personnel certification is documented in the individual's training record.

5.7.2.2. Notify the WF when tower visibility is less than 4 SM and is different from prevailing surface visibility.

5.7.2.3. When duties permit, notify the WF when lightning is first observed, thunder is heard, obscuring phenomenon (i.e., fog, haze, smoke), precipitation is first observed/stops, or ceiling/sky cover appears to rise, lower, or dissipate to a degree that would result in a change to the airfield status (i.e., Instrument Flight Rules (IFR)/Visual Flight Rules (VFR)).

5.7.2.4. Relay PIREPS to WF personnel for dissemination and possible incorporation into local weather products (observations, MWP) no later than 5 minutes after receipt.

5.7.2.5. Notify the WF of any active runway changes.

5.7.2.6. Report changes in the high intensity runway light (HIRL) setting to the weather technician. This ensures the RVR, based on the HIRL setting of 3, 4 or 5 is representative of existing RVR.

5.7.2.7. Aid the WF in verifying conditions resource protection WWAs.

5.7.2.8. Notify the WF of any observed Tornado or funnel cloud.

5.7.2.9. Any other significant meteorological condition.

5.7.3. 97 SFS personnel will relay any hazardous weather reports or sightings (tornado, funnel cloud, hail, freezing precipitation (rain freezing on impact and/or forms a glaze on the ground or other surfaces) etc.) to WF personnel. Unofficial reports of severe weather from credible sources within 15 miles will be appended in the remarks of the observation and disseminated longline and locally during augmentation of the AN/FMQ-19.

5.7.4. Flying Squadron personnel will relay PIREPS to the WF either directly or through telephone, PMSV, ATC Tower or RAPCON.

5.8. Meteorological Watch (METWATCH). The term METWATCH is used to provide an organized approach for weather personnel to maintain situational awareness of both current and future meteorological situations with the primary focus on un-forecasted changes in the weather. The WF will perform a continuous METWATCH for AAFB, with the WF providing "eyes forward" support as defined by AFMAN 15-129. Changes in the status of weather elements result in notifications disseminated from the WF to base agencies.

5.8.1. The METWATCH process encompasses WWA criteria (Tables15 & 16) and SPECI observation criteria (**Attachment 2**).

5.8.2. The WF will relay significant, time-sensitive meteorological information not found in coded meteorological reports to the 26 OWS to assist in characterization operations.

5.8.3. The WF will alert the 26 OWS to developing situations not coded in meteorological reports that potentially drive amendments to forecast products from the 26 OWS or impact flight safety.

**6. Staff Weather Services.**

6.1. General. The senior weather officer serves as the WF/CC and staff weather officer for the 97 AMW and its commanders. The WF/CC provides weather and space-environment expertise to various committees, advisory groups, and the 97 AMW/CC's Senior Staff to ensure comprehensive consideration of natural environment effects on base operations. When needed, WF/CC duties may be delegated to other qualified weather personnel. The WF/CC creates and redefines staff weather services as needed to add maximum value to AAFB operations. Staff weather services are normally provided Monday through Friday from 0730-1630L and will be provided outside of these normal hours with prior coordination from 97 AMW leadership (i.e. tropical weather support, short-notice humanitarian relief, etc.).

6.2. Staff Weather Brief. The WF provides the 97 AMW Commanders and Staff with the current weather synopsis and planning forecast. The briefing format changes to effectively describe weather impacts on the mission of the day and to incorporate technological advancements.

6.3. Crisis Action Team (CAT) Staff Brief. During CAT activations, the WF/CC or designated WF representative will provide detailed weather information as it impacts all facets related to the activation to include any briefs to the Emergency Operations Center leadership. Slide presentations are prepared as time permits. In the event the preparing of slides is not feasible, the WF/CC will verbally provide weather information.

6.4. Deployment/Concept Briefings. During mobility concept briefs and/or deployment briefs, the WF/CC will provide mobilizing personnel with the current weather picture and planning forecast for AAFB and deployment locations, as well as climatic data for deployment locations upon request.

6.5. 5-Day Forecast. The WF will produce a daily 5-Day forecast for AAFB with the predominant conditions expected for the next five days. Forecast weather parameters include sky condition, precipitation type, high and low temperatures and potential limiting conditions to the mission.

6.6. Tropical Weather Support. The WF will provide tropical updates using the most current Tropical Cyclone Threat Analysis Product (TC-TAP) produced by the 26 OWS derived from the National Hurricane Center when projected landfall is forecast to impact any Air Force Base or a Category 3 or higher hurricane has potential to impact a "major" city (i.e., New Orleans, Houston, etc.). Wing leadership will be briefed at the Wing Standup briefing when needed and no deviations from NHC/26 OWS will be made. Supported agencies should also understand that 48-hour and 72-hour outlooks (or longer if issued) contain a high degree of uncertainty, are for planning purposes only, and are subject to change.

6.7. Climatology Support. The WF leverages the support of the 14th Weather Squadron Strategic Climatic Information Service for climate statistics all over the world. Units requiring climate information should contact the WF/CC or Flight Chief for mission specific climatological information.

6.8. Special Occasion Briefs. When requested, the WF has the capability to provide current weather synopsis and/or planning forecast for air shows, change of command ceremonies or other official events.

6.9. Flight Information Publication (FLIP) Weather Updates. The WF is responsible for ensuring all AAFB weather information in the FLIP is accurate, to include Radar Instrument Approach Minimums, local NOTAMs, and changes in airfield minima affecting SPECI/LOCAL criteria, PMSV contact information, 26 OWS contact information and airfield services hours. All weather related updates will be requested through AMOPS. Information will be updated as soon as a change is confirmed, and the FLIP information will be checked for accuracy as soon as published.

6.10. Weather Training. The 97th Civil Engineer Squadron's Emergency Management Flight provides weather-safety training during the Newcomer's in-briefing, the annual Severe Weather briefing, and the annual Winter Safety briefing; however, the WF/CC or designated representative provides the following training to base personnel whose jobs depend on proper weather interpretation:

6.10.1. Instrument Refresher Course (IRC). A 30-minute weather-safety brief provided upon request via the WF's SharePoint page or a forecaster provided briefing to pilots during the IRC. Describes aviation-weather hazards and explains how to avoid those

hazards. Additionally, the briefing reviews local climatology and how to gain the most out of available military weather services.

6.10.2. Local Weather Orientation. Provides the SOF, ATC Tower, and RAPCON personnel with the weather information they need to conduct their duties and participate in the AAFB Cooperative Weather Watch described in **paragraph 5.7** The WF/CC or Flight Chief also offers this orientation to any other unit on base that needs a better understanding of weather to accomplish their mission. Personnel requiring local weather orientation should schedule an appointment with the Flight Chief at least 24 hours in advance.

6.11. Weather Plans.

6.11.1. Local/base plans/annexes. The WF/CC (or designated representative) will attempt to document weather support in existing parent/host unit plans and directives (i.e., IEMP 10-2) and any other applicable plans containing an Annex H or weather appendix IAW AFI 15-128.

6.11.2. AAFB Installation Data Page (IDP). WF leadership (WF/CC and Flight Chief) will review the IDP hosted on the 26 OWS webpage within 90 days of assignment or annually, whichever occurs first, to ensure consistency with supported unit requirements. WF leadership will inform the 26 OWS of any changes that occur at AAFB to update the IDP.

**7. Resource Protection.**

7.1. General. This section details actions undertaken by the WF (or 26 OWS when the WF is unable to issue, as capability exists) in order to provide resource protection to AAFB through the use of weather watches, warnings, advisories, and severe weather emails.

7.2. Delineation of Duties. The WF is responsible for issuing all watches, warnings, and advisories. The 26 OWS will issue WWAs normally issued by the WF when the WF is unable to issue, as capability exists. In these cases, the 26 OWS will inform the WF immediately after issue.

7.2.1. WF personnel will utilize the Cooperative Weather Watch to aid in augmentation of the AN/FMQ-19 and perform enhanced METWATCH procedures as applicable prior to and during the onset of severe weather.

7.3. Unit Requirements. Units are responsible for coordinating additional WWA support.

7.3.1. Customers requesting support must validate the requirement by providing the WF with a list of protective actions taken each time the WWA is received.

7.3.2. If the request falls within the operational capabilities of the WF, then weather personnel will monitor and advise of such significant weather formations.

7.4. Severe Weather Email. The severe weather email is the initial notification that offers leaders a command signal to implement base plans such as Aircraft Evacuation and Dispersal Plan, Snow and Ice Control Plan, etc. Through this email WF leaders will refer 97 AMW to the appropriate plans concerning the forecasted adverse weather.

7.5. Weather Watches. Weather Watches provide special notice to AAFB units alerting them to the potential for weather conditions which pose a hazard to life or property within 5 NM of the base. A weather watch can be thought of as a “heads up” that base agencies and personnel

need to consider making plans to take appropriate protective actions should an actual weather warning be issued at a later time. A complete list of AAFB Weather Watches and their desired lead-times can be found in **Table 15** Rules for issuing, amending, extending and canceling weather watches can be found in **Table 17** See **Attachment 5** for watch format.

7.6. Forecast Weather Warnings. A Weather Warning alerts units to an imminent or in-progress weather event within 5 NM of the base that poses a hazard to life and/or property. When warnings are issued, all personnel should take protective actions immediately. A complete list of AAFB Weather Warnings and their desired lead-times can be found in **Table 15** Rules for issuing, amending, extending, and canceling weather warnings can be found in **Table 17** See **Attachment 5** for example warning format.

7.7. Observed Weather Warning. An Observed Weather Warning will be issued for lightning. An observed warning will only be issued when the condition occurs within 5 NM of the base. Rules for issuing, amending, extending, and canceling observed weather warnings can be found in **Table 17** See **Attachment 5** for sample warning format.

**Table 15. AAFB Weather Watches and Warnings.**

| Weather Phenomena | Watch Lead Time | Warning Lead Time |
|---|---|---|
| Tornadic Activity (See paragraph 7.8) †± | 1 Hour | 15 Minutes |
| Severe Thunderstorm (Damaging Winds ≥ 50 knots and/or Damaging Hail ≥ 3/4") †± | 4 Hours | 1 Hour |
| Moderate Thunderstorm (High Winds ≥ 35 but < 50 knots and/or Large Hail ≥ 1/4" but < 3/4") ~ | N/A | 1 Hour |
| Damaging Winds ≥ 50 knots (not associated with thunderstorms) ± | 4 Hours | 1 Hour |
| Strong Winds ≥ 35 but < 50 knots (not associated with thunderstorms) | N/A | 30 Minutes * # |
| Lightning w/in 5 NM (See paragraph 7.9) ~ | 30 Minutes | Observed |
| Freezing Precipitation (any intensity)± | 3 Hours | 1 Hour |
| Blizzard (See paragraph 7.10)± | 2 Hours | 1 Hour |
| Heavy Rain ≥ 2" within 12 hours | 4 Hours | 2 Hours * |
| Heavy Snow ≥ 1/2" within 12 hours ± | 4 Hours | 2 Hours * |
| | | |
| The WF will not issue a watch or warning for sand storms or dust storms, or watches for strong winds or moderate thunderstorms. | | |
| * AAFB leadership in cooperation and support of the operational risk management of units within the 97 AMW have elected to tailor the desired lead times of warnings in Table 15 | | |

| |
|---|
| (annotated with an asterisk) from the standard desired lead times prescribed in AFMAN 15-129, Table 3. |
| † The 97 AMW/CP will issue these same messages via the weather alert radios, ATHOC and/or Giant Voice IAW local procedures. |
| ± The WF will initiate the Severe Weather Action Plan (SWAP) whenever a watch or warning is issued for these criteria (see paragraph 7.14 for additional information on SWAP). |
| ~ A Stand-by weather technician must issue these WWAs in addition to SWAP criteria during non-duty hours. All WWAs must be issued via the WF computers. Lightning watches and warnings may be issued via the stand-by laptop at technician's home. |
| # Strong Winds ≥ 35 but < 50 knots (not associated with thunderstorms) warning will not be issued during airfield closure except when coordinated with the Aircraft Maintenance Squadron. |

7.8. Tornadic Activity. A localized and violently destructive windstorm occurring over land characterized by a funnel-shaped cloud extending toward the ground. Tornadic activity is a blanket term that includes tornadoes, funnel clouds, and/or waterspouts.

7.8.1. Tornado Warning. A tornado warning will be issued by the WF and/or the 26 OWS when a tornado has been detected by the NEXRAD WSR-88D located at Frederick, OK or visually observed and is anticipated to impact AAFB within 15 minutes. Conditions for issuance of this warning are derived based on tornado characteristics, location observed and speed of movement. Based upon the case-by-case characteristics of these factors earlier warning may be provided.

7.8.2. Tornado Warning Dissemination. When the criteria meets the conditions for issuance of a tornado warning, dissemination will occur via ATHOC, AAFB Alert Radios and Giant Voice/Base Siren through the 97 AMW/CP and the Secondary Crash Net (SCN) through 97 OSS/OSAA.

7.8.3. Base Siren Activation. The Base Siren system will be sounded by the CP when the threat of an existing tornado or disastrous wind event is determined to be an imminent threat to impact AAFB within 15 minutes.

7.9. Lightning within 5 NM. The WF will issue a lightning watch when thunderstorm potential exists within 5NM of AAFB within the next 30 minutes. The WF will issue an observed lightning warning when conditions are observed within 5NM of AAFB.

7.10. Blizzard. A Blizzard is defined as: Duration of ≥ 3 hours, sustained winds or gusts ≥ 30 knots, considerable falling and/or blowing snow, with surface visibility ≤ 1/4 mile/0400 meters (all criteria must be met).

7.11. Observed Weather Advisories. Observed Weather Advisories provide special notice to AAFB units notifying them that non-severe weather conditions, which could affect operations, are occurring within 5NM of the base. An observed weather advisory is issued on the first occurrence of the designated criteria. Rules for issuing, amending, extending, and canceling weather advisories can be found in **Table 17** A complete list of AAFB Observed Weather Advisories can be found in **Table 16** Example advisory format is found in **Attachment 5**.

**Table 16. Observed Weather Advisories.**

| Advisory Criterion | Thresholds |
|---|---|
| Surface Winds * | ≥ 20 but < 35 kts |
| Crosswinds | ≥ 25 kts |
| Crosswinds | ≥ 20 kts but < 25 kts |
| Crosswinds | ≥ 15 kts but < 20 kts |
| Crosswinds | ≥ 30 kts |
| Low-level Wind Shear (Speed or Direction) | below 2,000 ft AGL within 5NM |
| Ceiling/Visibility | ≤ 200 ft AGL/1/2 SM |
| Atmospheric Turbulence | Moderate or Greater SFC to 10,000 ft AGL |
| Atmospheric Icing | Moderate or Greater SFC to 10,000 ft AGL |
| Thermal Stress Caution | 91°F - 101°F (32°C - 38°C) |
| Thermal Stress Danger | > 101°F (>38°C) |
| Wind Chill Caution * | ≤ 32°F (0°C) |
| Wind Chill Danger * | ≤ -20°F (-29°C) |

**Table 17. Rules for Issuing, Amending, Extending, and Canceling WWAs.**

| Rule # | Rules for Issuing WWAs |
|---|---|
| 1 | A Watch is not a substitute for a Warning. Units will issue Warnings, as required, regardless of whether or not a Watch had previously been issued. |
| 2 | All Watches and Warnings are issued for specific and distinct locations.<br>- The area affected by a Watch or Warning will be clearly indicated in the text of the Watch/Warning. Warnings will be issued for a 5NM radius of AAFB. |
| 3 | The lightning watch and the observed lightning warning are separate entities and do not supersede previously issued watches or warnings for other criteria |
| 4 | A separate valid time will be specified for each criterion when warranted.<br>- All times used in a Watch or Warning will be expressed in Coordinated Universal Time (UTC) and Local Time.<br>- Exception: A valid time is not used in observed warnings or advisories. In place of valid time, the following statement is used: *"Valid until further notice."* |
| 5 | A forecast WWA for a single un-forecasted event that is not expected to persist or recur will not be issued. This will be accounted for as a miss. |
| 6 | The 26 OWS will issue WWAs when the WF is unable to issue, as capability exists. Observed advisories that affect airfield operations (annotated with an asterisk in Table 16) will be issued by the 26 OWS when the WF is unable to issue, as capability exists. |
| 7 | More than one advisory may be in effect at the same time for the same location, but only one will be in effect for a particular phenomenon at the same time. |

| | |
|---|---|
| 8 | When sufficient time does not exist to communicate a change in weather, weather units that do not normally issue WWAs may, without prior coordination, issue to facilitate resource protection actions. When time permits, weather units forward pertinent information to the responsible unit and transfer responsibility for the WWA. |
| 9 | The WF will issue observed advisories and lightning warnings while on duty. |
| Rule # | Rules for Amending, Extending, and Canceling WWAs |
| 1 | When a Warning or advisory no longer adequately describes the phenomenon's expected occurrence, a completely new warning or advisory with a new number will be issued. |
| 2 | WWAs may be extended provided the extension is issued prior to the expiration of the original notice. |
| 3 | Clearly state how the amended, extended, or cancelled WWA affects any other issued notices for the same criteria (e.g., "This upgrades warning XX-XXX" or "This extends advisory XX-XXX" or when canceling "Watch XX-XXX for lightning within 5 NM remains in effect" etc.) |
| 4 | Cancel WWAs when conditions are no longer occurring and are not expected to reoccur within the DLT of the WWA. Note: Observed WWAs are cancelled at the discretion of the responsible agency; normally 15 minutes after the last occurrence of the criteria when it is no longer forecast to occur. |
| 5 | Lightning Watches are canceled only when the potential for lightning within the next 30 minutes is no longer forecast. Lightning Watches will not be canceled if there is potential for another thunderstorm within 30 minutes. |
| 6 | Observed Lightning Warnings will be canceled when thunderstorms have dissipated or passed beyond 5 NM of AAFB and lightning is no longer occurring within 5NM of AAFB. For lightning warning cancellations, a statement indicating its effect on any previously issued warnings, such as "WEATHER WARNING #XX-XXX remains in effect" or "WEATHER WATCH #XX-XXX FOR LIGHTNING REMAINS IN EFFECT." will be included.<br>Note: The WF (or 26 OWS when the WF is unable to issue, as capability exists) will cancel the lightning warning. |

7.12. Special Weather Message Statements.

7.12.1. ICEMAN. A phone message will be transferred to the SOF and OSS/DO when airframe frost or freezing precipitation is expected to occur.

