

**BY ORDER OF THE COMMANDER  
305TH AIR MOBILITY WING**

**305th AIR MOBILITY WING  
INSTRUCTION 15-101**



**4 AUGUST 2011**

**Weather**

**WEATHER SUPPORT PROCEDURES**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Air Force Weather Operations*, Air Force Instruction (AFI) 10-206, *Operational Reporting*, AFI 10-229, *Responding to Severe Weather Events*, AFI 15-114, *Functional Resource and Weather Technical Performance Evaluation*, AFI 15-128, *Air Force Weather Roles and Responsibilities*, AFI 10-2501, *Air Force Emergency Management Program Planning and Operations*, Air Force Manual (AFMAN) 15-111, *Surface Weather Observations*, AFMAN 15-124, *Meteorological Codes*, AFMAN 15-129, *Air and Space Weather Operations – Processes and Procedures*. It establishes responsibilities and weather support procedures. It also provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather data, information dissemination, and base-wide reciprocal support. It applies to units assigned to the 87th Air Base Wing (ABW), 305th Air Mobility Wing (AMW), 514th Air Mobility Wing (AMW), 108th Wing (WG), subordinate units, and units assigned, attached, or supported by Joint Base McGuire-Dix-Lakehurst (JB-MDL).

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**SUMMARY OF CHANGES**

This document has been substantially revised and must be completely reviewed. This publication is updated to reflect changes in mission requirements caused by manning reduction and base consolidation efforts. The major changes include new limited duty hours for weather flight operations; expanded weather sensitivities for newly assigned aircraft; clarification of mission limiting weather criteria affecting air and ground operations; the addition of supplemental and back-up observation requirements and procedures.

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## Chapter 1

### GENERAL INFORMATION

**1.1. General.** Weather support to JB-MDL is currently accomplished thru units assigned to JB-MDL and Scott Air Force Base (AFB), Illinois. The 305th Operations Support Squadron (OSS) Weather Flight (WF) provides and/or arranges for weather support to McGuire airfield, 87 ABW, 305 AMW, 514 AMW, 108 WG and most assigned units. The 621st Contingency Response Wing (CRW) has weather personnel assigned to each Contingency Response Group to meet mission requirements. The 108th Contingency Response Group (CRG) has a weather technician assigned to meet mission requirements, and the US Navy has an Aerographer's Mate team assigned to the Lakehurst Maxfield Field (airfield coded: KNEL), located on Lakehurst Naval Air Engineering Station (NAES). The 15th Operational Weather Squadron (OWS) at Scott AFB provides airfield and/or resource protection in varying capacities to JB-MDL based on local unit organization, capability and mission requirements and the support provided is captured in Memorandums of Agreement (MOA) between the organizations involved. The Tanker Airlift Control Center (TACC) at Scott AFB IL develops and provides flight weather briefings to aircrews assigned to 305 AMW, 514 AMW 108 WG and to Air Mobility Command (AMC) aircraft transiting JB-MDL. The WF does not have authority or control over the weather entities assigned to JB-MDL but assumes responsibility as the weather subject matter expert and should be considered as the focal point for all weather-related or weather support issues at JB-MDL. This instruction establishes requirements and procedures pertaining to 305 OSS weather support during peacetime operations. Additional information on US Navy weather support at KNEL airfield is provided as a courtesy and will not be construed as directive in nature. This instruction will be reviewed annually and updated as required.

### **1.2. Background.**

1.2.1. According to the AFI 15-128, an OWS will provide resource protection, terminal aerodrome forecasts, regional and operational-level weather products and information, meteorological watch (METWATCH) services, Pilot-to-Metro Service (PMSV), and flight weather briefing support for Air Force locations within designated geographic regions.

1.2.2. The 15 OWS at Scott AFB will provide regional and operational-level weather products and information to Air Force and Army units in the Northeast region of the Continental United States (NE CONUS).

1.2.3. The Weather Flight, provides or arranges weather operations support to units assigned to or transiting McGuire Field in accordance with governing and applicable AFIs, policies, and support agreements between key agencies. Services are provided during weather flight operating hours, published in the McGuire Field FLIP (airfield code: KWRI). During closure hours weather services responsibilities are arranged/transferred to the 15 OWS and/or TACC, both located at Scott AFB. During significant communications outages, hazardous weather events or operational requirements the weather flight, at the direction of the 15 OWS, TACC or local command authority, will provide services outside of normal operating hours through recall of the standby forecaster by the JB MDL Command Post Duty Officer. Limited airfield services are available at Lakehurst NAES and are provided by the US Navy Aerographer team assigned at Lakehurst, contact number is commercial (732) 323-2334 or

DSN 624-2334. Resource protection for Lakehurst is provided by the 15 OWS East Sub-region Point Weather Warning cell at Scott AFB, contact number is DSN 576-9662. Weather services quality is tracked on a monthly basis through health of the fleet updates to the 305 OSS Commander (CC) and Joint Base Common Output Level Standards (COLS) as requested. Aircrews and supported agencies are encouraged to contact weather flight leadership DSN 650-3569/8058, or 305 OSS leadership, DSN 650-2345 regarding the effectiveness of weather briefings and weather support.

**1.3. Responsibilities.** General responsibilities of the OWSs and WFs are outlined in AFI 15-128. Specific responsibilities of the 15 OWS and McGuire WF are defined in the Memorandum of Agreement between the 305 OSS and 15 OWS, information data sheets, and in this document. These responsibilities include:

1.3.1. 15 OWS Responsibilities. 15 OWS will:

1.3.1.1. Produce and disseminate timely and accurate regional and operational-level weather products and information IAW Air Force Instructions, Manuals and regional requirements. This includes such products as Terminal Aerodrome Forecasts (TAF), Forecaster in the Loop (FITL) graphics charts and unit tailored pages and will support McGuire WF development of mission execution weather products for specific points and areas such as air refueling routes. These products are located on the 15 OWS webpage. Tactical-level products will be provided by the WF, however the OWS will assist during WF deployments

1.3.1.2. Produce and disseminate the McGuire Field (KWRI) TAF with appropriate specification criteria and amendments IAW Air Force Instructions, Manuals and Published Airfield Minima. Provide the WF ample opportunity to collaborate on TAF through issuance of bulletin and draft TAF no later than 30 minutes prior to the cardinal hour.

1.3.1.3. Provide weather watches, warnings, and advisories IAW Air Force Instructions and Manuals and any JB-MDL unique criteria outlined in the MOA and/or associated data sheets for the purposes of resource protection and flight safety. Time permitting, contact and coordinate all watches, warnings, and advisories with McGuire WF prior to issuance. The OWS will issue all forecast watches, warnings, and advisories during McGuire WF non-duty hours, will also issue all observed watches, warnings, and advisories.

1.3.1.4. Provide flight weather briefing services to transient aircrews, to include verbal flight weather briefings which will be documented using the 15 OWS Aircrew Briefing Log. 15 OWS will complete no-notice and short-notice flight weather briefings as time permits after existing requests are completed unless special circumstances warrant a higher priority (e.g. alert, search and rescue and medical evacuation). Upon special request by the WF and resources permitting, provide flight weather briefing responsibility for supported units for a limited timeframe.

1.3.1.5. Support aircrew telephone patch weather information requests or PMSV when technology is available.

1.3.1.6. Develop and institute a metrics collection and evaluation program and make findings and assessments available to the WF. Coordinate any issues/concerns regarding metrics findings with WF. This information will be available on the 15 OWS webpage.