7.12.1.1. The WF leadership or technician will contact the SOF on duty in the ATC tower and the OSS/DO via phone NLT 1500 the day prior to expected frost. The SOF and OSS/DO will use the forecast to determine whether de-icing equipment is needed to be in-place and ready to de-ice in order to avoid costly delays or mission cancellations.

7.12.1.2. The WF leadership or technician will contact the SOF on duty in the ATC tower and the OSS/DO via phone immediately after the weather watch or warning for freezing precipitation is issued. The SOF and OSS/DO will use the forecast to

determine whether de-icing equipment is needed to be in-place and ready to de-ice in order to avoid costly delays or mission cancellations.

7.12.2. SNOWMAN/ICEMAN. A phone message will be transferred to the OSS/DO whenever snow accumulation greater than ½ inch or ice accumulation greater than ¼ inch is expected to occur at AAFB. The WF technician will contact the OSS/DO via phone immediately after the weather watch or warning for heavy snow is issued.

7.12.3. 26 OWS Special Weather Statements (SWS). The 26 OWS will issue SWS products to notify military decision makers of widespread severe weather events affecting military installations serviced by the OWS. SWSs will be routinely updated as conditions warrant. A SWS is a stand-alone product normally issued 48-72 hours in advance of the forecast event. SWS will be an alphanumeric product describing the type, onset, duration, and area impacted by the event and will be disseminated via common user communications. SWS may also include graphical depiction of the forecast event.

7.12.3.1. The 26 OWS disseminates SWS to WF personnel for evaluation and possible further dissemination/integration into the 97 AMW's risk management decision cycle. If the weather is expected to cause serious damage to the base or degradation to the mission, the WF will refer the 97 AMW's leadership to the Aircraft Evacuation and Dispersal Plan.

7.13. Dissemination. Dissemination of WWAs, extensions and cancellations are done via the Integrated Weather Warnings Capability in JET. In the event a WWA does not reach the intended agency, the WF and/or 26 OWS is responsible for notifying agencies listed in **Table 18** as identified in the supported agency data page. See **Attachment 5** for more information on dissemination.

**Table 18. WWA Receipt Agencies.**

| Agency | Contact Information |
|---|---|
| 97 AMW/CP | DSN 866-6313/6314; Commercial (580) 481-6313/6314 |
| ATC Tower | DSN 866-3386; Commercial (580) 481-3386 |
| RAPCON | DSN 866-3378/6408; Commercial (580) 481-6408 |
| AMOPS | DSN 866-6200/6491; Commercial (580) 481-6200/6491 |
| MOC | DSN 866-6211/6381; Commercial (580) 481-6211/6381 |
| SOF | DSN 866-7490: Commercial (580) 481-4790 |

7.14. Severe Weather Action Plan (SWAP). IAW AFMAN 15-129, the WF has established procedures ensuring sufficient personnel are available to respond and address necessary preventive, protective actions required during potential/actual severe weather events or during meteorological/operational events to safeguard resources 24-hours a day, 7 days-a-week. The purpose of SWAP is to provide a means for the WF to systematically and collectively manage the additional strain and decision making processes that accompany severe weather.

7.15. Severe Weather Action Team (SWAT). SWAT encompasses a primary and alternate technician as the "Stand-by" person subject to recall during WF downtime as prescribed by **Table 15**.

7.15.1. "Stand-by" Technician. This individual serves as the designated SWAT leader until the WF/CC, Flight Chief, or NCOIC is recalled. During WF downtime, the stand-by forecaster will METWATCH and issue severe weather watch or warnings for the installation if required. The 26 OWS will issue severe weather watches or warnings for the installation, if required when the WF is unable to issue, as capability exists. The stand-by weather technician returns to the weather station to initiate a local METWATCH during the valid period of each watch or warning.

7.15.2. Recall Procedures. When recalled, the stand-by weather technician makes contact with 97 AMW/CP immediately upon opening the weather station.

7.15.3. The stand-by weather technician notifies and/or recalls the WF/CC and/or Flight Chief for assistance with the METWATCH when a watch or warning is issued as listed in **Table 15** (appended with a ±). The stand-by technician may also be recalled for non-SWAP criteria in **Table 15** (appended with ~), and he/she does not require a SWAT leader.

7.15.3.1. WWA notification will not occur earlier than 4-hours prior to the forecast impact of the severe weather event; however, this is ultimately determined by the weather and required lead time.

7.15.4. At a minimum, the WF will conduct and document an annual exercise of SWAP. An actual severe weather event meets the intent of an exercise.

7.16. Operational Reports (OPREP). IAW AFMAN 15-129 and AFMAN 10-206 *Operational Reporting* (including the AETCSUP) when the 97 AMW/CP initiates the process of reporting the impact of significant weather to higher headquarters, the WF will provide the following to the 97 AMW/CP, 97 OSS/CC:

7.16.1. Actual weather experienced.

7.16.2. Forecasts valid at the time of occurrence to include TAF and any watches and/or warnings issued (to include actual and desired lead time).

7.16.3. Operational status of meteorological equipment at the time of the event.

7.16.4. Any damage called into or observed by WF personnel.

7.17. Hurricane/Tropical Storm Notifications. Hurricanes and tropical storms do not strike AAFB; however, low cloud ceilings, thunderstorms, tornadoes and heavy precipitation associated with tropical systems can occur. The hurricane season begins on 1 June and ends 30 November annually.

7.17.1. The WF monitors the National Hurricane Center (NHC) forecasts and advisories as well as 26 OWS products (i.e., Tropical Cyclone Threat Assessment Product (TC-TAP). NHC forecast bulletins are published at 03, 09, 15 and 21Z and followed in-turn by 26 OWS updates.

7.17.2. The WF maintains the capability of updating 97 AMW leadership to NHC hurricane bulletins as referenced in **paragraph 6.6** The WF does not deviate from the NHC or 26 OWS tropical weather products.

**8. Reciprocal Support.**

8.1. General. The WF requires daily support in order to accomplish its mission. This chapter outlines the support required by other agencies on AAFB. Per AFMAN 15-129, support to the WF by other local agencies is mandated by AF or other directives that may not be included in this chapter.

8.2. 97 AMW/CP. The 97 AMW/CP will:

8.2.1. Provide the WF a courtesy copy of all OPREP-3s submitted for weather-related incidents or phenomena (i.e., aircraft diversion, aircraft damage, injuries, flight control problems or significant impact to student training) IAW AFMAN 10-206 and AETC Supplement.

8.2.2. Relay time-critical WWAs via ATHOC (Reference **Attachment 5**). The 97 AMW/CP will also utilize additional methods of notification including base siren, giant voice, AAFB alert radios and telephones IAW local checklists.

8.2.3. Upon receipt of a Tornado Watch immediately notify the installation commander.

8.2.4. Upon receipt of a Tornado Warning, immediately activate the base siren if the WF is closed, then notify the installation commander.

8.2.5. Upon receipt of severe weather reports from on or off-base agencies, immediately notify and relay the information to the weather technician.

8.2.6. Provide copies of Quick Reaction Checklists (QRCs) to the WF/CC and/or Flight Chief in order to validate WWA notification procedures.

8.2.7. Provide back-up PMSV services to the WF IAW paragraph 4.6.4.

8.3. 97 AMW/PA. The 97 AMW/PA will:

8.3.1. Disseminate general weather information via “481-NEWS” (481-6397) during duty hours.

8.3.2. Assist the WF with photography requests for taking/recertifying surface visibility markers.

8.3.3. In the event a tornado warning has been canceled and upon notification from the installation commander, post the “all clear” message to the Commander’s Access Channel.

8.4. 97 AMW/SE. The 97 AMW/SE will:

8.4.1. Provide aircraft mishap board training for selected weather personnel.

8.4.2. Notify the WF when it is suspected that weather may have caused or contributed to aircraft damage, either in-flight or on the ground.

8.5. 97 OG. The 97 OG will:

8.5.1. Inform the WF of any changes in the operational needs of the 97 AMW, including changes in circling or landing minima.

8.5.2. Provide the WF with all plans, messages or communications affecting weather support to 97 AMW.

8.5.3. Through the SOF, notify the weather technician of the primary alternate airfield and any changes in alternates. As required, notify the 97 OG/CC and SUPs when alerted by the WF of a change in radar operational status. Notify the weather technician when a weather recall is initiated and pass PIREPs containing weather information as it impacts flight operations.

8.5.4. Through 97 OG/OGV, provide the WF with the date, time and location of the quarterly SOF meeting. Sufficient notification is required for any requested presentations.

8.6. 54 ARS, 56 ARS, 58 AS and 730 AMTS. The commander and/or operations officer of the 54 ARS, 56 ARS, 58 AS and 730 AMTS will:

8.6.1. Ensure aircrews pass weather-related PIREPs to the WF either directly via the PMSV or through the SOF.

8.6.2. Ensure flight crews make every effort to provide at least 2 hours advanced notification prior to the pick-up/briefing time for unscheduled MEF and/or DD Form 175-1 requests.

8.6.3. Ensure a reasonable and timely effort is made to notify the WF of flight cancellations and/or mission changes affecting a previously scheduled or requested briefing.

8.6.4. Coordinate with WF leadership to establish and maintain a process to provide timely mission weather debrief information to the WF. Data is required for WF and AETC weather metrics and is a valuable part of the MEF improvement process ensuring the WF is providing accurate and appropriate weather support services for the flying mission.

8.6.5. In the event the Base Operations facility is evacuated, coordinate with WF leadership to arrange mass weather briefings within respective flying squadrons. The WF evacuation facility does not provide sufficient space to conduct routine flight weather briefings.

8.6.6. Notify the WF of anticipated significant increases or changes in the aircrew briefing workload.

8.6.7. Notify the WF when a mass briefing of at least four aircrews is desired for cross-country, out-and-back missions or other mass crew briefings. Notification will include the briefing location, desired brief time and the following elements: Departure and destination location(s), desired alternate(s) and times, take-off and destination arrival times, flight level(s) and specific routes. Notification must be made to the WF prior to close of business the duty day prior to the desired briefing. Units with facilities and digital projectors are asked to make these available to the WF briefer. If such equipment is not available, or an alternate briefing tool is available, please notify the WF at the time briefing is requested. Priority for multiple squadron briefings will be weighed against first come-first serve, considering planned departure times.

8.6.8. Ensure SOFs, SUPs, IPs and students are informed of and understand weather services and duty priorities. Questions or concerns should be directed to the WF leadership.

8.6.9. Notify the WF of any degradation in weather service or if changes to this plan are required.

8.6.10. Provide points-of-contact for coordination of weather liaison program.

8.7. 97 OSS/OSAT. The 97 OSS/OSAT (ATC Tower) will:

8.7.1. Evaluate tower visibility to report changes in the tower prevailing visibility to the WF when the tower visibility is less than 4 SM (6000 meters) and different from the surface prevailing visibility.

8.7.2. When duties permit, ATC personnel will notify the WF when lightning is first observed, thunder is heard, obscuring phenomenon (i.e. fog, haze, smoke), precipitation is first observed/stops, or ceiling/sky cover appears to rise, lower, or dissipate to a degree that would result in a change to the airfield status (i.e., IFR/VFR).

8.7.3. Relay pilot reports (PIREPS) to WF personnel for dissemination and possible incorporation into local weather products (observations, MEF) within 5 minutes of receipt.

8.7.4. Notify the WF of any active runway changes.

8.7.5. Report changes in the high intensity runway light (HIRL) setting to the weather technician. This ensures the RVR, based on the HIRL setting of 3, 4 or 5 is representative of existing RVR.

8.7.6. Aid the WF in verifying conditions outlined in WWAs.

8.7.7. Ensure weather personnel receive ATC Tower and RAPCON indoctrination. ATC Tower will be the focal point.

8.7.8. Notify the WF of any JET and wind sensor equipment problems.

8.7.9. Provide routine and non-routine PMSV radio checks. Provide back-up PMSV support IAW paragraph 4.6.4..

8.7.10. Coordinate and ensure all ATC Tower personnel receive local weather phenomena training and certification to take limited weather observations and to participate in the Cooperative Weather Watch.

8.7.11. Provide WF personnel access to the ATC control tower to perform back-up operations from the AOL.

8.8. 97 OSS/OSAR. The 97 OSS/OSAR (RAPCON) will:

8.8.1. Relay all PIREPs containing weather information to the WF weather technician within 5 minutes of receipt.

8.8.2. In conjunction with normal daily phone checks, obtain a voice clarity check on the RAPCON-to-Weather hotline.

8.8.3. Coordinate and ensure all RAPCON personnel receive weather code familiarization training.

8.8.4. Notify the WF of any JET and wind sensor equipment problems.

8.9. 97 OSS/OSAA. The 97 OSS/OSAA (AMOPS) will:

8.9.1. Notify the WF of aircraft mishaps and emergencies.

8.9.2. Provide RSC/RCR reading data to the WF for situational awareness purposes. RSC/RCR will <u>not</u> be reported in an observation.

8.9.3. Relay pertinent information on AAFB-diverted aircraft to weather personnel.

8.9.4. Provide WF with requested DOD FLIPs. Upon receipt of weather data changes for the DOD FLIPs, coordinate and submit all revisions for publication.

8.9.5. Provide a copy of any changes to standard airfield hours immediately upon notification by flight scheduling or 97 OG.

8.9.6. Notify the weather technician of the airfield closing time or any changes to that time.

8.9.7. Include a note for extended PMSV outages (over 24-hours) in local NOTAM when notified by WF personnel.

8.9.8. Include a note for weather support closures and equipment/communications outages in local NOTAM. Provide the same for extended airfield hours indicating weather support availability.

8.9.9. Escort newly assigned WF personnel on a visual acuity tour of the airfield and identify locations of meteorological sensors and equipment.

8.10. 97 OSS/OSO. The 97 OSS/OSO (Current Operations) will:

8.10.1. Ensure WF leadership is notified of scheduled weekend/holiday flying and changes to the routine scheduled flying hours. This facilitates manpower scheduling and the lead time required to prepare the appropriate MWPs for flight operations.

8.11. 97 SFS. The 97 SFS will promptly inform the WF of any hazardous weather reported by SFS personnel or outside indigenous sources IAW with the Cooperative Weather Watch described in **paragraph 5.7.3**.

8.12. 97 CS. The 97th Communications Squadron (CS) will:

8.12.1. Notify the responsible service agents for outages.

8.12.2. Coordinate with off-base agencies to repair off-base lines (as applicable).

8.12.3. Perform necessary follow-up actions as required until full service is restored.

8.12.4. Ensure weather data and telephone circuits are assigned repair priorities.

8.12.5. House the JET Sensor Collection Appliance (SCA) server and provide adequate power supply.

8.12.6. Run vulnerability scans of the JET SCA server and provide the vulnerability reports to the WF leadership.

8.13. 97 OSS/OSAM. The 97 OSS/OSAM Flight will:

8.13.1. Ensure established maintenance response times are met IAW the 97 OSS-97 CS-97 CES Air Traffic Control and Landing Systems Memorandum of Understanding (MOU).

8.13.2. Immediately notify the WF of any problems encountered in maintaining any piece of meteorological radar equipment.

8.13.3. Provide inputs to 97 AMW/CP for OPREP-3 report when the WSR-88D Weather Radar has been operationally unavailable for 24 or more consecutive hours.

8.13.4. Provide, coordinate, or arrange for the installation, maintenance, and repair of weather communication and meteorological sensing equipment, except for the communication and meteorological equipment that is maintained by contract.

8.13.5. Ensure a 24-hour POC for reporting outages and assigning Job Control numbers is available.

8.13.6. Ensure scheduled maintenance does not degrade the MISSIONWATCH performed by the WF during periods of inclement weather and notify the WF technician prior to routine maintenance. NOTE: When OSAM technicians perform periodic maintenance of the AN/FMQ-19 precipitation gauge, they are required to inject water into the tipping bucket. Because the sensor is an analog sensor, and even though it is disabled, the sensor memory remembers the injected amount of water and reports it when the sensor is re-enabled. The algorithms process this data and then report it into the daily and monthly summary messages. The weather technician must ask how much water was injected, annotate the amount, and later backup (edit) appropriately and remove the amount from the daily precipitation readings. Even though the issue of analog sensor and reporting may be corrected in the future, if sensors are not carefully managed during maintenance, errors can occur. OSAM technicians must ensure WF is notified promptly that the precipitation gauge is undergoing maintenance.

8.13.7. Maintain and update all Technical Orders and will advise operators of any significant changes, as received.

8.13.8. Notify WF leadership of any scheduled or unscheduled maintenance that will impact operations at the Frederick, OK NEXRAD.

8.14. 97 CS/SCOSC. 97 CS/SCOSC (Communications Focal Point) will:

8.14.1. Upon notification by WF personnel, react to network outages/problems based on restoral priorities. WF personnel will provide mission impact statements when not having network access degrades mission support capability. The WF NCOIC (or representative) determines the operational impact of network outages and consults with communications personnel. WF personnel will contact Communications Focal Point at DSN 866-7000 for assistance.

8.14.2. Network access and communications links are required for JET to function. The server for the system resides within the 97 CS NCC. Contact the 557 WW Field System Support Cell at DSN 271-2586, option 2 for JET equipment issues.

8.14.3. SharePoint is a critical tool for weather dissemination of MWPs to 97 AMW agencies. 97 CS ensures network connectivity to AETC SharePoint server. All site related issues should be addressed to the site owner (97 OG/CSA).