1.3.1.7. Cross feed technical exploitation and theater training products and provide technical assistance/advice upon request. This information will be available on the 15 OWS webpage.

1.3.1.8. Disseminate 15 OWS products to designated JB-MDL agencies via standard communication systems (e.g. Non-Secure Internet Protocol Router Network (NIPRNET), SECRET Internet Protocol Router Network (SIPRNET)) and AFW meteorological communication systems (e.g. Integrated Weather Warning Capability (IWWC), Joint Environmental Toolkit (JET)). The 15 OWS web site will provide access to all products and services at <https://ows.scott.af.mil/>.

1.3.1.9. Notify the McGuire WF of significant degradations of service due to communication or equipment outages and maintenance or other unforeseen events.

1.3.1.10. Respond to requests for assistance when notified of an in-flight emergency, aircraft mishap, or ground mishap and perform weather data saves (compile weather information for possible use by an accident investigation board). Coordinate with WF on any requests for information and/or products.

1.3.1.11. Develop and coordinate backup operating procedures and instructions with Air Force Weather Agency (AFWA) or other OWSs to minimize impacts and ensure the availability of mission critical weather products and services.

1.3.1.12. Ensure OWS leadership emphasizes the importance of teamwork, open lines of communication, and constructive feedback with the WF members.

1.3.1.13. Publish a 15 OWS product and services guide. This information will be available on the 15 OWS webpage.

1.3.1.14. Perform the METWATCH on tropical storms and hurricanes and serve as the liaison between the National Hurricane Center and the WF. Use wind forecasts from tropical cyclone bulletins and tailor the forecasts for terrain effects to issue TAFs, Military Operation Area Forecasts (MOAFs), and watches, warnings, and advisories IAW AFMAN 15-129.

1.3.1.15. Provide assistance to the WF and Command Post in preparing any Operational Report Three (OPREP-3).

1.3.1.16. Ensure OWS leadership assigns forecast reviews and coordinates with the WF for pertinent commentary/input. All forecast reviews will be posted to the 15 OWS webpage.

1.3.1.17. The 15 OWS will post their seasonal continuation training, which may include forecasting techniques, expected threats, response procedures and refresher meteorological interrogation techniques for severe weather, to the public webpage for use by the WF.

1.3.2. WF Responsibilities. The WF will:

1.3.2.1. Notify 15 OWS of special wartime, contingency, and exercise weather product and information requirements with maximum lead-time.

1.3.2.2. Provide augmentation of automated real-time surface weather observations. Train personnel as “eyes forward” for OWS forecasters and encourage passing of relevant weather intelligence that may assist in making local forecasts more representative and accurate.

1.3.2.3. Monitor the Joint Base area weather conditions and provide feedback/inputs to the OWS-produced TAF as required.

1.3.2.3.1. Collaborate with 15 OWS to ensure TAF takes into consideration local mission execution specification criteria.

1.3.2.3.2. WF will coordinate potential amendments to TAF-coded forecasts with the servicing OWS to resolve disagreements involving weather conditions impacting flight safety.

1.3.2.4. During duty hours, issue observed weather warnings and advisories as required to support the mission execution activities. Notify the 15 OWS when issuing or canceling an observed weather warning or advisory.

1.3.2.5. Notify the 15 OWS if a watch, warning, or advisory is not correctly received into the local weather dissemination system.

1.3.2.5.1. When WF is not on duty, ensure procedures are in place identifying the JB MDL Command Post as the 24-hour, single point of contact for initially acknowledging receipt of watches, warnings, and advisories. Coordinate with 15 OWS any special weather support to include observed weather warnings and advisories that are required while the WF is closed.

1.3.2.5.2. Issue or supersede the forecast, forecast weather warnings and/or advisories for JB MDL through the Command Post for immediate dissemination when weather conditions pose an immediate threat to life, property or mission execution and there is insufficient time to pre-coordinate such activities with 15 OWS forecasters. When issuing or superseding a forecast, weather warning and/or advisory, the WF will notify the 15 OWS as soon as practical.

1.3.2.6. Notify the 15 OWS when METWATCH indicates 15 OWS regional level products may be, or may become, unrepresentative when compared to current or expected weather conditions.

1.3.2.7. Arrange for transient aircrews weather briefings by providing access to the 15 OWS Mission Support Cell. Materials needed for access to 15 OWS services include a dedicated computer (complete with Internet access and appropriate briefing bookmarks), printer, telephone near the computer with appropriate phone numbers (DSN 576-9755/fax 576-4855), fax machine, and appropriate expendable supplies. WF will encourage aircrews to provide a minimum of two hours lead-time for flight briefing requests and to request flight weather briefs via the 15 OWS flight brief scheduling system accessible through the 15 OWS web site <https://ows.scott.af.mil/>.

- 1.3.2.8. Notify the 15 OWS when aircrew reports encounter forecasted or unforecasted urgent (UUA) weather phenomena in the NE CONUS region. See AFMAN 15-124 for UUA criteria.
- 1.3.2.9. Coordinate and forward updated copies or changes to this document and any other applicable local support agreements to the 15 OWS.
- 1.3.2.10. Assist the 15 OWS in development and maintenance of a Joint Base Forecast Reference Notebook (FRN). This will be a cooperative effort led by 15 OWS/DOE.
- 1.3.2.11. Publish hours of operation and other weather operations information for WF in the Flight Information Publication (FLIP) to ensure aircrews obtain a comprehensive understanding of how to receive weather briefings. The FLIP will state (at a minimum) the weather service, detail WF and 15 OWS respective service periods, and list each unit's contact information.
- 1.3.2.12. Notify 15 OWS/ DOE of changes to published hours of operation.
- 1.3.2.13. Provide required weather products and information to co-located Air Force and Army Reserve and National Guard units.
- 1.3.2.14. Provide PMSV to local aircrews and transients using the airfield and operating within radio contact of McGuire Field.
- 1.3.2.15. WF will notify the 15 OWS as soon as practical following an in-flight emergency, aircraft mishap, or ground mishap, to initiate data-save procedures.
- 1.3.2.16. Notify 15 OWS of significant service degradations due to communication or equipment outages and maintenance or other unforeseen events, to include any planned/unplanned evacuations.
- 1.3.2.17. During significant 15 OWS communication outages, evacuations, catastrophic events or pre-coordinated exercises of backup procedures (conducted quarterly as a minimum), temporarily (00-72 hours) assumes local TAF and weather watch, warning and advisory responsibility.
- 1.3.2.17.1. The 15 OWS will hand off TAF, Watch, Warning, and Advisory Support and Flight Weather Briefing responsibilities (including transient aircrews at that location) to supported WFs. However, the 15 OWS forecasters will maintain close coordination with WFs via telephone, when feasible and when weather information is available, to aid in TAF METWATCH, Watch, Warning, and Advisory Support and Flight Weather Briefing support.
- 1.3.2.18. Provide feedback to 15 OWS/DOE on the accuracy, timeliness, and relevance of weather products and information. Forward reports of unsatisfactory products or services to 15 OWS/DOE. Coordinate any requests/concerns regarding metric products with 15 OWS/WXT.
- 1.3.2.19. Ensure WF leadership emphasizes the importance of teamwork, "eyes forward" actions, open lines of communication, and constructive feedback when dealing with 15 OWS weather operators.

1.3.2.20. Keep 15 OWS and MAJCOM A3W aware of OPREP-3s for severe weather damage (to include winds  $\geq$  50 knots, hail  $\geq$  3/4 inch, tornadoes, lightning strikes or snow storms) impacting JB-MDL IAW AFI 10-229 and AFI 10-206. OPREP-3s can be reviewed by all agencies via SIPRNET access at <https://skiweb.stratcom.smil.mil/ski-web>.

1.3.2.21. Ensure WF leadership coordinates with 15 OWS on pertinent commentary/input for any forecast reviews assigned that impacted their base/post. Organization issuing the weather warning has the lead for writing the review, and the other will assist.

1.3.2.22. Ensure 15 OWS operations floor is notified when airfield sensors or other vital weather flight meteorological or communications equipment becomes inoperable.

1.3.3. In order to meet these responsibilities the following information is provided to assist in understanding the functional components of weather services provided at JB-MDL.

1.3.3.1. Staff weather services support is provided to the host and parent unit's commander and staff as directed or upon request to include but not limited to: Pre-deployment concept briefings, Wing level staff briefings, Group level daily operations meetings, Close Watch briefings, exercise briefings and Crisis Action Team briefings. Due to duty priorities it may not be possible to provide personnel at every briefing for face to face interaction, the weather flight will make every effort to mitigate this circumstance and will notify the briefing Point of Contact (POC) as soon as possible if a briefer is unavailable. Staff weather support also includes facilitating emerging weather requests, climatology support, and supporting the base in educating agencies on the purpose and applicability of weather products as required.

1.3.3.2. Airfield Services are provided at both McGuire Field (KWRI) and Lakehurst Maxfield Field (KNEL) airfields:

1.3.3.2.1. Airfield services support for McGuire Field is provided by the 305 OSS Weather Flight, or arranged for via reach back capability through the 15 OWS. Services include: augmenting automated surface observation systems by taking, recording and disseminating surface weather observations due to system limitations or outages; providing severe weather action procedures; providing PMSV radio support and providing 15 OWS backup capabilities to include issuing, amending and cancelling forecasted and observed weather watches, warnings and advisories as required; producing and amending TAFs.

1.3.3.2.2. Airfield services for Lakehurst are provided by the US Navy Aerographer team located at Lakehurst and are available during operating hours as published in the Lakehurst Maxfield Field FLIP. Services include: augmenting automated surface observing systems when required or manually taking, recording and disseminating surface weather observations during flying operations, and provide PMSV contact via Lakehurst Base Operations radio.

1.3.3.3. Mission weather services, to include flight weather briefings, for AMC aircraft (Mission Weather Service (MWS) or Integrated Flight Management (IFM)) assigned to or transiting McGuire Field are provided by TACC through the Global Decision Support System (GDSS2) with the weather flight providing back-up capability in the event

GDSS2 is unavailable. Strategic Command (STRATCOM) directed missions will always be provided by the weather flight. Mission weather services for transient aircraft are provided for by the weather flight, dependent on duty priorities, or arranged for via reach back capability through the 15 OWS. Soon to arrive Navy and Marine aviation assets should leverage their respective services reach back capabilities for mission weather services.

1.3.3.4. Deployment services provide ready deployable capabilities IAW the weather flight document statement and reported via the Status of Resources and Training System (SORTS) and Air Expeditionary Force (AEF) Reporting Tool System (ARTS).

#### 1.4. Duty Priorities.

1.4.1. 15 OWS Duty Priorities. 15 OWS duty priorities listed in [Table 1.1](#) exist to match and balance limited manning and mission critical tasks.

1.4.1.1. Duty priorities focus efforts during peak work periods prone to task saturation and priority conflicts.

1.4.1.2. Weather operators will use good judgment in complying with these duty priorities, especially when there is imminent danger to life and/or property.

**Table 1.1. 15 OWS Duty Priority Listing.**

Order Of Priority	Duties
1	Respond to Emergency War Orders (EWO)/contingencies
2	Respond to aircraft emergencies and search and rescue missions
3	Answer phone patches
4	Disseminate severe Pilot Reports (PIREPs)/Aircraft Reports (AIREPs))
5	Prepare and disseminate watches, warnings, and advisories
6	Prepare and issue local installation forecasts
7	Prepare and issue Aircrew Graphics products
8	Prepare and issue regional discussion bulletins
9	Prepare mission execution forecasts (DD Form 175-1 and verbals)
10	Disseminate other PIREPS/AIREPs
11	Monitor weather for NE CONUS (coordinate as necessary)
12	Provide other briefings
13	Conduct/perform weather function training
14	Complete other administrative duties

1.4.2. Weather Flight Duty Priorities. WF duty priorities are listed in Table 1.2.

1.4.2.1. Duty priorities focus efforts during peak work periods prone to task saturation.

1.4.2.2. Weather operators will use good judgment in complying with these duty priorities, especially when there is imminent danger to life and/or property.

**Table 1.2. WF Duty Priority Listing.**

Priority	Duties
1	Perform Emergency War Order (EWO) Taskings (STRATCOM directed missions)
2	Execute Emergency Actions (Evacuation due to Fire, Bomb Threats, Force Protection, etc.)
3	Respond To Aircraft/Ground Emergencies
4	Respond to Pilot to Metro Service (PMSV) Contacts
5	Issue Weather Watches, Warnings or Advisories as required
6	Augment AN/FMQ-19 Observations for Mandatory Elements (Supplement/Back-up)
7	Execute severe weather action procedures (SWAP)
8	Provide “Eyes Forward” for 15 OWS NE CONUS Operations including METWATCH TAF/ watch, warning, and advisory collaboration (Assume KWRI TAF/ watch, warning, and advisory support due to 15 OWS outages/exercises )
9	Disseminate Urgent PIREPs and Special AIREPs
10	Provide “Eyes Forward” for 618 TACC including MISSIONWATCH (Assume KWRI MWS and/or IFM Mission Execution Forecast support due to TACC outages/exercises)
11	Disseminate routine PIREPs/AIREPs
12	Provide or arrange aircrew updates and support to transient aircrews
13	Prepare/provide briefings (Staff, Close Watch, OG/MXG )
14	Conduct Weather Function Training
15	Accomplish Administrative Tasks

**1.5. Operations Hours and Contact Information.** Weather services are provided at the Base Weather Station located in building 1730. The hours of operation are formally published in the applicable FLIP for McGuire Field, and the weather technician can be contacted at 754-3992/1130/3568 or by email at [305ossweather@us.af.mil](mailto:305ossweather@us.af.mil). Airfield and Mission services are available Monday through Friday from 0600-2000L, except for weekends, federal holidays. Staff weather services are generally available Monday through Friday from 0730-1630L. Staff weather services can be reached at 754-3569/8058 or by email to [305ossweather@us.af.mil](mailto:305ossweather@us.af.mil).

1.5.1. The WF will remain open and continue operations when:

1.5.1.1. Augmenting the Automated Surface Observing System (FMQ-19) under supplemental criteria conditions: Tornado activity, ½ inch or greater hail, volcanic ash or snow depth if a snow warning for GTE ½ inch in 12 hours is issued and snowfall is occurring.