8.15. All Weather Support Recipients:

8.15.1. With JET connectivity will notify the WF of problems with JET.

8.15.2. Must notify the WF through the formal chain of command when new weather support requirements are identified.

8.15.3. Must coordinate changes or additions to this weather support document as soon as such changes are anticipated.

MATTHEW A. LEARD, Colonel, USAF
Commander, 97th Air Mobility Wing

**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

***References***

JP 3-59, *Meteorological and Oceanographic Operations*, 10 Jan 2018

AFPD 15-1, *Weather Operations*, 14 Nov 2019

AFMAN 10-206, *Operational Reporting*, 18 Jun 2018

AFI 10-2501, *Air Force Emergency Management (EM) Program*, 10 Mar 2020

AFMAN 11-2C-17V3, *C-17 Operations Procedures*, 29 Jul 2019

AFMAN 11-2KC-135V3, *C/KC-135 Operations Procedures*, 09 Sep 2019

AFMAN 11-202V3, *Flight Operations*, 10 Jun 2020

AFI 11-202V3, AETC Supplement I, *General Flight Rules*, 30 Jan 2017

AFMAN 11-210, *Instrument Refresher Program (IRP)*, 04 Oct 2019

AFMAN 11-230, *Instrument Procedures*, 24 Jul 2019

AFI 11-418, *Operations Supervision*, 28 Feb 2020

AFI 11-418, AETC Supplement I, *Operations Supervision*, 19 Jun 2020

AFI 13-204V3, AAFB Supplement, *Airfield Operations Procedures and Programs*, 30 Jan 2017

AFMAN 15-111, *Surface Weather Observations*, 12 Mar 2019

AFI 15-114, *Weather Technical Readiness Evaluation*, 16 Mar 2017

AFI 15-127, *Weather Training*, 20 Jan 2016

AFI 15-128, *Weather Force Structure*, 21 Jun 2019

AFMAN 15-124, *Meteorological Codes*, 16 Jan 2019

AFMAN 15-129, *Air and Space Weather Operations*, 9 Jul 2020

AFPD 15-1, *Weather Operations*, 14 Nov 2019

AFI 90-201, *The Air Force Inspection System*, 20 Nov 2018

97 OSS/OSW-26 OWS Installation Data Page

97 OSS-97 CS-97 CES ATCALS MOU

***Prescribed Forms***

None

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

***Abbreviations and Acronyms***

**AAFB**—Altus Air Force Base

**ACC**—Air Combat Command

**AETC**—Air Education and Training Command

**AF**—Air Force

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFPD**—Air Force Policy Directive

**AFRC**—Air Force Reserve Command

**AFW-WEBS**—Air Force Weather Web Enterprise Services

**AGL**—Above Ground Level

**ALTSG**—Altimeter Setting

**AMOPS**—Airfield Management Operations

**AMOS**—Automated Meteorological Observation System

**AMTS**—Air Mobility Training Squadron

**AMW**—Air Mobility Wing

**ANG**—Air National Guard

**AOL**—Alternate Operating Location

**AOS**—Air Operations Squadron

**ARS**—Air Refueling Squadron

**AS**—Airlift Squadron

**ATC**—Air Traffic Control

**BWW**—Basic Weather Watch

**CAT**—Crisis Action Team

**CBRNE**—Chemical, Biological, Radiological, Nuclear, and High-yield Explosive

**CDM**—Chemical Downwind Message

**CDT**—Central Daylight time

**CES**—Civil Engineer Squadron

**CMWP**—Controlled Mission Weather Products

**COOP**—Continuity of Operations

**CP**—Command Post

**CS**—Communications Squadron

**CST**—Central Standard Time

**CU**—Characterization Unit

**DOD**—Department of Defense

**DSN**—Defense Switched Network

**EDM**—Effective Downwind Message

**EM**—Emergency Management

**ESF**—Emergency Support Function

**FLIP**—Flight Information Publication

**FWB**—Flight Weather Brief

**HF**—High Frequency

**HIRL**—High Intensity Runway Light

**IAW**—In Accordance With

**IDP**—Installation Data Plan

**IFM**—In-Flight Management

**IFR**—Instrument Flight Rules

**IRC**—Instrument Refresher Course

**ITS**—Index of Thermal Stress

**JET**—Joint Environmental Toolkit

**KLTS – 4**—letter ICAO identifier for AAFB

**LAN**—Local Area Network

**MEF**—Mission Execution Forecast

**METAR**—Routine Meteorological Observation Report

**METWATCH**—Meteorological Watch

**MISSIONWATCH**—Mission Watch

**MOC**—Maintenance Operations Control Center

**MOU**—Memorandum of Understanding

**MWP**—Mission Weather Product

**NEXRAD**—Next Generation Radar

**NHC**—National Hurricane Center

**NM**—Nautical Miles

**NOTAM**—Notice to Airmen

**NVG**—Night Vision Goggles

**OPR**—Office of Primary Responsibility

**OPREP**—Operational Reports

**OSS**—Operations Support Squadron

**OSW**—Weather Flight

**OWS**—Operational Weather Squadron

**PIREP**—Pilot Report

**PMSV**—Pilot-to-Metro Service

**QRC**—Quick Reaction Checklist

**RAPCON**—Radar Approach Control

**RPG**—Radar Product Generator

**RSC**—Runway Surface Condition

**RVR**—Runway Visual Range

**RVRNO**—Runway Visual Range Not Available

**SCA**—Sensor Collection Appliance

**SCN**—Secondary Crash Net

**SFS**—Security Forces Squadron

**SM**—Statute Mile

**SOF**—Supervisor of Flying

**SPECI**—Special Observation

**SWAP**—Severe Weather Action Procedures

**SWAT**—Severe Weather Action Team

**SWS**—Special Weather Statement

**TACC**—Tanker Airlift Control Center

**TAF**—Terminal Aerodrome Forecast

**TC-TAP**—Tropical Cyclone Threat Analysis Product

**TEMPO**—Temporary

**UA**—Routine PIREP

**UHF**—Ultra-High Frequency

**UTC**—Coordinated Universal Time

**UUA**—Urgent PIREP

**VFR**—Visual Flight Rules

**WF**—Weather Flight

**WW**—Weather Wing

**WWA**—Watch, Warning and Advisory

**Z**—Zulu, also see UTC

***Terms***

**Air Force Weather Agency (557 WW)**—A strategic weather center at Offutt AFB NE, providing atmospheric data and analysis/forecast products required by the regional OWSs and the WFs worldwide. 557 WW provides the centralized repository for global observations and forecasts that are data based at 557 WW and, in turn, disseminated to DOD weather data users worldwide. In addition to global observations and forecasts collected from worldwide sources, 557 WW collects meteorological satellite data from multiple sources. Based on global analysis of available data, 557 WW creates global analysis and forecast products to meet the forecast requirements of its supported users.

**Alternate Operating Location**—The location to which the WF will move in the event that Bldg 185 is evacuated.

**Basic Weather Watch**—A method of observing, recording, and disseminating significant changes in weather conditions to essential customers.

**Cooperative Weather Watch**—A method of collective observing shared by the weather observer, tower personnel, and SOF, to enhance the mission of BWW. The weather observer collates information from other sources and disseminates as needed.

**Desired Lead Time (DLT)**—The total amount of time required to disseminate a forecast WWA from the WF through the local dissemination tree to all affected end-users plus the amount of advance notice a supported organization requires to complete mandatory protective actions before the onset of a particular weather phenomenon.

**Flight Information Publication**—Booklet containing aircraft approach, landing, and takeoff guidance at various airfields, to include AAFB. Also lists weather restrictions on airfields.

**Installation Data Page**—A document defining the specific environmental support requirements, technical data, reference material, and contact information for each organization receiving TAF and WWA support from the 26 OWS.

**Instrument Refresher Course**—Continuation training for aircrews. The WF provides instructors and material for the weather segment of the course upon request.

**Issue Time**—The time when an agency is notified of a WWA. When more than one agency is notified, the issue time is the time the last agency is notified. Follow-up notifications are not considered when determining issue time.

**METAR**—A regular observation, taken and disseminated locally and longline.

**Meteorological Watch (METWATCH)**—A deliberate process for monitoring the terrestrial weather or space environment in an area or region. The purpose of a METWATCH is to identify when and where observed conditions significantly diverge from forecast conditions and determine courses of action to update or amend a forecast product or group of products and notify designated agencies.

**Mission Execution Forecast (MEF)**—A mission execution forecast is how flight weather information is passed to the flying customer. It can take the form of a verbal briefing, a 175-1 briefing, a weather flimsy, or other forms.

**Mission Weather Product (MWP)**—Any weather product or group of weather products generated by the WF that is integrated into the military decision making process. MWPs may be planning or execution products and are not limited to aviation missions.

**MISSIONWATCH**—A deliberate process of monitoring terrestrial weather or the space environment for specific mission-limiting environmental factors that may adversely impact missions in execution. The MISSIONWATCH process is performed by the WF and is intended to identify previously unidentified environmental threats and alert decision-makers at the operational unit and/or airborne mission commanders, enabling dynamic changes to mission profiles that may mitigate the environmental threat and optimize the chance of mission success.

**Operational Weather Squadron**—A regional forecast and weather watch center. Commonly referred to as a "hub," AAFB's servicing OWS is the 26 OWS located at Barksdale AFB, Louisiana.

**Severe Thunderstorm**—A thunderstorm presenting a threat to lives or property that requires agencies to enhance resource protection measures. Generally, thunderstorms producing hail greater than or equal to 3/4 inch diameter and/or surface wind greater than or equal to 50 knots.

**Terminal Aerodrome Forecast**—A coded weather bulletin providing forecast information for an aerodrome complex to facilitate flight planning and command and control. TAFs are formatted IAW AFMAN 15-124, Meteorological Codes, and amended IAW AFMAN 15-129, *Air and Space Weather Operations.*

## Attachment 2

## SPECIAL OBSERVATION CRITERIA

**A2.1. SPECI Observations.** SPECI observations will be taken and disseminated IAW AFMAN 15-111, and DoD Flight Information Publications (FLIP). A SPECI observation will be for the following conditions.

**A2.2. Ceiling.** The ceiling forms or dissipates below, decreases to less than, or if below, increases to equal or exceed the **Table A2.1** values.

**Table A2.1. SPECI Ceiling Criteria.**

| Criteria | Reference |
|---|---|
| 7,000 feet | Local Inflight Guide for Duke Beam |
| 5,000 feet | AFI 11-2C-17v3 |
| 3,000 feet | AFMAN 15-111 |
| 2,500 feet | AAFBI 13-204v3 |
| 2,000 feet | AFMAN 15-111; AAFBI 13-204v3; AFI 11-202v3 |
| 1,500 feet | AFMAN 15-111; AAFBI 13-204v3 |
| 1,000 feet | AFMAN 15-111; AAFBI 13-204v3; AFI 11-2KC-135v3 |
| 800 feet | AFMAN 15-111; DoD FLIP' AAFBI 13-204v3; DOD FLIP |
| 700 feet | AFMAN 15-111 |
| 600 feet | AFMAN 15-111; AFI 11-2C-17v3 |
| 500 feet | AFMAN 15-111; DoD FLIP |
| 400 feet | DoD FLIP |
| 300 feet | AFMAN 15-111; AFI 11-2KC-135v3; AFI 11-2C-17v3 |
| 200 feet | AFMAN 15-111; DoD FLIP; AFI 11-2C-17v3 |
| 100 feet | AAFBI 13-204v3 |

**A2.3. SPECI Sky Condition Criteria.** A layer of clouds or obscuring phenomena aloft is observed below the highest published instrument landing minimum (including circling) applicable to the airfield and no layer aloft was reported below this height in the previous METAR or SPECI.

**Table A2.2. SPECI Sky Condition Criteria.**

| Criteria | Reference |
|---|---|
| 800 feet | AFMAN 15-111; DOD FLIP |

**A2.4. Visibility.** The surface visibility as reported in the body of the report decreases to less than or if below, increases to equal or exceed the **Table A2.3** criteria.

**Table A2.3. SPECI Visibility Criteria.**

| Criteria | Reference | Criteria | Reference |
|---|---|---|---|
| 3 miles (4800 meters) | AFMAN 15-111; AAFBI 13204V3 | 1 1/8 mile (1800 meters) | DoD FLIP |
| 2 1/2 miles (4000 meters) | DoD FLIP | 7/8 mile (1400 meters) | DoD FLIP |
| 2 miles (3200 meters) | AFMAN 15-111; DoD FLIP; AAFBI 13-204v3; AFMAN 11-2KC-135v3; AFMAN 11-2C17v3 | ¾ mile (1200 meters) | AFMAN 15-111; DoD FLIP; AAFBI 13-204v3; AFMAN 11-2KC-135v3; AFMAN 11-2C17v3 |
| 1 ½ miles (2400 meters) | AFMAN 15-111; DoD FLIP | 5/8 mile (1000 meters) | DoD FLIP |
| 1 3/8 miles (2200 meters) | DoD FLIP | ½ mile (0800 meters) | AFMAN 15-111; DoD FLIP; AAFBI 13-204v3; AFMAN 11-2KC-135v3; AFMAN 11-2C17v3 |
| 1 mile (1600 meters) | AFMAN 15-111 | 1/4 mile (0400 meters) | AFMAN 15-111 |

**A2.5. Runway Visual Range.** Reported whenever the prevailing visibility is first observed < 1SM, again when the prevailing visibility goes above 1SM. The highest value during the preceding 10 minutes from the designated RVR runway decreases to less than, or if below, increases to equal or exceed the **Table A2.4** values. RVR is first determined as unavailable (RVRNO) for the runway in use, and when it is first determined that the RVRNO report is no longer applicable, provided conditions for reporting RVR exist.

**Table A2.4. SPECI RVR Criteria (Reportable Values).**

| Criteria | Reference |
|---|---|
| 6,000 feet | AFMAN 15-111; DoD FLIP |
| 5,500 feet | DoD FLIP |
| 5,000 feet | AFMAN 15-111 |
| 4,500 feet | DoD FLIP |
| 4,000 feet | AFMAN 15-111; DOD FLIP; AFMAN 11-2C-17V3; AFMAN 11-2KC-135V3 |
| 3,000 feet | DoD FLIP |
| 2,600 feet | DoD FLIP |
| 2,400 feet | AFMAN 15-111; DoD FLIP |
| 2,000 feet | AFMAN 15-111 |
| 1,600 feet | AFMAN 15-111; AFMAN 11-2KC-135v3; AFMAN 11-2C-17v3 |

| | |
|---|---|
| 1,200 feet | AFMAN 15-111 |
| 1,000 feet | AFMAN 15-111 |
| 600 feet | AFMAN 15-111 |

**A2.6. Other Weather Elements.**

**Note:** Special observations will be taken when any of the **Table A2.5** elements occur.

**Table A2.5. SPECI Criteria: Other Weather Elements.**

| Criteria | Reference |
|---|---|
| Wind Shift: Wind direction changes by 45 degrees or more in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift. | AFMAN 15-111 |
| Squall: When squalls occur | AFMAN 15-111 |
| Volcanic Eruption: Eruption or volcanic ash first observed | AFMAN 15-111 |
| Thunderstorm (occurring at station): begins or ends<br>*Note*: A SPECI is not required to report the beginning of a new thunderstorm if one is currently reported. | AFMAN 15-111 |
| Precipitation: (1) Hail (≥ 1/4" in diameter) begins or ends. (2) Freezing precipitation begins, ends, or changes intensity. (3) Ice pellets begin, end, or change intensity. (4) Any other type of precipitation begins or ends. *Note*: Except for freezing rain, freezing drizzle, and hail, a SPECI is not required for changes in type (e.g., drizzle changing to snow grains) or the beginning or ending of one type while another is in progress (e.g., snow changing to rain and snow). | AFMAN 15-111 |
| Tornado, Funnel Cloud, or Waterspout: (1) Is observed (2) Disappears from sight or ends. | AFMAN 15-111 |
| Upon Resumption of Observing Function:<br>A special (SPECI) observation will be taken within 15-minutes after the weather technician returns to duty following a break in observing coverage or augmentation at the observing location unless a record observation is filed during that 15-minute period | AFMAN 15-111 |
| Aircraft Mishap: Take an aircraft mishap SPECI immediately upon notification of an aircraft mishap at or near the observing location *Note*: This remark is not disseminated locally or longline | AFMAN 15-111 |
| Miscellaneous: Any other meteorological situation that, in the weather technician's opinion, is critical | AFMAN 15-111 |

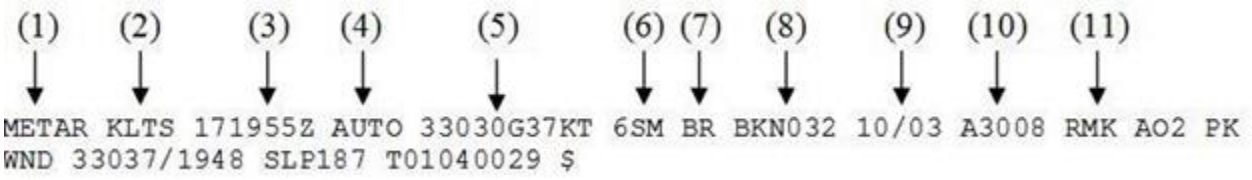
**A2.7. Altimeter Updates.** When backing up the AN/FMQ-19 pressure sensor, ALSTG update LOCALs will be taken at an interval not to exceed 35 minutes when there has been a change of 0.01 inch Hg (0.3 hPa) or more since the last reported ALSTG value. A METAR or SPECI taken within the established time interval meets this requirement. LOCALs are taken and disseminated to ATC agencies as soon as possible after the relevant altimeter setting change is observed.

## Attachment 3

## OBSERVATION/PIREP FORMAT

**A3.1. General.** This attachment provides an example format for METAR and SPECI observations and PIREPs. Further explanation and examples can be found in AFMANs 15-111 and 15-124.

**Figure A3.1. Example Observation Decoding.**




**A3.2. Observation Formats.**

A3.2.1. **METAR/SPECI Format.**

A3.2.1.1. **(1) Type of Observation.** Either an Aviation Routine Weather Report (METAR) or Special Observation (SPECI).

A3.2.1.2. **(2) Station Identifier.** KLTS is the long-line header for Altus AFB observations.

A3.2.1.3. **(3) Date/Time Group.** The date/time group (UTC) that the last element of the observation was observed.

A3.2.1.4. **(4) Mode of Observation.** This will either state AUTO or will be blank. AUTO in this example indicates the observation was calculated and disseminated by the AN/FMQ-19 without any augmentation by the weather technician.

A3.2.1.5. **(5) Wind.** This portion of the observation provides the wind direction (first three numbers, VRB for variable, or 000 for Calm), sustained wind speed (next 2 or 3 numbers), and winds gusts (any numbers following the 'G') if there have been any measured in knots.

A3.2.1.6. **(6) Visibility.** Recorded in statute miles or fraction of a statute mile. Any value reported as 7 SM or greater is considered "unrestricted." Any value less than 7 SM will contain a visibility restrictor (BR, FG, RA, DZ, etc.).

A3.2.1.7. **(7) Present Weather.** Any weather phenomenon that is occurring on the airfield. This is mandatory anytime the visibility is less than 7 SM.

A3.2.1.8. **(8) Sky Condition.** Cloud bases in hundreds of feet Above Ground Level (AGL).

A3.2.1.9. **(9) Air Temperature/DewPoint.** Measured in degrees Celsius (°C). The first value is the air temperature and the second value following the solidus is the dewpoint.

A3.2.1.10. **(10) Altimeter Setting.** Measured in inches of mercury.

A3.2.1.11. **(11) Remarks.** Common remarks will be listed to include AO2 – Automated observation; AO2A – augmented observation, Peak Winds (PK WND); Sea Level Pressure (SLP); and hourly maximum and minimum temperature.