1.5.1.2. Augmenting the FMQ-19 under specific back-up criteria conditions due to sensor or communications failure.

1.5.1.3. A watch/warning is active and/or observed lightning is within 10 nautical miles (NM) of JB-MDL, See Chapter 8, Tables 8.1 & 8.2 for criteria.

1.5.1.4. A tropical storm or hurricane with sustained surface winds of 50 knots or greater is forecasted to affect JB-MDL.

1.5.1.5. The 15 OWS suffers a communications outage and is no longer able to provide support.

1.5.1.6. TACC suffers a communications outage and is no longer able to provide MWS support.

1.5.1.7. To support contingencies, real-world operations/training and major exercises.

1.5.1.8. When directed by Wing Commander, Operations Group Commander, or OSS Commander (i.e., Crisis Action Team (CAT) support, when JB-MDL acts as a staging-base for operations, etc).

1.5.2. Prior to closing operations on the last duty day of the week, WF leadership or designated representative sends a closure Memorandum for Record (MFR) via e-mail to the JB MDL CP, ops controller, Command Post (CP) Duty Officer, 15 OWS B-Flight and B-Flight Leadership and Airfield Management org box covering recall procedures and POCs valid thru the last duty day of the following week, example [Attachment 9](#). The JB MDL CP senior controller or Duty Officer will make the final decision to notify/recall standby forecasters based on the following:

1.5.2.1. Weather Conditions warranting standby forecaster notification.

1.5.2.1.1. Any weather watch or warning is issued or forecasted to occur and impacts local flying operations.

1.5.2.1.2. Observed lightning within 10 miles of JB-MDL (OWS/Tower estimates lightning to be within 10 miles).

1.5.2.1.3. Ceiling less than or equal to 500 feet is observed or forecasted to occur and impacts local flying.

1.5.2.1.4. Visibility less than or equal to ¼ mile is observed or forecasted to occur and impacts local flying.

1.5.2.1.5. Ambient temperature less than or equal to 35°F/02°C and precipitation is occurring or is forecasted to occur within 2 hours (addresses snow, freezing drizzle, and freezing rain events).

1.5.2.2. Equipment or communications outages/degradation requiring notification/recall of standby forecaster.

1.5.2.2.1. Automated observation sensors are not viewable to Air Traffic Control (ATC) or 15 OWS personnel.

1.5.2.2.2. Observations are not being transmitted to ATC or 15 OWS.

1.5.2.2.3. GDSS 2 outage that will affect missions departing KWRI.

1.5.2.2.4. In the opinion of ATC and/or 15 OWS personnel, the observations are not representative of conditions at the airfield or in the local area (i.e. PIREPS). These conditions **must** have a direct/significant impact to operations if not corrected.

1.5.2.3. Operationally Significant Events requiring recall of standby forecaster

1.5.2.3.1. Severe Weather Action Procedures activation

1.5.2.3.2. Aircraft mishap

1.5.2.3.3. Real world or exercise recall

1.5.2.3.4. Alert missions

1.5.2.3.5. At the direction of the 305 AMW/CC or designated representative

1.5.2.4. The response time for the standby forecaster is 30 minutes. The recalled forecaster will leverage 15 OWS support to gain situational awareness as necessary and can recall additional WF personnel as needed.

## **1.6. Assumptions, Shortfalls, and Limitations.**

1.6.1. 15 OWS Assumptions. Adequate resources and communications will be available to execute the MOA and/or assigned data sheets and sufficient weather intelligence will be available from various sources on which to base weather operations and production.

1.6.2. WF Assumptions. Weather support can only be provided if the appropriate facilities, funding, communications, personnel, and indigenous support are available.

1.6.3. WF Shortfalls: Some services may not always be available (e.g., out of station briefings) due to WF manning, station evacuation, or higher priority missions based on duty priorities.

1.6.4. WF Limitations. The Weather flight provides weather services to JB-MDL to the maximum extent possible given manning, equipment and communications status.

1.6.4.1. Short notice requests for routine weather services must be minimized, pre-coordination for weather services is a major factor in allowing weather flight leadership to de-conflict and prioritize requests based on available resources and duty priorities. Requests for weather support outside of the weather flight's operational chain of command will be routed through OSS leadership. Requests for weather support that the weather flight cannot provide or arrange are routed through OSS leadership for a support/do not support decision.

1.6.4.2. If the automated surface observing system is not operating, the WF will use manual tools and methods to determine airfield conditions. Although these tools and methods are proven to provide a large measure of accuracy, use of these techniques will result in an estimate of actual conditions.

1.6.4.3. Lightning may not be seen due to distance, low clouds, or poor visibility. Thunder may not be heard because of ambient airfield noise. In these situations, the sole means of determining lightning strike locations is by use of a lightning detection system. All personnel and supervisors of personnel should exercise due personal caution when storms threaten the immediate area.

**1.7. Alternate Operating Location (AOL).** In the event of an evacuation of building 1730 services will move to the AOL, Building 1608 (Remote Observing Site (ROS)). All contact numbers remain the same as identified above with the additional numbers of 754-0033/0034.

1.7.1. The AOL is maintained in a near active status and mirrors the capability available at the weather station with one exception, the unavailability of the Open Principal User Processor (OPUP) dedicated weather radar. WF members will follow duty specific Standard Operating Procedures (SOP) and Weather Flight Evacuation Checklists, including a list of required backup equipment and resume services at the alternate location as soon as possible.

1.7.2. Most WF services/support will be provided, but will require a case-by-case assessment dependent on communication line status, equipment status, etc. Expect some services to be degraded due to the remoteness of the facility.

1.7.3. To ensure resource protection is maximized, the WF will not evacuate for exercises when severe weather is imminent or when a Hurricane Condition (HURCON) level change is probable within 8 hours after exercise begins.

## **1.8. Weather Information Operations Requirements.**

1.8.1. Using agencies should:

1.8.1.1. Establish and coordinate all weather information requirements and procedures with 305 OSS/OSW. Coordination should include, as specific as possible, the action(s) taken upon receipt of the information. Doing so will greatly increase WF awareness of local service impacts and result in improved operations capability.

1.8.1.2. Notify 305 OSS/OSW of any changes in weather information requirements.

1.8.1.3. Coordinate with 305 OSS/OSW for any required weather information training.

1.8.2. Unit Commanders should:

1.8.2.1. Remain abreast of critical weather elements that adversely impact their operations. This can be accomplished through review of disseminated weather information via established communication procedures outlined within this instruction.

1.8.2.2. Ensure procedures are established within their organization to adequately respond to or incorporate disseminated weather information as deemed appropriate. Accurate weather information inserted early into a unit's planning process can result in increased operational efficiency and/or effectiveness by minimizing wasteful use of people and equipment.

1.8.2.3. Review this instruction annually for any changes in support requirements and coordinate proposed changes with 305 OSS/OSW.

**1.9. Release of Weather Information to Non-Department of Defense (DOD) Agencies and Individuals.** Requests for weather information services from non-DOD organizations must be reviewed and approved by the 87 ABW Public Affairs (PA). The WF accepts requests for weather information from non-DOD organizations provided the data is readably available and retrieval time will not adversely affect on-going operations. Approved requests for weather information by non-DOD organizations must:

1.9.1. Not interfere with military operations activities.

- 1.9.2. Not to be used in legal proceedings unless cleared by the 87 ABW/SJA.
- 1.9.3. Not be in direct competition with locally available commercial weather services.
- 1.9.4. Help promote local community/military good will.
- 1.9.5. Be a one-time request (and each request formally made).
- 1.9.6. Be related to non-commercial activities.
- 1.9.7. Be on a non-retribution basis. Weather information will not be released to non-DoD agencies or the general public without approval from the 87 ABW/PA and Legal offices.