A3.2.2. **METAR/SPECI Formats.** METARs/SPECIs are formatted in local and longline formats. Local formats are produced in direct support of ATC operations and longline formats meets the requirements of DoD and world-wide meteorological agencies.

**Figure A3.2. Local METAR Formatted Example.**

```
KLTS METAR 0455Z AUTO 36014KT 10SM OVC025 07/02 ALSTG 29.81 RMK AO2 $ PA
+1476 DA +3045
```

**Figure A3.3. Longline METAR Formatted Example.**

```
METAR KLTS 180455Z AUTO 01014KT 10SM OVC025 07/02 A2981 RMK AO2 SLP297 $
```

**Figure A3.4. Local SPECI Formatted Example.**

```
KLTS SPECI 2344Z AUTO 05008KT 9SM -RA SCT015 OVC028 06/06 ALSTG 29.81 RMK AO2
$ PA +1476 DA +3045
```

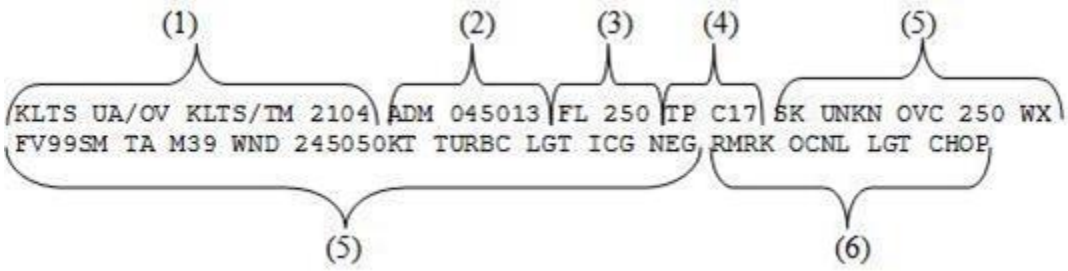
**Figure A3.5. Longline SPECI Formatted Example.**

```
SPECI KLTS 152344Z AUTO 06008KT 9SM -RA SCT015 OVC028 06/06 A2978 RMK AO2
SLP085 $
```

**A3.3. PIREP Format.** A PIREP is a report of meteorological phenomena encountered by an aircraft in flight. All PIREPs received by the WF that do not meet the standard dissemination criteria outlined in **paragraph A3.3.1** but are significant to flying operations and flight safety will be verbally passed along to aircrews, ATC agencies/SOF (if received from another credible source since JET doesn't allow the local dissemination of PIREPS. All PIREPS meeting standard dissemination criteria will be transmitted longline via JET. Back-up options include using the AFW-WEBS Alphanumeric upload option.

A3.3.1. **At a minimum,** a PIREP must contain the transmitting organization, a message type, location, time, flight level, type of aircraft, and at least one other element.

**Figure A3.6. Example PIREP Decoding.**




A3.3.2. **PIREP Format.**

A3.3.2.1. **(1) Header and time.** Routine (UA) PIREP received by the WF at 2104 UTC.

A3.3.2.2. **(2) Aircraft location.** 13 nautical miles northeast (045-degree radial) of Ardmore, OK.

A3.3.2.3. **(3) Flight level.** 25,000 feet.

A3.3.2.4. **(4) Aircraft type.** C17.

A3.3.2.5. **(5) Text.** (cloud bases and tops if known, temperature, winds, turbulence, icing, etc.).

A3.3.2.5.1. **Sky Condition (SK).** Flying above an overcast cloud layer with bases unknown and tops at 25,000 feet.

A3.3.2.5.2. **Visibility at Flight Level (FV).** Unrestricted (99) statute miles.

A3.3.2.5.3. **Ambient Air Temperature (TA).** Minus 39°C.

A3.3.2.5.4. **Wind.** From 245 degrees at 50 knots (3 digits if needed).

A3.3.2.5.5. **Turbulence.** Light.

A3.3.2.5.6. **Icing.** None.

A3.3.2.5.7. **(6) Remarks.** Occasional light chop (turbulence).

A3.3.3. For more information on encoding and decoding PIREPS, see AFMAN 15-124, *Meteorological Codes*

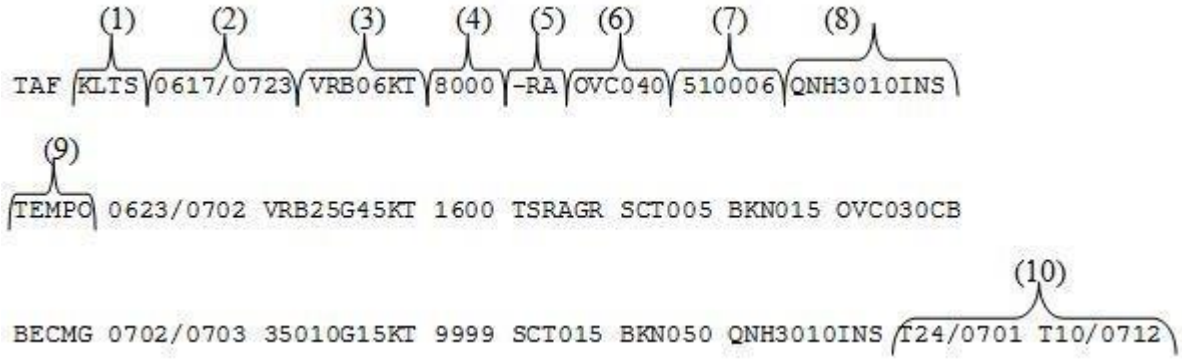
## Attachment 4

## TAF FORMAT/CRITERIA

**A4.1. General.** Terminal Aerodrome Forecasts (TAF) are issued by the WF for AAFB. This attachment provides the TAF format, a sample TAF, and criteria for specification and amendments.

**A4.2. TAF Format.**

**Figure A4.1. Sample TAF for AAFB.**




A4.2.1. The TAF in FigureA4.1 is encoded/decoded below:

A4.2.1.1. **(1)** Location Identifier.

A4.2.1.2. **(2)** Valid time in UTC (30-hour format).

A4.2.1.3. **(3)** Winds (degrees magnetic in knots, 3 digits if needed).

A4.2.1.4. **(4)** Visibility (in meters).

A4.2.1.5. **(5)** Weather and/or obstructions to vision (if none, no entry will appear).

A4.2.1.6. **(6)** Sky conditions (cloud bases in hundreds of feet AGL).

A4.2.1.7. **(7)** Icing (5) and/or turbulence (6) as required.

A4.2.1.8. **(8)** Minimum altimeter setting for the forecast period.

A4.2.1.9. **(9)** Change Group identifier (BECMG, TEMPO).

A4.2.1.10. **(10)** Temperature (forecast maximum and minimum for the 24-hour period).

A4.2.2. For more information on encoding and decoding TAF code, see AFMAN 15-124.

**A4.3. TAF Specification and Amendment Criteria.** The 30-hour forecast specifies the time of occurrence (to the nearest hour), the duration, and the intensity (where applicable) of the weather elements listed below. The weather elements listed in **Table A4.1** must be considered when issuing the TAF for AAFB and if expected to occur will be included in the forecast. If at any time the conditions listed in this section occur but are not correctly forecast or are forecast to occur and do not occur by the specified predominant change group ending time, the TAF must be amended.

**Table A4.1. TAF Specification and Amendment Criteria.**

| Forecast Element | TAF Amendment Criteria |
|---|---|
| Ceiling or Prevailing Visibility observed or expected to decrease to less than, or if below, increase to equal or exceed: | Category Limits<br>E □ 2,000 ft/3 statute miles<br>D < 2,000 ft but ≥ 1,000 ft/< 3 but ≥ 2 statute miles<br>C < 1,000 ft and ≥ 700 ft/< 3 but ≥ 2 statute miles<br>B < 700 ft and ≥ 200 ft/< 2 but ≥ 1/2 statute miles<br>A < 200 ft/< 1/2 statute mile<br><br>The lower of the values determines categories. |
| Surface Winds | a. Wind Speed: The difference between the predominant wind speed and the forecast wind speed is ≥ 10 knots<br><br>b. Wind Gusts: The difference between observed gusts and the forecast is ≥ 10 knots<br><br>c. Wind Direction: A change > 30 degrees when the predominant wind speed or gusts are expected to be 15 knots or greater. |
| Icing, not associated with thunderstorms, from the surface to 10,000ft Above Ground Level (AGL) | The beginning or ending of icing first meets, exceeds, or decreases to less than moderate (or greater) thresholds and was not specified in the forecast |
| Turbulence (for weather category II aircraft), not associated with thunderstorms from the surface to 10,000ft AGL | The beginning or ending of turbulence first meets, exceeds, or decreases to less than moderate (or greater) thresholds and was not specified in the forecast |
| Weather Warning Criteria | Occur, or are expected to occur during the forecast period, but were not specified in the forecast<br><br>Specified in the forecast but are no longer expected to occur during the forecast period |
| Altimeter Setting | Altimeter setting meets or exceeds 31.00 INS and was not specified in the forecast<br><br>Altimeter setting, if above, drops below 31.00 INS and was not specified during the forecast period<br><br>Altimeter setting drops below 28.00 INS and was not |

| | |
|---|---|
| | specified in the forecast<br><br>Altimeter setting, if below 28.00 INS, increases above 28.00<br>INS and was not specified in the forecast |
| Forecast Weather Advisory Criteria issued for amendable TAF criteria. | Occur, or are expected to occur during the forecast period, but were not specified in the forecast<br><br>Specified in the forecast but are no longer expected to occur during the forecast period<br><br>NOTE: AAFB does not currently issue any Forecast Weather Advisories |
| Thunderstorms | Incorrect forecast start or end time |
| Specification of Temporary Conditions (TEMPO group) | Forecast conditions specified as temporary become predominant conditions.<br><br>Forecast conditions specified as temporary do not occur during the cardinal hour as forecast<br><br>Forecast conditions specified as temporary are no longer expected to occur |
| Changes to Predominant Conditions<br>(BECMG or FM group) | Forecast change conditions occur before the beginning of the specified period of change and are expected to persist<br><br>Forecast change conditions do not occur within 30 minutes after the specified time.<br><br>Forecast change conditions are no longer expected to occur |
| Representative Conditions | Forecast conditions are not considered representative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to in-flight aircraft |

**A4.4. TAF Amendment Actions.** WF is primarily responsible for TAF amendment. In the event that WF is unable to amend due to an outage, the OWS will amend the TAF during duty hours.

**A4.5. Remarks.** The 26 OWS utilizes the following remarks accordingly. NOTE: YYGG/YYGG = Date/Time Group.

A4.5.1. **Limited METWATCH.** The WF will append the last line of the TAF with the words "LIMITED METWATCH YYGG TIL YYGG" when the airfield is open and no weather personnel are on duty and an operational automated sensor is not in use.

A4.5.2. **Last No Amendments.** The WF will append the last line of the TAF with the words "LAST NO AMDS AFT YYGG NEXT YYGG" when the airfield is closed and a TAF is not required.

## Attachment 5

## WATCH/WARNING/ADVISORY FORMAT

**A5.1. General.** This attachment explains format and notification procedures for AAFB WWAs.

**Figure A5.1. Weather Watch Example.**

Weather Watch 04-025 for Altus AFB (KLTS)
Valid 19/1900Z (19/1300L) to 20/0100Z (19/1900L)
Potential for Lightning exists within 5 nm at Altus AFB.

**Figure A5.2. Weather Warning Example.**

Weather Warning 04-026 for Altus AFB (KLTS)
Valid 19/2000Z (19/1400L) to 20/0100Z (19/1900L)
Freezing Precipitation (Any Intensity) Forecast Value 2 inches is forecast to occur at Altus AFB

**Figure A5.3. Weather Advisory Example.**

Weather Advisory 04-024 for Altus AFB (KLTS)
Valid 19/1900Z (19/1300L) UFN
Observed Crosswinds >= 25 kts observed at 25 kts are occurring at Altus AFB

**A5.2. Basic Format Elements.** The following criterion identifies the basic elements required in generating a WWA and identifies the validity of the alarm.

A5.2.1. **AAFB header and WWA Number.** Format numbering sequence is identified with the two-digit month, followed by the consecutive number of WWAs generated during that month. For example, "Weather Watch 04-025 for Altus AFB (KLTS)" would indicate that this is the 25th weather watch generated in the month of April.

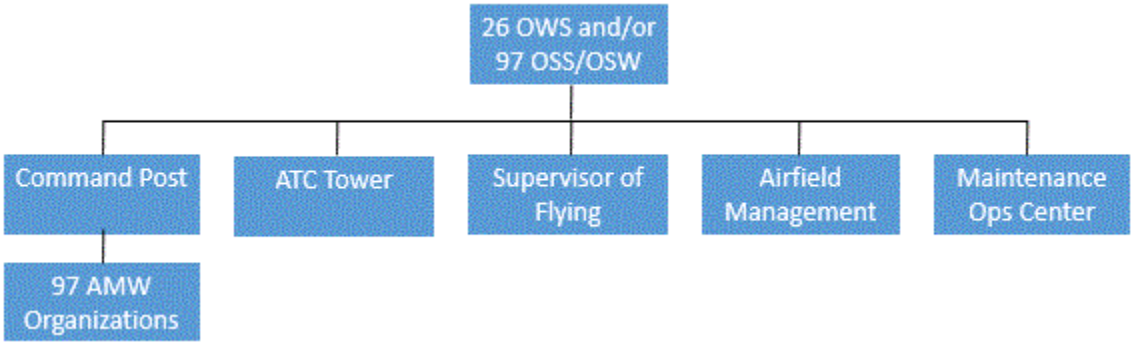
A5.2.2. **WWA Valid Times.** The start and end times of WWAs are indicated in UTC (CST or CDT) to UTC (CST or CDT). For example, "Valid 18/1900Z (18/1300L) to 19/0100Z (18/1900L)" indicates the time period of validity assuming the +6 hr conversion to UTC.

A5.2.3. **Text of the WWA.** Provides detailed explanation to the watch, warning or advisory and any additional remarks required (i.e. maximum value expected). For example, "Potential for Lightning exists within 5 NM at Altus AFB" indicates that a lightning watch is in effect for AAFB; lighting is expected to occur within 5NM.

**A5.3. Dissemination.** AAFB employs a pyramid notification network process to promptly disseminate, extend or cancel weather watches, warnings and advisories. **Figure A5.4**, shown below, identifies the agencies immediately notified. Agencies may monitor the status of watches, warnings and advisories via the WF SharePoint page at **https://usaf.dps.mil/teams/aetc-alt-97og-oss/weather/SitePages/Home.aspx** by clicking on the "Weather Watches, Warnings, and Advisories" link at the top of the webpage or by directly accessing the 26 OWS webpage at

**https://26ows.us.af.mil/by_type/wwa/index.cfm?UID=&BW=H&UF=O&AOR=1&USEHF=1**

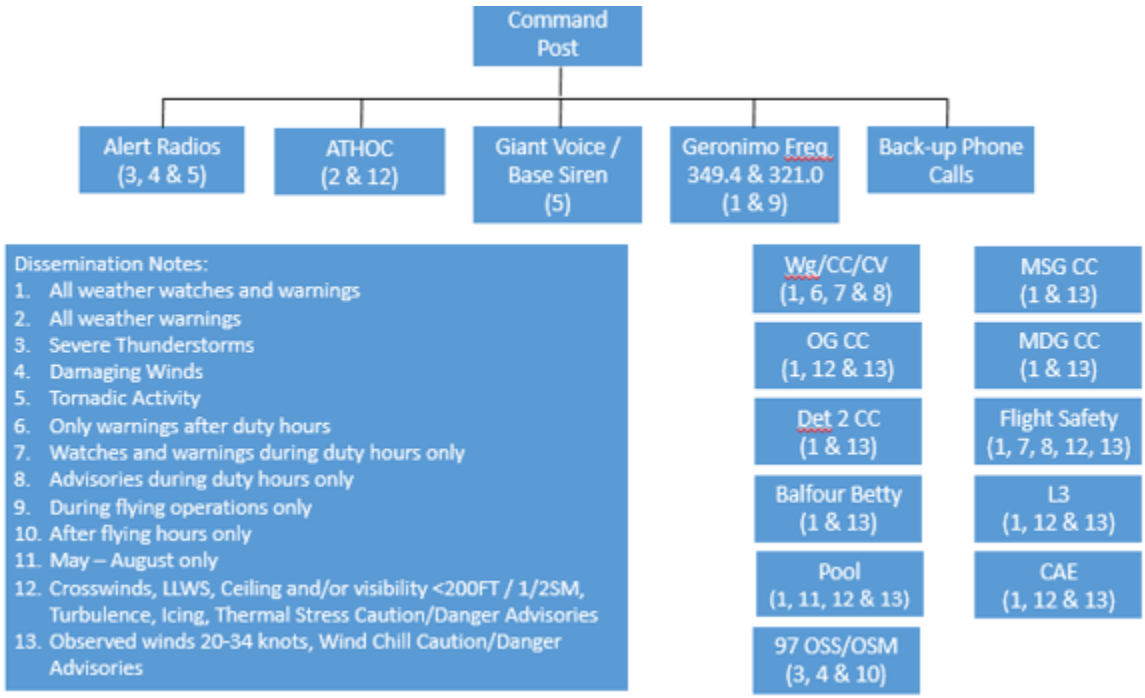
**Figure A5.4. Weather Watch, Warning, Advisory Notification Pyramid.**




A5.3.1. **The WF and/or 26 OWS Role.** The WF primarily or 26 OWS (when the WF is unable to due to an outage) initiates the notification process by disseminating, extending or canceling WWAs via JET.

A5.3.2. **97 AMW/CP Role.** The CP assumes responsibility for further dissemination via a variety of different methods dependent on the specific weather watch, warning, and/or advisory. The CP will initiate local checklists based upon the watch, warning or advisory issued. **Figure A5.5** identifies the agencies listed on CP checklists that receive watch, warning, and/or advisory notifications.

**Figure A5.5. Agencies Notified via 97 AMW/CP of Weather Watches, Warnings and Advisories.**




A5.3.3. **AAFB Agency Responsibilities.** Individual organizations will follow internal notification procedures to inform subordinate units.

**A5.4. Outages.** In the event JET or its communication channels are disrupted, the WF will utilize the 26 OWS, e-mail, fax, or phone calls to disseminate the information of watches, warnings and advisories to agencies listed in **Figure A5.4**.

**A5.5. Other Notifications.** WF leadership will send severe weather emails or request conference calls with wing leaders when forecasted weather is expected to cause serious damage to the base or degradation to the mission. This will provide a command signal for further evaluation into the 97 AMW's risk management decision cycle.