**1.10. Media Coverage.** When a Weather Flight member is interviewed for television, radio, or print, a detailed description of the event will be forwarded by e-mail to AMC/A3W.

**1.11. Post-Mission Analysis/Feedback.** Per AFMAN 15-129, Chapter 4, units that regularly utilize weather support from the WF should provide post-mission/utilization feedback, when possible. This information will be used to ensure products delivered to flying customers are accurate, relevant, and timely. This feedback will form a database used to gauge accuracy of support, identify trends, and improve the overall quality of products disseminated to customers.

1.11.1. Formal/informal feedback methods include:

- 1.11.1.1. Completing feedback form attached provided with a local Mission Execution Forecast (MEF) briefing and dropping that off at the forecast counter (when provided by the WF).
- 1.11.1.2. Faxing feedback form to the WF (DSN 650-2728).
- 1.11.1.3. Email and/or phone calls to the Flight Chief/Non-Commissioned Officer in Charge (NCOIC).
- 1.11.1.4. Face to face feedback after any briefing.
- 1.11.1.5. Contact 305 OSS leadership, DSN 650-2345.

1.11.2. The WF will, in turn, utilize this data to refine their mission support role and gauge unit strengths and weaknesses.

**1.12. Mishap Procedures.** WF members and the 15 OWS have a role when the airfield is advised of an emergency or mishap. In general, the WF will ensure applicable data used in the development of any weather information, products, and/or services provided is saved for the possibility of an impending investigation.

1.12.1. The WF will save enough data covering weather conditions before and after the mishap to fully reconstruct environmental conditions. Leverage data that can be saved by the 15 OWS.

1.12.2. The WF will coordinate with 15 OWS to save all applicable data and products. The WF will specify what data they need the 15 OWS to save. If the WF used products from other OWSs to support missions crossing Areas of Responsibility (AOR), they must coordinate with all applicable OWSs to initiate a data save.

1.12.3. If the OWS provided the flight weather MEF or other products, they will coordinate the data save with all AFW units involved. The WF will coordinate with Air Force Weather Agency (AFWA) Operations to save any applicable data and products not available locally.

1.12.4. The WF at the departure installation and the mishap location (if on a military installation) will follow the Aircraft Mishap procedures in Chapter 1 of AFMAN 15-129.

## Chapter 2

### MISSION INFORMATION

**2.1. General.** JB-MDL has many different organizations and missions. All systems, missions, and aircrews are limited by some weather parameters. This chapter will identify the local weapons system, the most common missions and operating areas, and weather sensitivities associated with the organization, weapons system, missions, and aircrews.

**2.2. Serviced Organizations and Missions.** 305 OSS/OSW provides weather services for the following organizations and tailors weather information to their mission requirements based on defined sensitivities:

2.2.1. Both the 305 AMW (Active Duty) and 514 AMW (Reserve) maintain, train, and operate the KC-10A Extender and C-17A Globemaster III. These units extend America's global reach by maintaining air mobility assets in a constant state of readiness to provide both an airlift and air refueling capability.

2.2.2. The 108 WG (Air National Guard) maintains, trains, and operates the KC-135R Stratotanker and C-32. This unit extends America's global reach by maintaining air mobility assets in a constant state of readiness to provide both an airlift and air refueling capability.

2.2.3. In addition to the flying mission, each serviced wing conducts flight-line maintenance and aerial port ground operations which are integral to effective accomplishment of the air mobility mission.

**2.3. Geographic Area of Responsibility.** The WF provides mission-tailored weather support for flying areas used by assigned or attached units to JB-MDL as well as base operations and protection responsibilities. Typical training missions involve air refueling and/or low level missions around the northeast US, however, given the global-reach mission of JB-MDL assets, the WF maintains situational awareness of weather events across the globe.

**2.4. Specific Weather Limitations.** A working knowledge of aircraft sensitivities allows WF personnel to focus effort on those weather elements that pose the greatest risk to the accomplishment of JB-MDL's air mobility mission.

2.4.1. KC-10A. The Extender is a dual-role tanker and cargo aircraft designed to maximize global mobility and force projection. For instance, the KC-10A can refuel deploying fighter aircraft while simultaneously carrying the ground crew and equipment. Weather sensitivities listed in [Table 2.1](#)

2.4.2. KC-135R. The Stratotanker's principal mission is air refueling. However, this aircraft can also perform a dual-role mission similar to the KC10. Weather sensitivities listed in [Table 2.2](#)

2.4.3. C-17A. The Globemaster III provides a rapid strategic delivery capability of all types of loads directly to forward bases in the deployment area. The aircraft is also capable of performing tactical airlift and airdrop missions within theater as required. Weather sensitivities listed in [Table 2.3](#)

2.4.4. C-32. The C-32 is a specially configured version of the Boeing 757-200 commercial intercontinental airliner. Weather Sensitivities listed in [Table 2.4](#)

2.4.5. C-9B. The Skytrain II mission is the transport of personnel and cargo. Weather sensitivities listed in **Table 2.5**

2.4.6. UH-1N. The Huey is widely used in a transport, airborne battlefield command and control, troop insertion/extraction, fire support coordination, medical evacuation, search and rescue, armed escort/visual reconnaissance or utility roles. Weather sensitivities are listed in **Table 2.6**

2.4.7. AH-1W. The Super Cobra is a twin-engine, day/night marginal weather Marine Corps attack helicopter that provides en route escort for assault helicopters and their embarked forces. Weather sensitivities are the similar to the Huey and are listed in **Table 2.6**.

2.4.8. CH-53E. The Super Stallion is the Marine Corps' heavy lift helicopter used to transport personnel and equipment, lift heavy loads and conduct minesweeping missions. Weather sensitivities are listed in **Table 2.7**

2.4.9. C-12B. The Kingair is a VIP logistics cargo aircraft designed to ferry VIP passengers and cargo within CONUS. The C-12 is a specially configured version of the Beechcraft BE-20. Weather sensitivities listed in **Table 2.8**

2.4.10. C-130T. The Hercules is designed for cargo and passenger transport and for support and utility operations from a wide variety of landing environments; from full sized runways to small fields and emergency airstrips. Weather sensitivities listed in **Table 2.9**

**Table 2.1. KC-10 Weather Sensitivities.**

Condition	Limit	Response Action
Dry Crosswind Landing or Take Off (T/O)	> 30 Knots (KT)	Delay or proceed to Alternate (ALT)
Wet Crosswind Landing	> 19KT	Delay or proceed to ALT
Wet Crosswind T/O (rwy 06/24)	> 20KT	Do not accomplish
Wet Crosswind T/O (rwy 18/36)	= / > 10KT	Do not accomplish
Wet/Dry Crosswind Touch & Go	15KT or greater	Do not accomplish
Tailwind	10KT or greater	Delay or proceed to ALT
Airframe Icing	Visible moisture is present	De-ice prior to moving
Freezing or Frozen Precip at T/O	Actively falling	Go through Anti-ice Pad
Freezing Rain	Moderate or greater	Delay or cancel
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Avoid
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
Low Level Wind Shear	Speed Loss	Avoid
Low Level Wind Shear	> 15KT considered severe	Delay or proceed to ALT