## Attachment 6

## FREQUENTLY USED AIRSPACE

**Figure A6.1. Common Air Refueling Tracks.**

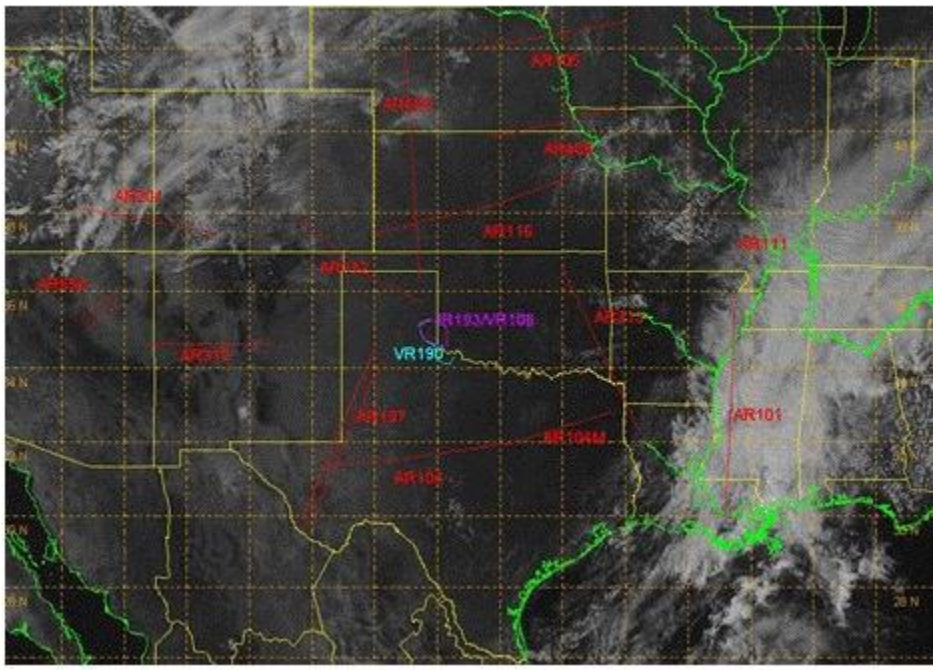



**Figure A6.2. Common Military Training Routes.**

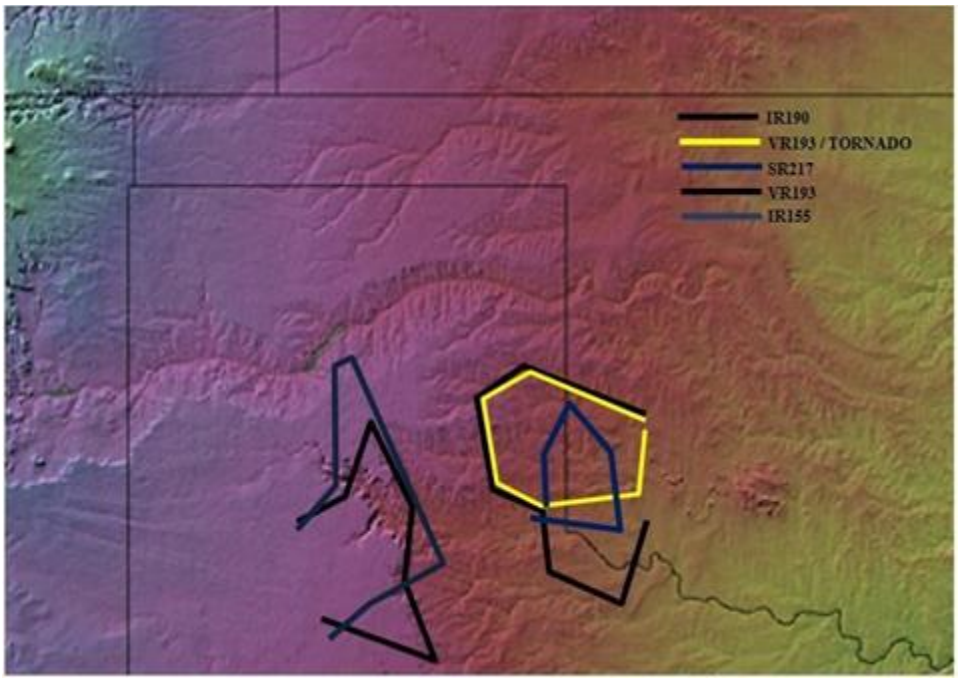


**Figure A6.3. Sooner Drop Zone.**

## Attachment 7

## METEOROLOGICAL SENSING EQUIPMENT/OBSERVATION LOCATIONS

**Figure A7.1. The AN/FMQ-19 AMOS Sensor Locations.**

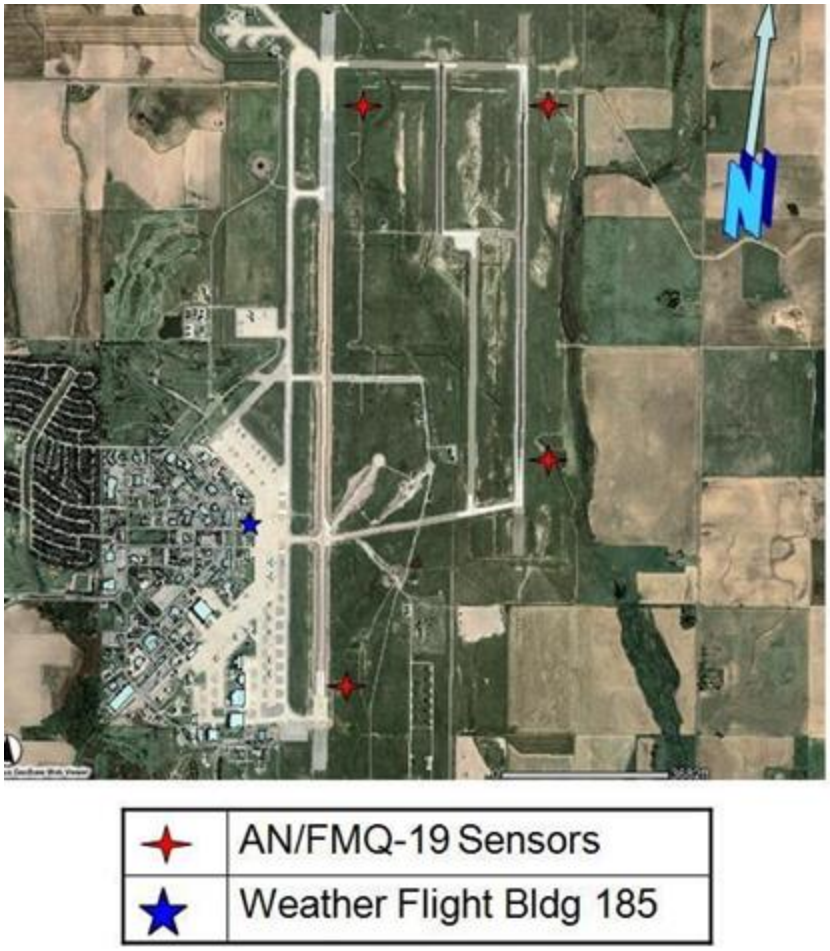


**Figure A7.2. The WF Backup Primary Observation Point(s).**

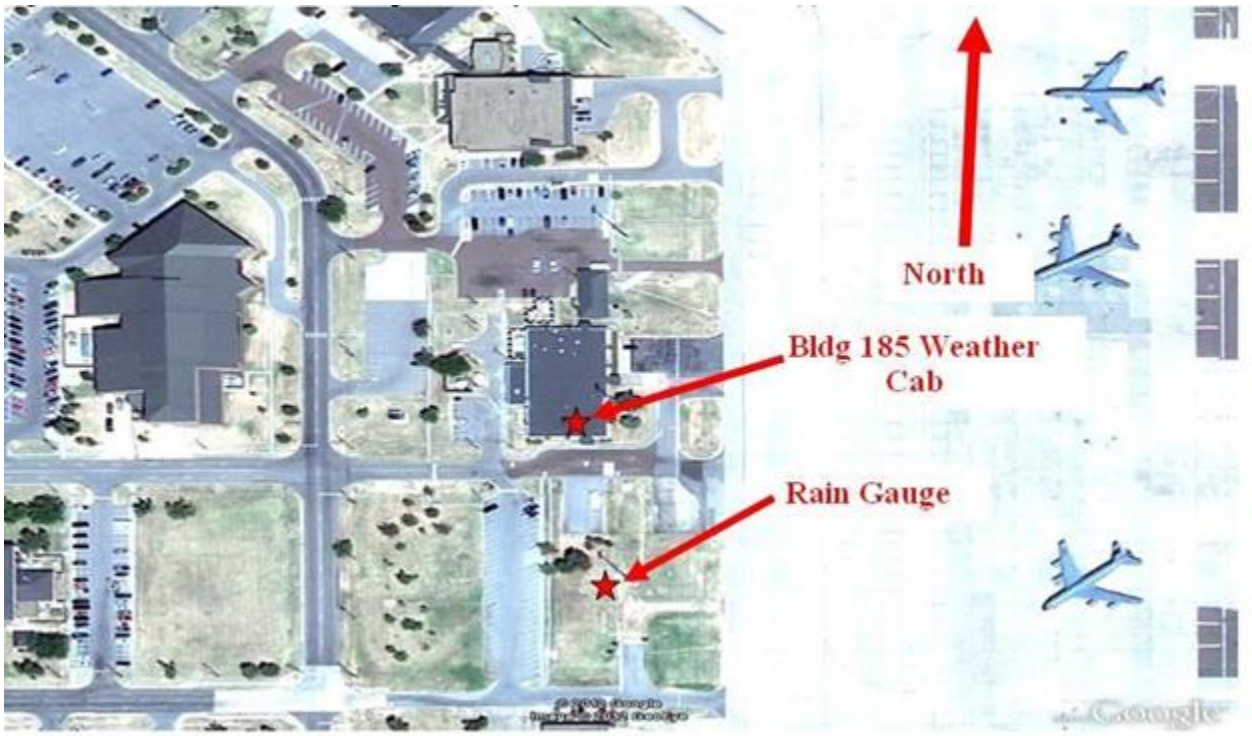



**Figure A7.3. The WF AOL Official Observation Point.**

## Attachment 8

## 97 AMW SUPPORTED ACTIVITIES/OPERATIONS WEATHER SENSITIVITIES

**Table A8.1. 54 ARS, 56 ARS and 730 AMTS (KC-135 & KC-46 Ops) Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Secure outside equipment<br>* Alert personnel |
| Tornado Warning† | Tornadic activity imminent/sighted | * Secure classified<br>* Take cover |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Closely watch to determine Go/No-Go and/or divert<br>* Retract flaps<br>* No open cargo door (≥65 knots) |
| Severe Thunderstorm Warning† | | * Closely watch to determine Go/No-Go and/or divert<br>* Retract flaps<br>* No open cargo door (≥65 knots) |
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert<br>* Retract flaps<br>* No open cargo door (≥65 knots) |
| Damaging Wind Warning† | | |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert * Retract flaps |
| Strong Wind Warning | Winds ≥ 35 but < 50 kts (not associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert |
| Lightning Watch | Lightning potential exists w/in 5 NM of AAFB | * Closely watch to determine Go/No-Go and/or divert |

| | | |
|---|---|---|
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | |
| Freezing Precipitation Watch† | Any Intensity | * Closely watch to determine Go/No-Go and/or divert<br>* Horizontal stab 2.5 down |
| Freezing Precipitation Warning† | | |
| Blizzard Watch† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM<br>(all criteria must be met) | * Closely watch to determine Go/No-Go and/or divert<br>* Horizontal stab 2.5 down |
| Blizzard Warning† | | |
| Heavy Snow Watch† | ≥ 1/2" in 12 hrs | * Closely watch to determine Go/No-Go and/or divert<br>* Horizontal stab 2.5 down<br>* Prioritize de-ice for schedule |
| Heavy Snow Warning† | | * Closely watch to determine Go/No-Go and/or divert<br>* Horizontal stab 2.5 down |
| Heavy Rain Watch | ≥ 2" in 12 hrs | * Closely watch to determine Go/No-Go and/or divert |
| Heavy Rain Warning | | |
| Crosswind Advisory | ≥ 15 kts but < 20 kts | * No touch-n-go<br>* Impacts some student training<br>* Peak x-wind will determine go-no-go |
| | ≥ 20 kts but < 25 kts | |
| | ≥ 25 kts | * All ops restricted |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * Min ground speed w/ ≥15kt shear (depends on severity)<br>* May cause flight ops to cease |

| | | |
|---|---|---|
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * No approaches or landings<br>* No training ops<br>* Can launch operational missions |
| Atmospheric Turbulence Advisory | ≥ Moderate SFC-10,000FT AGL | * No sustained flight (coord w/ WF to avoid)<br>* Mod = OK, (check shear)<br>* Severe = No GO |
| Atmospheric Icing Advisory | ≥ Moderate SFC-10,000FT AGL | * No sustained flight (coordinate with WF to avoid)<br>* Flight into severe icing is prohibited |
| Thermal Stress Caution Advisory | 90°F - 99°F (32°C - 37°C) | * Limit ground time for crews on the ramp |
| Thermal Stress Danger Advisory | ≥ 100°F (38°C) | * Limit ground time for crews on the ramp |
| Wind Chill Caution Advisory | ≤ 32°F (0°C) | * Limit ground time for crews on the ramp |
| Wind Chill Danger Advisory | ≤ -20°F (-29°C) | * Limit ground time for crews on the ramp |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * Closely watch to determine Go/No-Go and/or divert |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.2. 58 AS and 730 AMTS (C-17 Ops) Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Secure outside equipment<br>* Alert personnel |
| Tornado Warning† | Tornadic activity imminent/sighted | * Secure classified<br>* Take cover |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Closely watch to determine Go/No-Go and/or divert |
| Severe Thunderstorm Warning† | | * Closely watch to determine Go/No-Go and/or divert |

| | | |
|---|---|---|
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert |
| Damaging Wind Warning† | | |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert |
| Strong Wind Warning | Winds ≥ 35 but < 50 kts (not associated with thunderstorms) | * Closely watch to determine Go/No-Go and/or divert |
| Lightning Watch | Lightning potential exists w/in 5 NM of AAFB | * Closely watch to determine Go/No-Go and/or divert |
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | |
| Freezing Precipitation Watch† | Any Intensity | * Closely watch to determine Go/No-Go and/or divert |
| Freezing Precipitation Warning† | | |
| Blizzard Watch† | ≥ 3 hours, sustained winds or | * Closely watch to determine Go/No-Go and/or divert |

| | | |
|---|---|---|
| Blizzard Warning† | gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | |
| Heavy Snow Watch† | ≥ 1/2" in 12 hrs | * Closely watch to determine Go/No-Go and/or divert<br>* Prioritize de-ice for schedule |
| Heavy Snow Warning† | | * Closely watch to determine Go/No-Go and/or divert |
| Heavy Rain Watch | ≥ 2" in 12 hrs | * Closely watch to determine Go/No-Go and/or divert |
| Heavy Rain Warning | | |
| Crosswind Advisory | ≥ 15 kts but < 20 kts | * No NVG training ops<br>* Impacts some student training<br>* Restrictions all students on Assault Ops<br>* Possible restrictions PIQ on Touch-N-Go<br>* Possible restrictions PIQ on T/O or Full Stop |
| | ≥ 20 kts but < 25 kts | * Possible NVG operational msn restrictions<br>* Impacts some student training<br>* Possible restrictions all others on Touch-N-Go<br>* Peak x-wind will determine Go/No Go |
| | ≥ 25 kts but < 30 kts | * Possible NVG operational msn restrictions<br>* Impacts some student training<br>* No Touch-N-Go<br>* Possible restrictions all others on T/O or Full Stop<br>* Peak x-wind will determine Go/No Go |
| | ≥ 30 kts | * All ops restricted |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * N/A |
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * Only initial takeoffs and full stop landings |

| | | |
|---|---|---|
| Atmospheric Turbulence Advisory | ≥ Moderate SFC-10,000FT AGL | * Flight into severe turbulence prohibited |
| Thermal Stress Caution Advisory | 90°F - 99°F (32°C - 37°C) | * Limit ground time for crews on the ramp |
| Thermal Stress Danger Advisory | ≥ 100°F (38°C) | * Limit ground time for crews on the ramp |
| Wind Chill Caution Advisory | ≤ 32°F (0°C) | * Limit ground time for crews on the ramp |
| Wind Chill Danger Advisory | ≤ -20°F (-29°C) | * Limit ground time for crews on the ramp |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * Closely watch to determine Go/No-Go and/or divert |
| **NOTE:** † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.3. 97 MX Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Ask Pro Sups if their aircraft need to be moored, moved, or secured prior to severe weather<br>* If required, provide crash recover trailer/crane/special purpose vehicle |
| Tornado Warning† | Tornadic activity imminent/sighted | * Take cover |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Close all hanger doors<br>* Cease axle/full jacking operations<br>* Remove non-essential equip away from aircraft |
| Severe Thunderstorm Warning† | | * No towing, refueling or engine runs<br>* No work inside aircraft<br>* Close all hatches, entry doors and secure all panels<br>* Remove mx vehicles from the flight line<br>* Terminate all maintenance<br>* All personnel off flight line |

| | | |
|---|---|---|
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * All hatches, cowling, crew entry doors closed and loose panels secured<br>* Fire bottles lowered and pushed against NLG tires<br>* All vehicles moved to a designated parking space |
| Damaging Wind Warning† | | * Terminate all maintenance<br>* All other aircraft mx personnel off flight line |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * Cease axle jacking operations<br>* Terminate non-essential mx and suggest all nonessential mx personnel evacuate the flight line * Hanger doors are not operated unless emergency dictates<br>* Cease all fuel cell mx<br>* All flight line support equip not in use will be removed and secured in the designated FLSE sub-pool area with cables or chains. Cease use of all powered/non-powered stands. Remove from flight line and secure. |
| Strong Wind Warning | Winds ≥ 35 but < 50 kts (not associated with thunderstorms) | * Cease axle jacking operations<br>* Terminate non-essential mx and suggest all nonessential mx personnel evacuate the flight line * Hanger doors are not operated unless emergency dictates<br>* Cease all fuel cell mx<br>* All flight line support equip not in use will be removed and secured in the designated FLSE sub-pool area with cables or chains. Cease use of all powered/non-powered stands. Remove from flight line and secure. |
| Lightning Watch | Lightning potential exists w/in 5 NM of AAFB | * Notify all mx shops of event<br>* Remove non-essential AGE from flight line<br>* Close all aircraft hatches, entry doors and secure all panels |
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | * Pro Sups terminate all exterior mx ops immediately until further notice<br>* Pro Sups terminate all interior electrical and avionics ops immediately. Personnel remaining inside the aircraft will ensure all doors, hatches, and windows are closed |
| | | * MIS notified to safeguard ESD sensitive equipment<br>* All other aircraft mx personnel evacuate flight line * Perform a visual inspection of all aircraft for possible lightning strike damage after lightning passes |

| | | |
|---|---|---|
| Freezing Precipitation Watch† | Any Intensity | * Close all aircraft windows and hatches<br>* Raise flaps and slats |
| Freezing Precipitation Warning† | Any Intensity | * Move powered AGE and vehicles inside when not in use |
| Blizzard Watch† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * Close all aircraft windows and hatches |
| Blizzard Warning† | | |
| Heavy Snow Watch† | ≥ 1/2” in 12 hrs | * Close all aircraft windows and hatches |
| Heavy Snow Warning† | | |
| Heavy Rain Watch | ≥ 2” in 12 hrs | * Close all aircraft windows and hatches |
| Heavy Rain Warning | | |
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * (Vis < 300 feet) Refueling and explosive loaded vehicles will not be operated unless authorized by the Wg/CC * (Vis < 100 feet) Pro Sups will ensure that PMVs and flight line vehicles will not be operated on the flight line. Flashing lights will be used on all vehicles temporarily parked on the aircraft parking ramps |
| Wind Chill Danger Advisory | ≤ -20°F 29°C) | * Limit personnel workload to essential duties<br>* Observe time spent on outside activities |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * All full jacking operations on the flight line should be ceased (full jack limits for KC-135 is 20 kts/27 kts for C-17)<br>* Remove all non-essential AGE equip in the vicinity of aircraft<br>* Close aircraft cargo doors, windows, and hatches |

| | | |
|---|---|---|
| | | * Close all hangar doors when not required<br>* For wind speeds above 25 kts, cease use of B-2, B-7, and C-17 engine mx stands and genie lift and remove from flight line and secure<br>* B-5 stands may be used but not extended |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.4. 97 LRS Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Secure loose cargo and warehouse items |
| Tornado Warning† | Tornadic activity imminent/sighted | * Take cover |
| Severe Thunderstorm Warning† | Damaging Hail $\geq$ 3/4" in diameter and/or Damaging Winds $\geq$ 50 kts | * Secure loose cargo and warehouse items |
| Damaging Wind Warning† | Winds $\geq$ 50 kts (not associated with thunderstorms) | * Secure loose cargo and warehouse items |
| Moderate Thunderstorm Warning | Large Hail $\geq$ 1/4" but < 3/4" in diameter and/or Winds $\geq$ 35 but < 50 kts (associated with thunderstorms) | * Secure loose cargo and warehouse items |
| Freezing Precipitation Warning† | Any Intensity | * Caution Drivers |

| | | |
|---|---|---|
| Blizzard Warning† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * Caution Drivers |
| Heavy Snow Warning† | ≥ 1/2" in 12 hrs | * Caution Drivers |
| Heavy Rain Warning | ≥ 2" in 12 hrs | * Caution Drivers |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.5. 97 OSS/OSAM Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Warning† | Tornadic activity imminent/sighted | * Notify Radar/Airfield Systems & Ground Mx<br>* Take cover |
| Severe Thunderstorm Warning† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Notify Radar Mx to free-wheel DASR antenna for winds at 80kts |
| Damaging Wind Warning† | Winds ≥ 50 kts (not associated with thunderstorms) | * Notify Radar Mx to free-wheel DASR antenna for winds at 80kts |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * Notify Radar/Airfield Systems & Ground Mx |
| Freezing Precipitation Warning† | Any Intensity | * Notify Radar/Airfield Systems & Ground Mx |

| | | |
|---|---|---|
| Blizzard Warning† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, | * Notify Radar/Airfield Systems & Ground Mx |
| | considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | |
| Heavy Snow Warning† | ≥ 1/2" in 12 hrs | * Notify Radar/Airfield Systems & Ground Mx |
| Wind Chill Caution Advisory | ≤ 32°F (0°C) | * Notify Radar Mx, Airfield Systems and Ground Radio |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * Notify Radar Mx |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.6. 97 OSS/OSAR Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Warning† | Tornadic activity imminent/sighted | * Notify Radar Mx<br>* DASR antenna free-wheeled at 80 kts * Take cover |
| Severe Thunderstorm Warning† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Notify Radar Mx<br>* DASR antenna free-wheeled at 80 kts * Take cover |
| Damaging Wind Warning† | Winds ≥ 50 kts (not associated with thunderstorms) | * Notify Radar Mx<br>* DASR antenna free-wheeled at 80 kts * Take cover |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * Advise aircrews<br>* Solicit PIREPS |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.7. 97 OSS/OSAT Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Advise aircrews and record on ATIS<br>* Notify all tower personnel and advise them to stay indoors |
| Tornado Warning† | Tornadic activity imminent/sighted | * Advise aircrews and record on ATIS<br>* Initiate/complete tower evacuation |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Advise aircrews and record on ATIS<br>* Notify all tower personnel and advise them to stay indoors |
| Severe Thunderstorm Warning† | | * Advise aircrews and record on ATIS<br>* Evacuate Tower (70kts)<br>* Take cover |
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * Advise aircrews and record on ATIS |
| Damaging Wind Warning† | | * Advise aircrews and record on ATIS<br>* Evacuate Tower (70kts)<br>* Take cover |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * Advise aircrews and record on ATIS |
| Strong Wind Warning | Winds ≥ 35 but < 50 kts (not associated with thunderstorms) | * Advise aircrews and record on ATIS |
| Lightning Watch | Lightning potential exists w/in 5 NM of AAFB | * Advise aircrews and record on ATIS |
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | |

| | | |
|---|---|---|
| Freezing Precipitation Watch† | Any Intensity | * Advise aircrews and record on ATIS |
| Freezing Precipitation Warning† | | |
| Blizzard Watch† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * Advise aircrews and record on ATIS |
| Blizzard Warning† | | |
| Heavy Snow Watch† | ≥ 1/2” in 12 hrs | * Advise aircrews and record on ATIS |
| Heavy Snow Warning† | | |
| Heavy Rain Watch | ≥ 2” in 12 hrs | * Advise aircrews and record on ATIS |
| Heavy Rain Warning | | |
| Crosswind Advisory | ≥ 15 kts but < 20 kts | * Advise aircrews and record on ATIS |
| | ≥ 20 kts but < 25 kts | |
| | ≥ 25 kts but <30 kts | |
| | ≥ 30kts | |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * Advise aircrews and record on ATIS |
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * Advise aircrews and record on ATIS |
| Atmospheric Turbulence Advisory | ≥ Moderate SFC-10,000FT AGL | * Advise aircrews and record on ATIS |

| | | |
|---|---|---|
| Atmospheric Icing Advisory | ≥ Moderate SFC-10,000FT AGL | * Advise aircrews and record on ATIS |
| Thermal Stress Caution Advisory | 90°F - 99°F (32°C - 37°C) | * Advise aircrews and record on ATIS |
| Thermal Stress Danger Advisory | ≥ 100°F (38°C) | * Advise aircrews and record on ATIS |
| Wind Chill Caution Advisory | ≤ 32°F (0°C) | * Advise aircrews and record on ATIS |
| Wind Chill Danger Advisory | ≤ -20°F (-29°C) | * Advise aircrews and record on ATIS |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * Advise aircrews and record on ATIS |
| **NOTE:** † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.8. 97 OSS/OSAA Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * Activate SCN & pass Message 2A/2B<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Tornado Warning† | Tornadic activity imminent/sighted | * Activate SCN & pass Message 3A/3B<br>* Notify contractors working on the afld<br>* Notify NAMO, DAFM, or AFM<br>* Take shelter in the vault |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * Notify AFLD 1/2/3 (if on afld) * Notify NAMO, DAFM, or AFM |
| Severe Thunderstorm Warning† | | * Activate SCN & pass Message 1A/1B<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * Notify contractors working on the afld<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Damaging Wind Warning† | | |

| | | |
|---|---|---|
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | * Notify contractors working on the afld<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Freezing Precipitation Watch† | Any Intensity | * Notify contractors working on the afld<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Freezing Precipitation Warning† | | |
| Blizzard Watch† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * Notify contractors working on the afld<br>* Notify AFLD 1/2/3 (if on afld)<br>* Notify NAMO, DAFM, or AFM |
| Blizzard Warning† | | |
| Heavy Snow | ≥ 1/2” in 12 hrs | * Notify contractors working on the afld |
| Watch† | | * Notify AFLD 1/2/3 (if on afld) * Notify NAMO, DAFM, or AFM |
| Heavy Snow Warning† | | |
| **NOTE:** † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.9. 97 CES Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Freezing Precipitation Watch† | Any Intensity | * Consider snow and ice plan activation |
| Blizzard Watch† | ≥ 3 hours, sustained winds or | * Consider snow and ice plan activation |

| | | |
|---|---|---|
| Blizzard Warning† | gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * Activate snow and ice plan |
| Heavy Snow Watch† | ≥ 1/2" in 12 hrs | * Consider snow and ice plan activation |
| Heavy Snow Warning† | | * Activate snow and ice plan |
| NOTE: † indicates a Weather watch or warning that triggers WF SWAP operations. | | |

**Table A8.10. 97 AMW/CP Customer Response Actions.**

| Criterion | | Customer Actions |
|---|---|---|
| Tornado Watch† | Potential for tornadic activity exists | * QRC #500A |
| Tornado Warning† | Tornadic activity imminent/sighted | * QRC #502 |
| Severe Thunderstorm Watch† | Damaging Hail ≥ 3/4" in diameter and/or Damaging Winds ≥ 50 kts | * QRC #500 |
| Severe Thunderstorm Warning† | | * QRC #501 |
| Damaging Wind Watch† | Winds ≥ 50 kts (not associated with thunderstorms) | * QRC #500 |
| Damaging Wind Warning† | | * QRC #501 |
| Moderate Thunderstorm Warning | Large Hail ≥ 1/4" but < 3/4" in diameter and/or Winds ≥ 35 but < 50 kts (associated with thunderstorms) | * QRC #501 |

| | | |
|---|---|---|
| Strong Wind Warning | Winds ≥ 35 but < 50 kts (not associated with thunderstorms) | * QRC #501 |
| Lightning Watch | Lightning potential exists w/in 5 NM of AAFB | * QRC #500 |
| Lightning Warning | Observed Lightning occurring w/in 5 NM of AAFB | * QRC #501 |
| Blizzard Watch† | ≥ 3 hours, sustained winds or gusts ≥ 30 kts, considerable falling and/or blowing snow, surface visibility ≤ 1/4 SM (all criteria must be met) | * QRC #500 |
| Blizzard Warning† | | * QRC #501 |
| Heavy Snow Watch† | ≥ 1/2” in 12 hrs | * QRC #500 |
| Heavy Snow Warning† | | * QRC #501 |
| Heavy Rain Watch | ≥ 2” in 12 hrs | * QRC #500 |
| Heavy Rain Warning | | * QRC #501 |
| Crosswind Advisory | ≥ 15 kts but < 20 kts | * QRC #500 |
| | ≥ 20 kts but < 25 kts | |
| | ≥ 25 kts but < 30 kts | |

| | | |
|---|---|---|
| | ≥ 30 kts | |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * QRC #500 |
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * QRC #500 |
| Low-Level Wind Shear Advisory | below 2,000FT AGL w/in 5NM | * QRC #500 |
| Ceiling and Visibility Advisory | ≤ 200FT AGL/1/2SM | * QRC #500 |
| Atmospheric Turbulence Advisory | ≥ Moderate SFC-10,000FT AGL | * QRC #500 |
| Atmospheric Icing Advisory | ≥ Moderate SFC-10,000FT AGL | * QRC #500 |
| Thermal Stress Caution Advisory | 90°F - 99°F (32°C - 37°C) | * QRC #500 |
| Thermal Stress Danger Advisory | ≥ 100°F (38°C) | * QRC #500 |
| Wind Chill Caution Advisory | ≤ 32°F (0°C) | * QRC #500 |
| Wind Chill Danger Advisory | ≤ -20°F (-29°C) | * QRC #500 |
| Surface Wind Advisory | ≥ 20 but < 35 kts | * QRC #500 |

**Table A8.11. Platform Limitations.**

| LIMITATIONS OF AAFB PLATFORMS | | | | | |
|---|---|---|---|---|---|
| PLATFORM | Max X-Wind | T-Storm Limits | Wx Limits | CIG (FT) /VIS (SM) | RVR (FT) |

| | | | | | |
|---|---|---|---|---|---|
| C-17 | 30 kts / Transition = 25 kts | No TS w/in 5nm (Tactical Drop)<br>No TS w/in 10nm (<23K' MSL)<br>No TS w/in 20nm (>23K' MSL) | No flight in severe icing.<br><br>No flight in forecasted severe turbulence or known moderate/severe mountain wave turbulence. | 200 / 1/2; Transition = 300 / ¾ | 1600'; Transition = 4000' |
| | | | | | |
| KC-135/KC-46 | 25 kts / Transition = 15 kts | No TS w/in 10nm (<23K' MSL)<br>No TS w/in 20nm (>23K' MSL) | No flight in severe icing.<br>No flight in forecasted severe turbulence or known moderate/severe mountain wave turbulence. | 200 / 1/2; Transition = 300 / 3/4 | 1600'; Transition = 4000' |
| Practice Engine Failure Maneuvers | 15 kts | | | Day:<br>Circling mins or 600/2<br>Night:<br>Greater of 1000/2 or circling mins | |

**Table A8.12. Mission Limiting and Impacting Criteria.**

| ACFT | WEATHER CONDITION | IMPACT/LIMITATION | MEF AMEND REQ'D |
|---|---|---|---|
| TAKE-OFF/LANDING MISSION LIMITING CONDITIONS | | | |
| ALL | Observed/Forecast Moderate Icing | Short periods through Moderate Icing (< 10 mins) | |
| TAKE-OFF/LANDING MISSION IMPACTING CONDITIONS | | | |
| ALL | Tornado (Forecast/Observed) | No takeoffs/landings | X |

| | | | |
|---|---|---|---|
| | Hail (Any Size Forecast/Observed) | No takeoffs/landings | X |
| | Damaging Winds ≥ 50 kts (Forecast/Observed) | No takeoffs/landings | X |
| | Observed Thunderstorm/Lightning w/in 5NM | No takeoffs/landings | X |
| | Freezing Precipitation (Forecast/Observed) | No takeoffs/landings | X |
| | Observed/forecasted Severe Icing/Turbulence | No takeoffs/landings | X |
| | Ceilings/Visibility ≤ 200ft/ 1/2 SM | No takeoff (unless takeoff alternate is filed) | X |
| | 1/2" of snow/slush/water on RWY | No takeoffs/landings | |
| | RVR < 1600ft | No takeoffs/landings (unless operational necessity) | |
| KC135 | Strong Winds ≥ 35 kts (Forecast/Observed) | Takeoffs/landings require OG/CC waiver | X |
| | Crosswinds > 25 kts (dry)/15 kts (wet) | No takeoffs/landings | X |
| | Wind shear Loss (>15kts) | No takeoffs/landings | X |
| | RCR < 04 | No takeoffs/landings | |
| C17 | Tail Wind Component (>10 kts) | No takeoffs | |
| | Max Wind 40kts (any direction) | No takeoffs | X |
| | Crosswinds >30 kts (dry)/30 kts (wet) | No takeoffs | X |
| | RCR < 03 | No takeoffs | |
| | Tail wind Component (> 10 kts) | No takeoffs | |
| | Head wind Component (> 40 kts) | No takeoffs | |
| TAKE-OFF ALTERNATE/DIVERT LIMITING CONDITIONS | | | |
| ALL | Observed/Forecast conditions < 600ft/2SM (2hr flight time) | Location cannot be used as a takeoff alternate (precision approach) | |
| | Observed/Forecast conditions < 800ft/2SM (2hr flight time) | Location cannot be used as a takeoff alternate (non-precision approach) | |
| | Forecast conditions less than published approach mins | File 2 Alternates | |

| | | | |
|---|---|---|---|
| | Forecast Surface winds exceed crosswind limits (cor for RCR) | File 2 Alternates | |
| TAKE-OFF ALTERNATE/DIVERT IMPACTING CONDITIONS | | | |
| ALL | Observed Visibility/Ceiling < 200ft/ ½ SM (w/in 30min flight time) | Location cannot be used as a takeoff alternate | |
| | RVR < 2400ft (w/in 30 min flight time) | Location cannot be used as a takeoff alternate | |
| | Observed conditions < 500ft/1SM above approach mins (2hr flight time) | Location cannot be used as a takeoff alternate | |
| | Observed/Forecast conditions < 600ft/2SM (2hr flight time) | Location cannot be used as a takeoff alternate (precision approach) | |
| LANDING/DIVERT LIMITING/IMPACTING CONDITIONS | | | |
| ALL | Ceiling of 1000ft or 500ft above lowest compatible minimum, whichever is higher; and a visibility of 2 SM or 1 SM above lowest compatible minimum, whichever is higher. | Location cannot be used | |
| | Forecast crosswinds out of landing limits | Location cannot be used | |
| APPROACH LIMITATIONS/IMPACTS | | | |
| C17 | Observed Ceiling < 200ft | No Circling Approach | X |
| | Observed Visibility < 1/2 SM | No Circling Approach | X |
| TRANSITION (TOUCH-N-GO LIMITING/IMPACTING CONDITIONS | | | |
| ALL | Ceiling < 300ft and/or Vis < 3/4 SM | No touch-n-go's | X |
| | Ceiling < 2000ft/3SM | Cannot fly VFR at KLTS | X |
| | RVR < 4000ft | No touch-n-go's | |
| | Slush on RWY (any breaking action) | No touch-n-go's | |
| | Any Weather Warning Criteria Impacting Takeoffs/Landings as defined above | | X |
| KC135 | RCR < 09 | No touch-n-go's | |
| | Crosswind Component $\geq$ 15kts | No touch-n-go's | |
| | Ceiling < 2000ft/3SM | Limited VFR available | X |
| | Ceiling < 1500ft/3SM | No VFR available | X |
| C17 | RCR < 12 | No touch-n-go's | |