Wet snow, Ice , Water on RWY	> 1/2 inch	Delay or proceed to ALT
Dry snow on runway	> 4 inches	Delay or proceed to ALT
HF Communication Degraded	No specific limit	Use ALT communication
GPS error	Precision Approach not allowed	None

**Table 2.2. KC135 Weather Sensitivities.**

<b>Condition</b>	<b>Limit</b>	<b>Response Action</b>
Dry Crosswind Landing	greater than 25KT	Delay or proceed to ALT
Dry Crosswind (Training Sortie)	greater than 25KT	Delay or proceed to ALT
Wet Crosswind Landing	Approx 20KT or greater, depending on gross weight and other factors	Delay or proceed to ALT
Wet/Dry Crosswind Touch and Go	15KT or greater (Instructor Pilot)	Do not accomplish
Wet/Dry Crosswind Touch and Go	10KT or greater (Aircraft Commander)	Do not accomplish
Engine Icing	Temperature is less than 10C and visible moisture is present	Apply anti-ice
Freezing Rain at Takeoff	Actively falling	Do not takeoff
Freezing Drizzle at Takeoff	Actively falling	May takeoff after certain actions
Flight in Severe Icing	Any	Will be avoided
Flight in Freezing Rain	Any	Will be avoided
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Is prohibited
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
Low Level Wind Shear	Speed Loss	Avoid

**Table 2.3. C-17 Weather Sensitivities.**

<b>Condition</b>	<b>Limit</b>	<b>Response Action</b>
Dry Crosswind Landing or T/O	> 30KT	Delay or proceed to ALT
Wet Crosswind Landing	> 30KT	Delay or proceed to ALT
Wet Crosswind T/O	> 30KT	Do not accomplish
Wet/Dry Crosswind Touch & Go	>25KT for IP, >15KT for AC	Do not accomplish
Tailwind	> 10KT	Delay or proceed to ALT
Headwind	> 40KT	Delay or proceed to ALT
Airframe Icing	Visible moisture is present	De-ice prior to moving
Freezing or Frozen Precip at T/O	Actively falling	Go through Anti-ice Pad
Freezing Rain	Any	Delay or cancel
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Avoid
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
Low Level Wind Shear	Speed Loss	Avoid
Low Level Wind Shear	> 15KT considered severe	Delay or proceed to ALT
Ceiling / Visibility (Touch & Go Training Sortie)	< 300 feet (FT) and/or 3/4 statute miles (SM) and slush covered runway	Delay or cancel
Visibility plus crosswind for CAT II Instrument Landing System	< 1/2 SM / Runway Visual Range (RVR) less than 1200FT and crosswind > 10KT	Delay or proceed to ALT
High Frequency (HF) Communication Degraded	No specific limit	Use ALT communication
Global Positioning System (GPS) error	Precision Approach not allowed	None

**Table 2.4. C-32 Weather Sensitivities.**

<b>Condition</b>	<b>Limit</b>	<b>Response Action</b>
Dry Crosswind Landing or T/O	> 30KT	Delay or proceed to ALT
Wet Crosswind Landing or T/O	> 30KT	Delay or proceed to ALT
Wet/Dry Crosswind Touch & Go	> 25KT	Do not accomplish
Tailwind	Greater than 10KT	Delay or proceed to ALT
Airframe Icing	Visible moisture is present	De-ice prior to moving
Freezing or Frozen Precip at T/O	Actively falling	Go through Anti-ice Pad
Freezing Rain	Moderate or greater	Delay or cancel
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Avoid
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
Low Level Wind Shear	Speed Loss	Avoid
Low Level Wind Shear	> 15KT considered severe	Training – Delay or Cancel / Operational Mission avoid if possible
Ceiling / Visibility (Training Sortie)	Below applicable minimums	Delay or cancel
HF Communication Degraded	No specific limit	Use ALT communication

**Table 2.5. C-9B Weather Sensitivities.**

<b>Condition</b>	<b>Limit</b>	<b>Response Action</b>
Dry/Wet Crosswind Landing or T/O	> 30KT	Delay or proceed to ALT
Tailwind	>10KT	Delay or proceed to ALT
Airframe Icing	Visible airframe icing is present	De-ice prior to T/O
Freezing or Frozen Precip at T/O	Actively falling	Consult Icing Holdover Tables. De-ice/Anti-Ice/Avoid as Req'd
Freezing Rain	Actively falling	
Turbulence	Observed or Forecast Severe	Avoid
Mountain Wave Turbulence	Observed or Forecast Severe	Avoid
Low Level Wind Shear	Speed Loss	Avoid
Low Level Wind Shear	> 15KT	Avoid
Wet snow, water on RWY	> 1/2 inch	Avoid
Dry snow on runway T/O	> 3 inches	Avoid
Slush, water, wet snow landing	>1 inch	Avoid
Ceiling/Visibility for Takeoff	Less than landing minimums for runway in use	Requires Special Inst Rated Pilot
Flight Severe Icing	Forecast/Actively Falling	Avoid
Thunderstorms	<20 nm	Avoid

**Table 2.6. UH-1N.**

<b>Condition</b>	<b>Limit</b>	<b>Response Action</b>
Strong Winds	> 45KT	Do not start rotors delay and/or cancel
Tailwind	> 15KT	Do not start rotors
Moderate Winds	> 25KT	Tie down aircraft

**Table 2.7. CH-53E.**

Condition	Limit	Response Action
Strong Winds	> 45KT	Do not start/stop rotors delay and/or cancel  Do not fold/unfold blades  Do not fold/unfold pylons
Crosswind	> 35KT	Conduct landing into wind
Rolling Take-off Winds	> 40KT	Do not accomplish

**Table 2.8. C-12B Weather Sensitivities.**

Condition	Limit	Response Action
Dry Crosswind Landing or T/O	> 25KT	Delay or proceed to ALT
Wet Crosswind Landing	> 25KT	Delay or proceed to ALT
Wet Crosswind T/O (rwy 06/24)	> 25KT	Do not accomplish
Wet Crosswind T/O (rwy 18/36)	> 25KT	Do not accomplish
Wet/Dry Crosswind Touch & Go	> 25KT	Delay or proceed to ALT
Tailwind	>10KT	Delay or proceed to ALT
Airframe Icing	Visible moisture is present	Delay or cancel
Freezing or Frozen Precip at T/O	Actively falling	Delay or cancel
Freezing Rain	Visible moisture is present	Delay or cancel
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Avoid
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
Low Level Wind Shear	Speed Loss	Avoid
Low Level Wind Shear	> 15KT considered severe	Avoid
Wet snow, Ice , Water on RWY	> 1/2 inch	Avoid
Dry snow on runway	> 1/2 inch	Avoid
HF Communication Degraded	Not capable	Use ALT communication
GPS error	Precision Approach not allowed	None

**Table 2.9. C-130T Weather Sensitivities.**

Condition	Limit	Response Action
Dry Crosswind Landing or T/O	> 35 KT	Proceed to ALT; Delay or cancel
Wet Crosswind Landing or T/O (RCR≤12)	> 30 KT	Proceed to ALT; Delay or cancel
Icy Crosswind Landing or T/O (RCR≤5)	> 24 KT	Proceed to ALT; Delay or cancel
Airframe Icing	Visible moisture is present	De-ice prior to moving; visually verify clear of ice prior to runway.
Heavy Snow	Visibility < ¼ mi	Proceed to ALT; Delay or cancel
Freezing Rain	Actively falling	Proceed to ALT; Delay or cancel
Freezing Drizzle	Moderate; Actively Falling	Proceed to ALT; Delay or cancel
Ice Pellets	Actively Falling	Proceed to ALT; Delay or cancel
Turbulence	Observed Moderate	Avoid if possible
Turbulence	Observed or Forecast Severe	Avoid if possible
Low Level Wind Shear	Speed Loss	Avoid if possible

**2.5. Common Air Mobility Weather Sensitivities.** The sensitivities listed in [Table 2.10](#) are derived from AFI 11-202V3, *General Flight Rules* and the 11-2Cs for each airframe serviced by the WF.