| | | | |
|---|---|---|---|
| | | | |
| | Crosswind Component > 25 kts (w/ IP) | No touch-n-go's | X |
| ENROUTE WEATHER LIMITATIONS | | | |
| ALL | Thunderstorms En-route | Avoid by 20NM at or above FL230 | |
| | Thunderstorms En-route | Avoid by 10NM below FL230 | |
| | Heavy Rain showers en-route | Avoid by 5NM | |
| | FL within 5000ft of freezing level in cloud | Avoid area due to high potential for lightning/electrostatic discharge | |
| | Gust Fronts and/or Rapidly Moving Thunderstorms En-Route | Avoid | |
| ENROUTE WEATHER IMPACTS | | | |
| ALL | Observed or Forecast Moderate mountain wave turbulence | No flight through area | X |
| ALL | Observed or Forecast Severe Icing (any type) | Flight into area is prohibited | X |
| | Observed or Forecast Severe Turbulence | Flight into area is prohibited | X |
| AIR REFUELING MISSION LIMITING CONDITIONS | | | |
| ALL | Observed/Forecast Moderate Icing | Short Periods through Moderate Icing (<10 min) | |
| AIR REFUELING MISSION IMPACTING CONDITIONS | | | |
| ALL | Severe Turbulence/Icing on A/R track | Do not launch mission | X |
| | Moderate turbulence encountered on A/R track | Terminate air refueling | X |
| | FL Visibility < 1NM | Do not approach tanker in A/R track | X |
| | FL Visibility < 2NM | Do not approach tanker in | X |
| | | A/R track (Tanker Cell Only); No formation A/R | |
| MILITARY TRAINING ROUTE MISSION IMPACTS/LIMITATIONS | | | |
| C17 | IR Routes | No limitations on CIG/VIS | |
| | VR Routes | 3000ft/5SM | X |
| | SR Routes | 1500ft/3SM or as published in AP1B | X |

| | | | |
|---|---|---|---|
| DROP ZONE MISSION LIMITATIONS | | | |
| C17 | Ceiling/Visibility < 1500ft/1/2 SM | Student restriction | |
| | NIGHT VMC CIG/VIS < 2000ft/3SM | Air Drops not recommended | |
| | Heavy Precipitation at Drop Zone | Air Drops not recommended | X |
| | SFC wind > 17 kts | No heavy equipment drops | X |
| DROP ZONE LIMITATIONS | | | |
| C17 | Ceiling/Visibility < 300ft/1/2 SM | No Air Drops | X |
| | Heavy Precipitation at Drop Zone | Air Drops not recommended | |
| | SFC wind > 17 kts | No heavy equipment drops | X |
| | Night VMC Restriction | 2000ft/3SM | X |
| NVG OPERATIONS LIMITATIONS | | | |
| C17 | Ceilings/Visibility ≤ 1500ft/3SM | Student restriction | |
| | Crosswind ≥ 20kts (>15kts no NVG training) | Need OG/CC approval to continue ops | |
| NVG OPERATIONS IMPACTS | | | |
| C17 | Ceilings/VIS < than 600ft / 2SM Ceilings/VIS < 600 ft/2 SM | Need OG/CC approval to continue ops | X |
| | Crosswind ≥ 20kts | NVG ops prohibited | X |
| TACTICS OPERATIONS MISSION IMPACTS | | | |
| ALL | Ceiling below 7000'AGL | No local tactical approaches | X |

## Attachment 9

## SAMPLE STAFF WEATHER PRODUCTS

**A9.1. Staff Weather Briefing Products.** Staff weather briefing products serve as a vital method of fulfilling the staff meteorological requirements leveraged on the WF as discussed in **Chapter 6** of this instruction. Figures **A9.1-A9.4** provide sample staff weather products and information on format and decoding. The format of the figures below are subject to change based on customers' needs and might not reflect the latest version.

**Figure A9.1. Staff Weather Briefing Commander's Senior Staff Briefing Sample.**

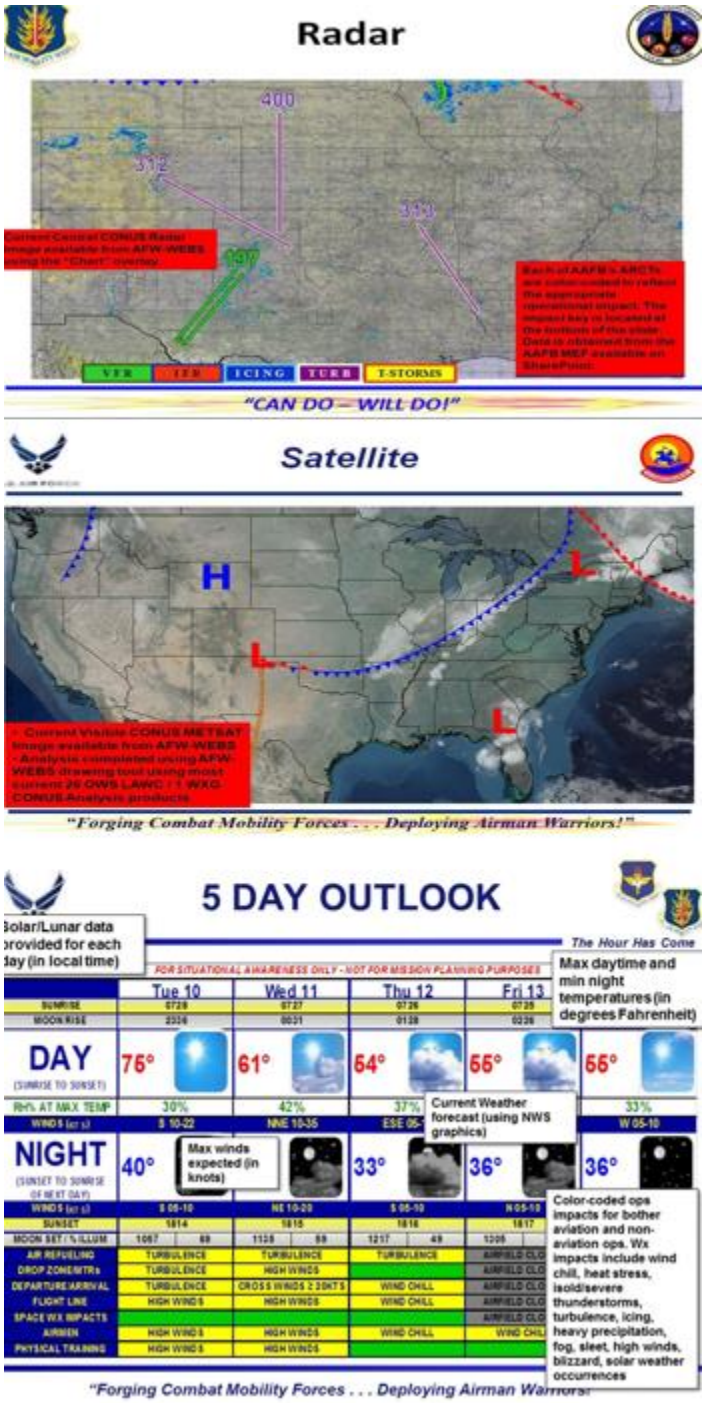
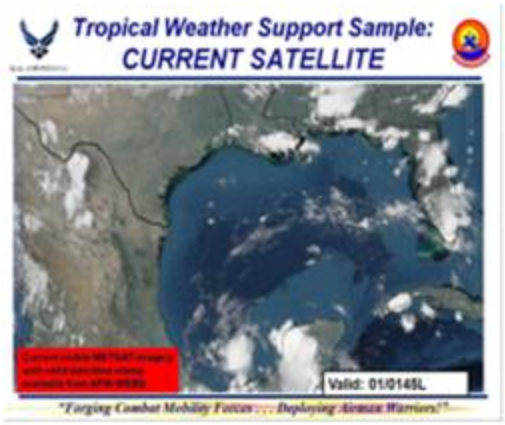



**Figure A9.2. Tropical Weather Support Briefing Package Sample.**


Tropical Weather Support Sample:
CURRENT SATELLITE
Valid: 01/0145L
"Forging Combat Mobility Forces . . . Deploying Airmen Warriors!"

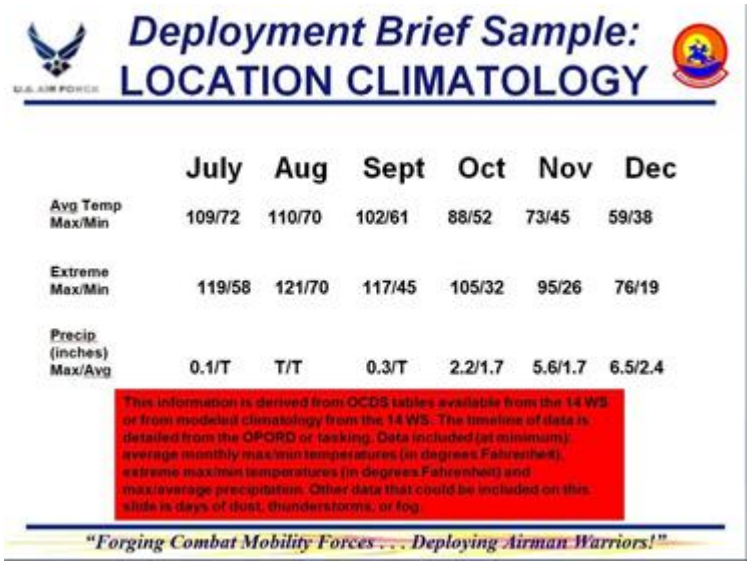

GUSTAV
"Forging Combat Mobility Forces . . . Deploying Airmen Warriors!"


STORM NAME FORECAST
INITIAL
01/0400L
28.4N 88.5W
100 KTS
15 NM off LA coast
"Forging Combat Mobility Forces . . . Deploying Airmen Warriors!"


GUSTAV
Tropical Storm Force Wind Speed Probabilities
"Forging Combat Mobility Forces . . . Deploying Airmen Warriors!"


EXTENDED FORECAST
5 DAY OUTLOOK
MON 01
TUE 02
WED 03
THU 04
FRI 05
Altus AFB
Keesler AFB
Eglin AFB
"Forging Combat Mobility Forces . . . Deploying Airmen Warriors!"

**Figure A9.3. Deployment Briefing Weather Brief Sample.**

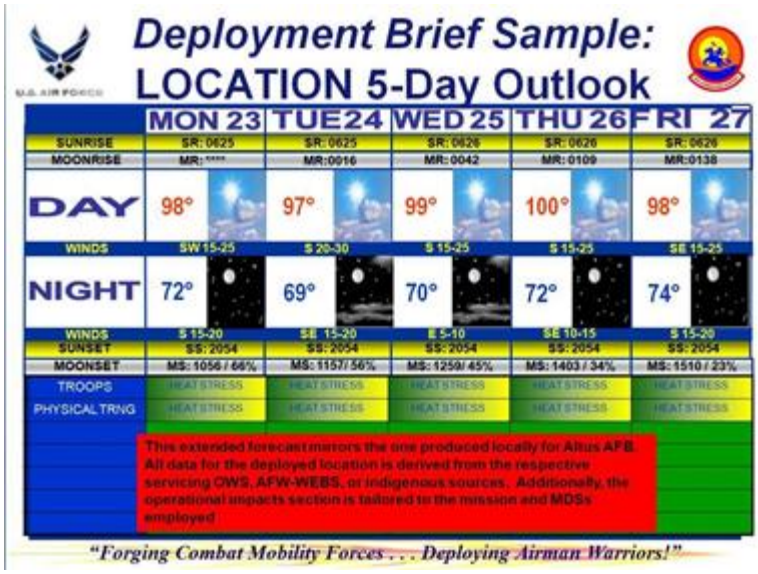


**Deployment Brief Sample:**
**LOCATION CLIMATOLOGY**

| | July | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|
| Avg Temp Max/Min | 109/72 | 110/70 | 102/61 | 88/52 | 73/45 | 59/38 |
| Extreme Max/Min | 119/58 | 121/70 | 117/45 | 105/32 | 95/26 | 76/19 |
| Precip (inches) Max/Avg | 0.1/T | T/T | 0.3/T | 2.2/1.7 | 5.6/1.7 | 6.5/2.4 |

This information is derived from OCDS tables available from the 14 WS or from modeled climatology from the 14 WS. The timeline of data is detailed from the OPORD or tasking. Data included (at minimum): average monthly max/min temperatures (in degrees Fahrenheit); extreme max/min temperatures (in degrees Fahrenheit) and max/average precipitation. Other data that could be included on this slide is days of dust, thunderstorms, or fog.

*"Forging Combat Mobility Forces . . . Deploying Airman Warriors!"*



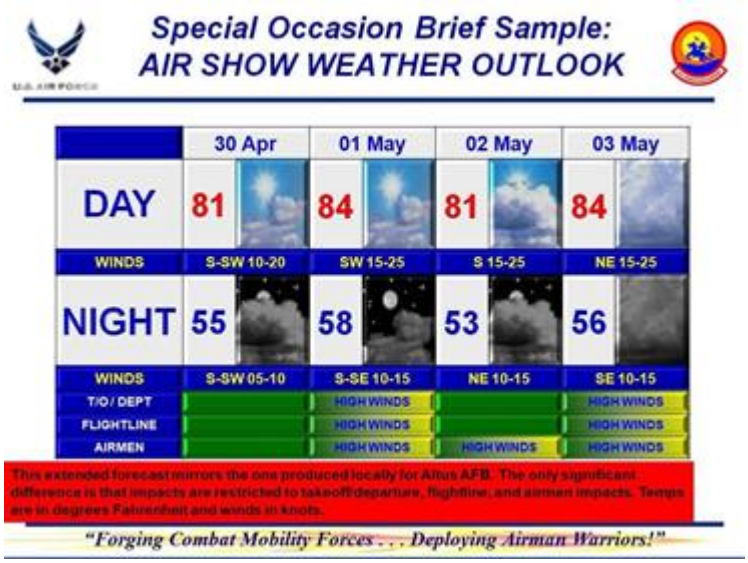
**Deployment Brief Sample:**
**LOCATION 5-Day Outlook**

| | MON 23 | TUE 24 | WED 25 | THU 26 | FRI 27 |
|---|---|---|---|---|---|
| SUNRISE | SR: 0625 | SR: 0625 | SR: 0626 | SR: 0626 | SR: 0626 |
| MOONRISE | MR: **** | MR: 0016 | MR: 0042 | MR: 0109 | MR: 0138 |
| DAY | 98° | 97° | 99° | 100° | 98° |
| WINDS | SW 15-25 | S 20-30 | S 15-25 | S 15-25 | SE 15-25 |
| NIGHT | 72° | 69° | 70° | 72° | 74° |
| WINDS | S 15-20 | SE 15-20 | E 5-10 | SE 10-15 | S 15-20 |
| SUNSET | SS: 2054 | SS: 2054 | SS: 2054 | SS: 2054 | SS: 2054 |
| MOONSET | MS: 1056 / 66% | MS: 1157 / 56% | MS: 1259 / 45% | MS: 1403 / 34% | MS: 1510 / 23% |
| TROOPS | HEAT STRESS | HEAT STRESS | HEAT STRESS | HEAT STRESS | HEAT STRESS |
| PHYSICAL TRNG | HEAT STRESS | HEAT STRESS | HEAT STRESS | HEAT STRESS | HEAT STRESS |

This extended forecast mirrors the one produced locally for Altus AFB. All data for the deployed location is derived from the respective servicing OWS, AFW-WEBS, or indigenous sources. Additionally, the operational impacts section is tailored to the mission and MDSs employed.

*"Forging Combat Mobility Forces . . . Deploying Airman Warriors!"*

**Figure A9.4. Special Occasion Weather Brief Sample.**



## Attachment 10

## SAMPLE MISSION WEATHER PRODUCTS

**A10.1. Planning Weather.** Planning weather is available on the WF SharePoint page. The data is produced during the weather technician's swing shift for the next flying day. When the airfield is closed on weekends and holidays, planning weather for the next flying day is compiled on the WF swing shift prior to airfield closing and will be posted prior to the airfield reopening. Figures **A10.1**-**A10.6** provide the planning weather sample, format, and decoding.

**Figure A10.1. Local Planning Weather Sample, Format, and Decoding.**


Format: Weather data is in TAF format to include clouds, visibility, winds, hazards, and solar-lunar data. Additionally, max temp, min ALSTG, and PA is provided in 2-hour increments.

This information is provided for mission planning and training and is NOT amended.

Decoding:
A – Valid Times (Date); Forecaster Initials
B – Solar/Lunar Data (Z)
C – Forecast conditions (magnetic winds in knots; x-winds in knots; Surface Vis in SM; wx conditions in TAF format; sky condition (TAF Format, heights AGL); Hazards (Icing, Turbulence, TSTMS, LLWS, etc.)
D – Max Temp (°C); MIN ALSTG (inches); Max PA (Feet)

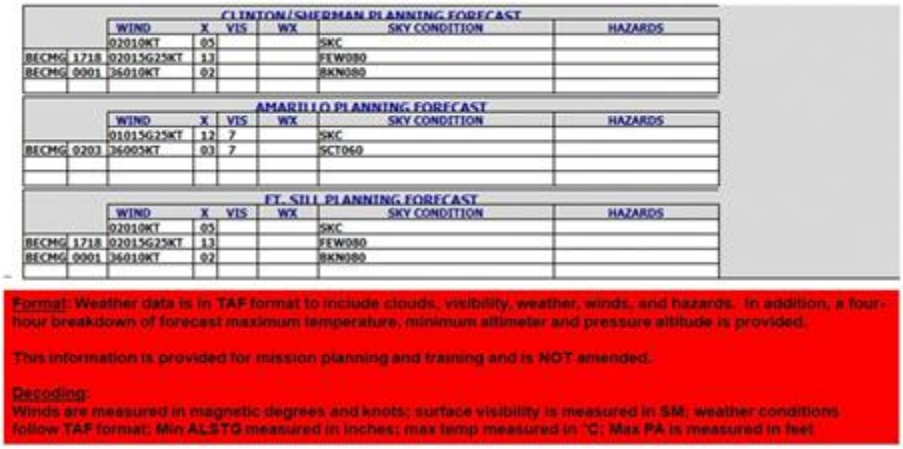
**Figure A10.2. Local Planning Weather Sample, Format, and Decoding (AR Routes).**


Format: General forecast conditions broken down by AR track identifying sky condition at flight level, forecast visibility, winds at several flight levels and whether turbulence, icing and/or thunderstorms are expected on the route. Temperature and temperature deviation are also produced.

This information is provided for mission planning and training and is NOT amended.