**Table 2.10. Common Air Mobility Weather Sensitivities.**

T/O Weather Condition	Impact	Response Action
Ceiling/Visibility < available approach minimums	Takeoff alternate required	Find suitable airfield
RVR less than 1600 (Operational Sorties)	Aircraft launch delayed	Go when Touchdown RVR is 1200 and Rollout RVR is 1000 or greater
RVR less than 1600 (Training Missions)	Aircraft cannot launch	Wait until condition is met
Thunderstorms & associated phenomena	Aircraft launch delayed	Wait until thunderstorm conditions end

Ice, Frost, or Snow on wing and control surfaces	Aircraft cannot launch or delayed	Employ anti-ice action plan
Freezing rain or drizzle	Aircraft cannot launch or delayed	Employ anti-ice action plan
Wind greater than or equal to 50KT (CAT I)	Aircraft cannot launch or delayed	Wait until condition no longer exists
Thunderstorms	Deviation or cancellation of flight plan	Maintain 20NM clearance at and above FL230 Maintain 10NM clearance below FL230
Severe Turbulence	Deviation or cancellation of flight plan	Reroute around area
Severe Icing	Deviation or cancellation of flight plan	Reroute around area
Moderate Mountain Wave Turbulence	Halts mission progress	Cancel or re-plan mission
Tropical Storm	Deviation or cancellation of flight plan	Reroute around area
Ceiling/Visibility < 2,000 / 3 at Destination	Landing alternate required	Add fuel for divert
Ceiling/Visibility >=500 ft above lowest applicable published landing minimum & 2SM or published visibility minima whichever is greater.	Not suitable alternate	Select another alternate
Thunderstorms & associated phenomena	Aircraft arrival delayed/cancelled	Wait until conditions improve or proceed to alternate
Ice, snow, or slush on runway	Aircraft arrival delayed/cancelled	Wait until conditions improve or proceed to alternate
Freezing rain or drizzle	Aircraft arrival delayed/cancelled	Wait until conditions improve or proceed to alternate
Wind greater than or equal to 50KT (CAT I)	Aircraft arrival delayed/cancelled	Wait until conditions improve or proceed to alternate

**2.6. Weather Sensitivities for En Route Events.** Given the variety of aircraft operated by JB-MDL aircrew, the WF needs to be well-versed in the full spectrum of en route air mobility or training sortie events listed in [Table 2.11](#)

**Table 2.11. Air Mobility Weather Limitations For En Route Events.**

<b>AR Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>
Thunderstorms	Cannot AR.	Reroute around area
Severe Turbulence	Cannot AR.	Reroute around area
Severe Icing	Cannot AR.	Reroute around area
Moderate Turbulence	AR difficult/KC-10 cannot AR	Attempt or re-plan mission
Flight Visibility < 1NM	Cannot AR Single Receiver	Re-plan mission
Flight Visibility < 2NM	Cannot AR Formation Receivers	Re-plan mission
<b>DZ Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>
Winds 13KT including gusts	Limit personnel static line (land)	Cancel or delay air drop
Winds 17KT including gusts	Limit personnel static line (water)	Cancel or delay air drop
Winds 18KT including gusts	Limit for personnel HALO	Cancel or delay air drop
Ceiling / visibility less than 300FT and/or ½NM	Limit for Air Force Training	Cancel or delay air drop
<b>LZ Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>
Ceiling / Visibility < 600 & 2	Instrument approach minimum	Cancel or delay training
Ceiling / Visibility < 1500 & 3	Must have VMC flight condition	Cancel or delay training
Crosswind > 15KT	Cannot perform NVG approach	Cancel or delay training
<b>IR Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>
Ceiling / visibility less than 300FT and/or ½NM	Limit for Air Force Training	Cancel or delay training
Thunderstorms	Limit for Air Force Training	Cancel or delay training
Severe Turbulence	Limit for Air Force Training	Cancel or delay training
Severe Icing	Limit for Air Force Training	Cancel or delay training
<b>VR Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>
Ceiling / visibility less than 1500FT and/or 3NM	Limit for Air Force Training	Cancel or delay training
Thunderstorms	Limit for Air Force Training	Cancel or delay training
Severe Turbulence	Limit for Air Force Training	Cancel or delay training
Severe Icing	Limit for Air Force Training	Cancel or delay training
<b>SR Mission Weather Condition</b>	<b>Impact</b>	<b>Response Action</b>

Ceiling / visibility less than 5000FT and/or 3NM	Limit for Air Force Training	Cancel or delay training
Thunderstorms	Limit for Air Force Training	Cancel or delay training
Severe Turbulence or Icing	Limit for Air Force Training	Cancel or delay training

**2.7. JB-MDL Ground Operations Weather Sensitivities.** The WF provides and assists in a meteorological watch service resulting in timely notification of the criteria listed in [Table 2.12](#)

**Table 2.12. JB-MDL Ground Operations Weather Sensitivities.**

Weather Phenomena	Desired Lead Time	Impact	Response Action
Tornado	10 min	Personal injury, property damage, and equipment damage	Seek shelter; divert aircraft
Hail (1/2" or more)	120 min	Personal injury, property damage, and equipment damage	Seek shelter; hangar or divert aircraft
Freezing Precipitation	60 min	Delay or cease ground operations and transportation	Limited duty reporting, increased roads & grounds crew requirements
Surface winds greater than or equal to 50KT (CAT I)	120 min	Delay or cease ground operations	Secure aircraft, equipment, and loose objects
Surface winds 35KT - 49KT (CAT II)	60 min	Delay or cease ground operations	Limit ground operations, secure equipment and loose objects
Surface winds 25KT – 34KT (CAT III)	60 min	Delay or cease ground operations	Limit ground operations, secure equipment and loose objects
Rainfall 2" or more in a 12-hour period	120 min	Delay or cease ground operations	Limit ground operations; increase awareness to local flooding
Snow accumulation of 4" or more in a 12-hour period	120 min	Delay or cease ground operations and transportation	Limited duty reporting; increased roads & grounds crew requirements; implement snow removal plan