Decoding:
Forecast conditions in TAF Format; First column Vis is FL Vis out of cloud (in meters); second column in FL Vis (measured in NM); FL winds in true degrees/knots; temps in °C; and temp deviation measured in °C

**Figure A10.3. Local Planning Weather Sample, Format, and Decoding (Transition Bases).**



CLINTON/SHERMAN PLANNING FORECAST

| | | WIND | X | VIS | WX | SKY CONDITION | HAZARDS |
|---|---|---|---|---|---|---|---|
| | | 02010KT | 05 | | | SKC | |
| BECMG | 1718 | 02015G25KT | 13 | | | FEW080 | |
| BECMG | 0001 | 36010KT | 02 | | | BKN080 | |

AMARILLO PLANNING FORECAST

| | | WIND | X | VIS | WX | SKY CONDITION | HAZARDS |
|---|---|---|---|---|---|---|---|
| | | 01015G25KT | 12 | 7 | | SKC | |
| BECMG | 0203 | 36005KT | 03 | 7 | | SCT060 | |

FT. SILL PLANNING FORECAST

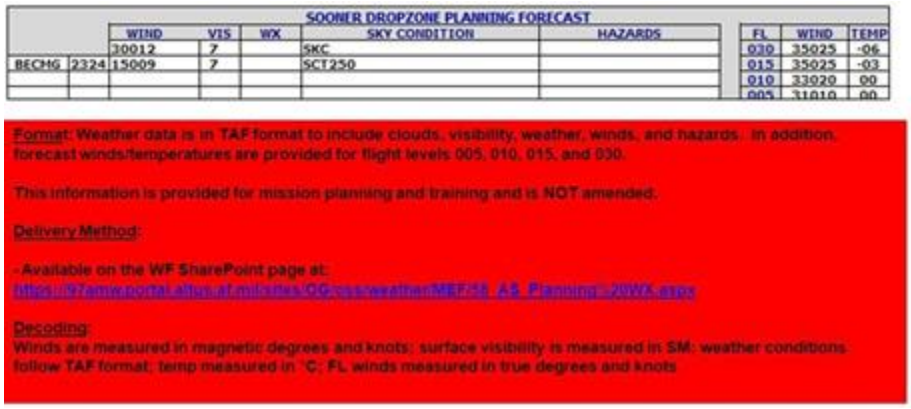
| | | WIND | X | VIS | WX | SKY CONDITION | HAZARDS |
|---|---|---|---|---|---|---|---|
| | | 02010KT | 05 | | | SKC | |
| BECMG | 1718 | 02015G25KT | 13 | | | FEW080 | |
| BECMG | 0001 | 36010KT | 02 | | | BKN080 | |

Format: Weather data is in TAF format to include clouds, visibility, weather, winds, and hazards. In addition, a four-hour breakdown of forecast maximum temperature, minimum altimeter and pressure altitude is provided.

This information is provided for mission planning and training and is NOT amended.

Decoding:
Winds are measured in magnetic degrees and knots; surface visibility is measured in SM; weather conditions follow TAF format; Min ALSTG measured in inches; max temp measured in °C; Max PA is measured in feet

**Figure A10.4. Local Planning Weather Sample, Format, and Decoding (Drop Zones).**



SOONER DROPZONE PLANNING FORECAST

| | | WIND | VIS | WX | SKY CONDITION | HAZARDS |
|---|---|---|---|---|---|---|
| | | 30012 | 7 | | SKC | |
| BECMG | 2324 | 15009 | 7 | | SCT250 | |
| | | | | | | |
| | | | | | | |

| FL | WIND | TEMP |
|---|---|---|
| 030 | 35025 | -06 |
| 015 | 35025 | -03 |
| 010 | 33020 | 00 |
| 005 | 31010 | 00 |

Format: Weather data is in TAF format to include clouds, visibility, weather, winds, and hazards. In addition, forecast winds/temperatures are provided for flight levels 005, 010, 015, and 030.

This information is provided for mission planning and training and is NOT amended.

Delivery Method:

- Available on the WF SharePoint page at:
https://97amw.portal.afus.af.mil/sites/OG/ops/weather/MEF%20_AS_Planning%20WX.aspx

Decoding:
Winds are measured in magnetic degrees and knots; surface visibility is measured in SM; weather conditions follow TAF format; temp measured in °C; FL winds measured in true degrees and knots

**A10.2. Mission Execution Forecast.** The MEF is a tailored product for 97 AMW aircraft with mission specific data for AAFB aircrews. Weather criterion is color coded to indicate mission limiting (Yellow) and mission impacting (Red). The MEF is categorized into three sections: AAFB/Local Pattern Forecast, AR Tracks, Transitions, Drop Zone, and Military Training Routes.

**Note:** The MEF is available on the WF SharePoint page. The MEF is updated NLT 0430L, 1300L, or as un-forecast conditions are expected to occur. Figures **7-11** provide the MEF sample, format, and decoding.

**Figure A10.5. MEF Sample, Format, and Decoding (AAFB Local Pattern Forecast).**

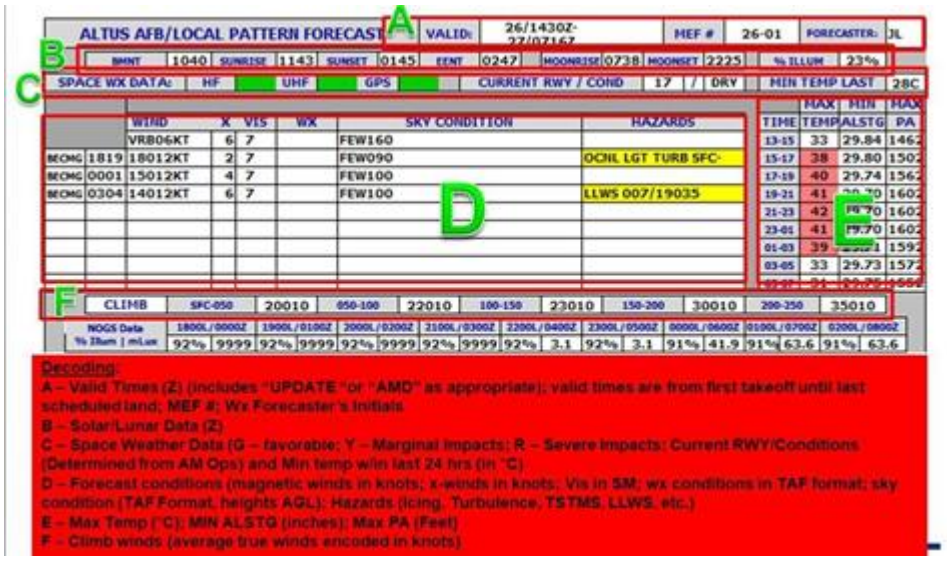



**Figure A10.6. MEF Sample, Format, and Decoding (AR Forecasts).**

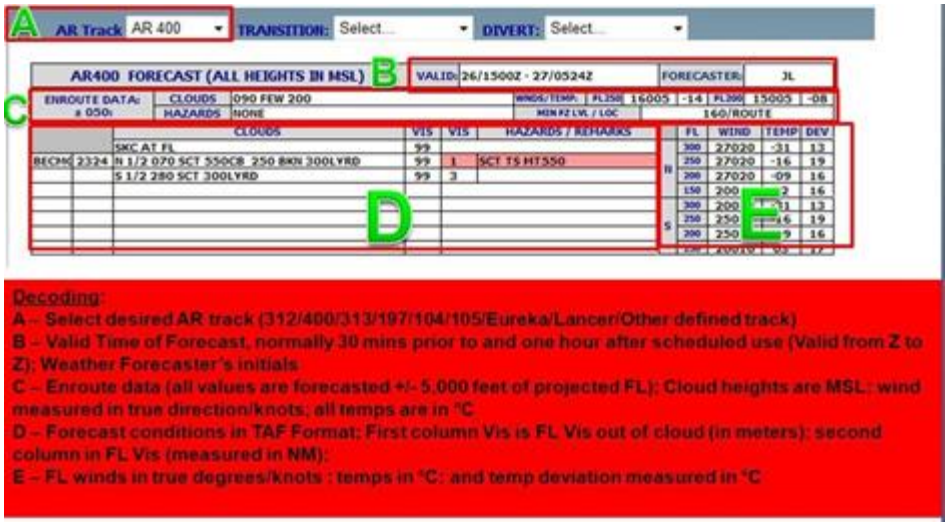


**Figure A10.7. MEF Sample, Format, and Decoding (Military Training Route Forecasts).**


Decoding:
A – Select desired LL track (IR 193, IR 103, SR 217, TORNADO, VR 184, VR 106)
B – Valid Time of Forecast, normally 30 mins prior to and one hour after scheduled use (Valid from Z to Z); Weather Forecaster's initials
C – Enroute data (all values are forecasted +/- 5,000 feet of prjected FL); Cloud heights are MSL; wind measured in true direction/knots; all temps are in degrees C.
D – Forecast conditions in TAF Format. Vis is out of cloud (measured in SM)

**Figure A10.8. MEF Sample, Format, and Decoding (Drop Zone).**


Decoding:
A – valid times of the forecast (CSM/AMA valid from first takeoff time until midnight; IAB valid from first takeoff thru 1 hour after last land; all other transitions are valid one hour before thru one hour after scheduled times; DZ valid one hour before thru one hour after scheduled use) in Zulu and forecaster initials
B – Enroute data (FL +/-5000 ft ; clouds in MSL; Hazards; FL winds measured in true degrees and knots and temps in °C; min freezing level is in MSL
C – Winds are measured in magnetic degrees and knots; surface visibility is measured in SM; weather conditions follow TAF format
D – Min ALSTG measured in inches; FL winds measured in true degrees and knots; max temp measured in °C; Max PA is measured in feet

**Figure A10.9. MEF Sample, Format, and Decoding (Divert Forecasts).**

## Attachment 11

## SAMPLE SPACE WEATHER PRODUCTS

**A11.1. General.** Many of our weapons, communications and navigations systems use radio waves: High Frequency (HF), Ultra High Frequency (UHF), which can be rendered useless by electro-magnetic radiation from the sun. This attachment contains some products available to AAFB personnel and used by weather technicians to produce MWPs.

**Figure A11.1. Sample Global/Regional 6-Hr Analysis of Ionospheric Conditions Impacting HF Propagation.**

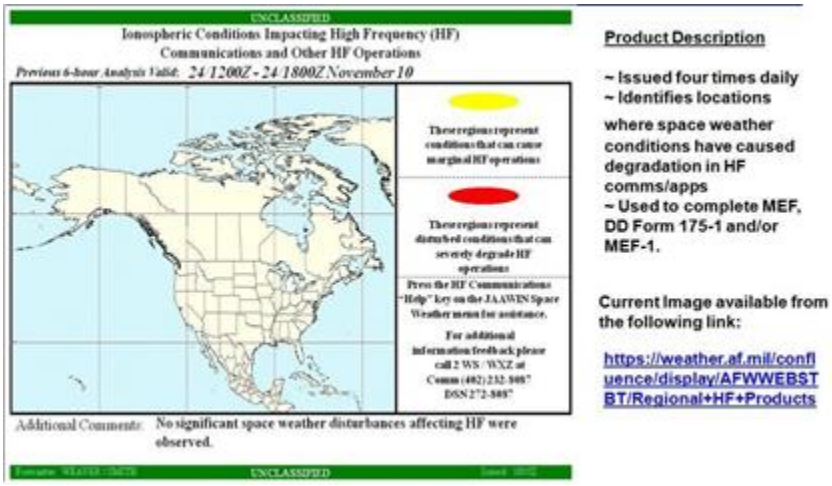



**Figure A11.2. Sample Global/Regional 6-Hr Forecast of Ionospheric Conditions Impacting HF Propagation.**

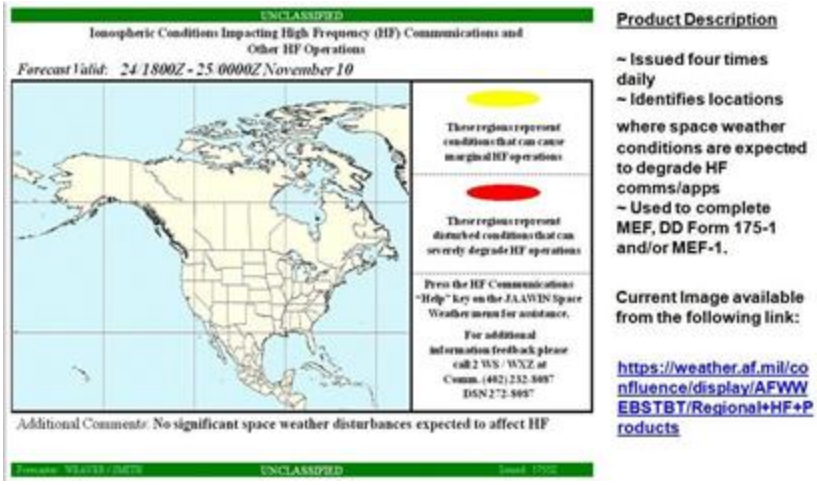
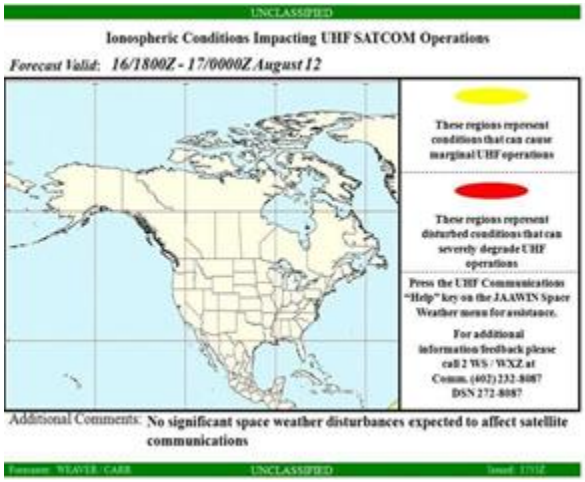


**Figure A11.3. Global Regional 6-Hr Forecast of Ionospheric Conditions Impacting UHF SATCOM.**




**Product Description**

~ Issued four times daily
~ Identifies locations where space weather conditions are expected to degrade UHF comms/SATCOM
~ Used in tandem with UHF Scintillation NOWCAST and FORECAST products
~ Used to complete MEF, DD Form 175-1 and/or MEF-1.

Current Image available from the following link:

https://weather.af.mil/confluence/display/AFWWEBSTBT/Regional+HF+Products

**Figure A11.4. Global Regional UHF Scintillation NOWCAST and FORECAST product.**

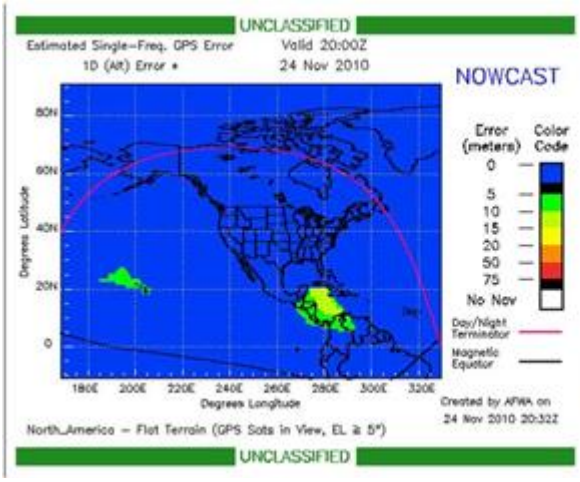

**Product Description**

~ Issued four times daily
~ Identifies locations where space weather conditions are expected to degrade UHF comms/SATCOM between 225 MHZ and 400 MHZ
~ Used to complete MEF, DD Form 175-1 and/or MEF-1.

Current Image available from the following link:

https://weather.af.mil/confluence/display/AFWWEBSTBT/Regional+HF+Products

**Figure A11.5. Estimated GPS Single-Frequency GPS Error Map.**



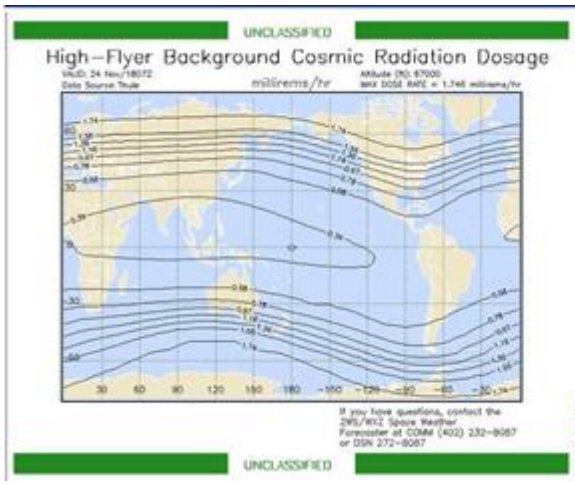

**Product Description**

~ Issued every hour
~ Identifies estimates of current single frequency GPS accuracy based on calculations that account for ionospheric-induced errors
~ Not valid for dual frequency GPS receivers
~ Used to complete MEF, DD Form 175-1 and/or MEF-1.

Current Image available from the following link:

https://weather.af.mil/confluence/display/AFWWEBSTBT/Regional+GPS+Maps

**Figure A11.6. High Altitude Radiation Dosage Charts.**



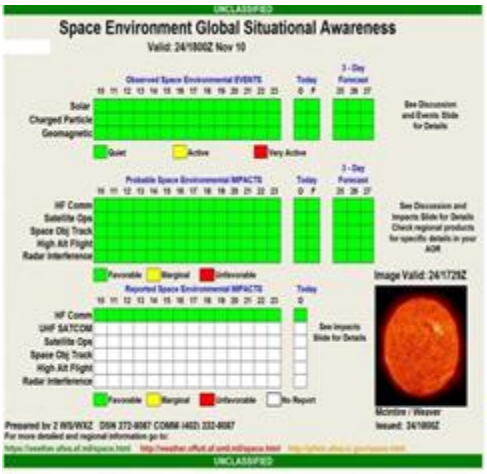

**Product Description**

~ Issued four times daily based on cosmic radiation measurements
~ Quantifies global level radiation dosage at high altitudes based on background cosmic radiation
~ Followed-up by fax notification during high-energy particle events
~ Used to complete MEF, DD Form 175-1 and/or MEF-1.

Current Image available from the following link:

https://weather.af.mil/imageProxy/products?regioncode=SPACE&producttype=SPACE~U~HFL~GLO~000

**Figure A11.7. Events and Impacts Slide.**




**Product Description**

~ Issued every six hours
~ Identifies forecast solar activity to include solar activity trends and impacts on military operations

Current Image available from the following link:

https://weather.af.mil/confluence/display/AFWWEBSTBT/Space+Weather+Events+and+Impacts+Stop+Light+Chart