Snow accumulation of ½” or more but less than 4” in a 12-hour period	60 min	Delay or cease ground operations and transportation	Limited duty reporting; increased roads & grounds crew requirements; implement snow removal plan
Wind greater than or equal to 30KT and visibility reduced to less than ¼ mile lasting for a period of at least 3 hours (Blizzard)	60 min	Delay or cease ground operations and transportation	Limited duty reporting; increased roads & grounds crew requirements; implement snow removal plan; secure aircraft, equipment, and loose objects
Lightning within 25NM	Observed	Rethink ground operations	Increase awareness of storms; begin re-planning ground operations
Lightning within 10NM	Observed	Rethink ground operations	Increase awareness of storms; begin re-planning ground operations
Lightning within 5NM	Observed	Ground operations and transportation cease	Implement alternate ground operations plan
Equivalent wind chill less than or equal to -20F	Observed	Delay or cease ground operations	Limit personnel exposure

**Table 2.13. Child Development Center, Youth Center, School Age Program, And Family Child Care Weather Sensitivities.**

Weather Phenomena	Impact	Response
Lightning in area (no specific distance noted)	Possible injury to children	Move children inside when lightning possess a hazard to children outside
Heavy Rain, Sleet or Snow	Generally poor weather	Children will play indoors
Temperature or wind chill <= 20°F	Cold weather hazard	Children will play indoors
Temperature or wind chill >20°F	Cold weather caution	Short periods, 10-15 min, of outdoor play allowed except for infants < 12 months
Temperature/wind chill/heat index > 32°F but < 85°F	None	All children including infants allowed outdoor play
Temperature or heat index >= 95°F	Heat stress	Short periods, 10-15 min, of outdoor play allowed at director discretion with exception of infants < 12 months

## Chapter 3

### AIRFIELD SERVICES

**3.1. General.** Airfield services specified within this chapter include those actions that affect the McGuire Field (locally defined as 5.3 miles of the airfield). Examples of airfield services include weather observations, PMSV, and resource protection. Resource protection, while considered an airfield services function, can impact the entire installation and is addressed in [Chapter 8](#). Airfield services workload varies on many factors including equipment, communications lines status, and current/forecasted weather conditions that drive the local watch condition.

**3.2. Operational Hours.** The operational hours are Monday through Friday 0600-2000L, closed on weekends and federal holidays. Hours of operation can be adjusted to reflect seasonal weather differences, ie evening thunderstorms. The WF maintains standby personnel during all closure hours that can be contacted/recalled through the JB MDL Command Post. The WF also maintains the capability to surge to 24 hour operations as needed based on weather events or mission as directed by local command authority. Airfield Services are always be available remotely by the 15 OWS and/or 618 TACC via phone patch. If ATC facilities are closed for flight operations during a significant weather event, ie winter storm, the WF will continue to provide weather services.

**3.3. Observations.** The FMQ-19 Automated Meteorological Observing System records and disseminates an official automated weather observation taken at a minimum of one every hour. Additional observations are made when Special (SPECI) meteorological criteria are met as outlined in DOD FLIPS and AFMAN 15-111, see [Attachment 3](#) for criteria. The official point of observation for McGuire Field in automated operation is the primary sensor group and the approach end sensor data for the active runway (I.e. Wind, Runway Visual Range (RVR)/Visibility, Clouds) [Attachment 8](#). Weather technicians will adhere to applicable AFMAN guidance and locally produced SOPs while working closely with ATC under the Cooperative Weather Watch program to ensure accurate weather observations. See [Attachment 5](#) for assistance with decoding of observation.

3.3.1. FMQ-19 Supplement Operations. Supplementation is a method of manually adding meteorological information to an automated observation that is beyond the capabilities of the automated observing system to detect and/or report.

3.3.1.1. Weather technicians will supplement observations when the airfield is open and the weather conditions in [Table 3.1](#) are observed.

3.3.1.2. Weather technicians will perform a Basic Weather Watch from the observing location and be ready to supplement observations if the conditions in [Table 3.1](#) are forecast to occur within 2 hours.

3.3.1.3. When the Severe Weather Action Plan (SWAP) is activated, all supplement criteria with the exception of Snow Depth will be evaluated either from the Base Weather Station (BWS) or from the ROS/AOL. The determination will be made by the ranking weather person on-site. The ROS/AOL provides a more advantageous observing location

but the situation, manning, risk management, and time considerations will be factored into the decision to move observing operations from one location to the other.

3.3.1.4. Weather personnel are required to log on to the (FMQ-19) and be prepared to supplement whenever a watch or warning has been issued for tornadic activity.

3.3.1.5. Normally, snow depth will be evaluated at the Base Weather Station observation site for consistency purposes. If snow depth is measured at either observing location (ROS or BWS) for an event, it will be measured at that location for the duration of the event and/or if new snowfall occurs on top of the original snowfall. (i.e. until new snowfall occurs on bare ground)

3.3.1.6. Weather technicians will only supplement for the criteria listed in **Table 3.1.**

**Table 3.1. Mandatory Supplement Criteria For McGuire Field. (Reference AFMAN 15-111 Table 3.1. Summary Of Mandatory Supplementary Weather Conditions).**

Mandatory Supplementary Weather Conditions - Body of Report (Note 1.)
Tornado (+FC) (Note 2) (Note 3)
Funnel Cloud (FC) (Note 2) (Note 3)
Waterspout (+FC) (Note 2) (Note 3)
Hail (GR) (local warning criteria only: For JB-MDL ½”+)
Volcanic Ash (VA)
Mandatory Supplementary Weather Conditions- Remarks Section of Report (Note 1.)
<b>Funnel Cloud</b> (Tornadic Activity _B/ E(hh)mm_LOC/DIR_(MOV)) (Note 2)
<b>Snow Depth</b> (Note 4) (only during airfield operating hours and if a snow warning (For JB-MDL: GTE ½” in 12 hr) has been issued and snowfall is occurring)
NOTES:
1. References for coding of augmentable weather conditions are located in AFMAN 15-111 Chapter 13.
2. The immediate reporting of funnel clouds takes precedent over any other phenomena.
3. Log on to AMOS (FMQ-19) and be prepared to supplement for tornadic activity anytime a weather watch or warning has been issued for the phenomena.
4. All Remarks and Additive Data references are provided in AFMAN 15-111, Attachment 3.

3.3.2. FMQ-19 Back-up Operations. Back-up is the method of manually providing meteorological data and/or dissemination to an AMOS observation when the primary automated method is not operational or unavailable due to sensor and/or communication **failure**. This does not include providing “back-up” for conditions reported by the FMQ-19 that can be attributed to the systems’ algorithms. (i.e. FMQ-19 reports SCT002 vs. human BKN002).

3.3.2.1. Weather technicians will follow duty priorities and provide back-up augmentation whenever any or all of the FMQ-19 provided criteria listed in **Table 3.2** are missing, due to sensor or communication failure. (i.e. if these criteria are not showing up in the local or longline observation).

3.3.2.2. There is no requirement to back-up the system/sensor when the airfield is closed, unless tornadic activity is occurring or forecast to occur, then back-up and supplement as necessary.

**Table 3.2. Summary Of Mandatory Back-up Encoding For McGuire Field.**

<b>Body of Report (Note 1.) Summary of REQUIRED parameters to be backed up</b>	
<b>Back-up Encoding</b>	<b>Requirement</b>
Type of Report (METAR/SPECI)	X
Station Identifier (KWRI)	X
Date and Time of Report (YYGGggZ)	X
Report Modifier (COR)	X
Wind (dddff(f)Gfmfm(fm)KT_dndndnVdxdxdx)	X*
Visibility (VVVVVSM) or (VVVV)	X
Runway Visual Range (RDRDR/VRVRVRVRF) or (RDRDR/VNVNVNVNVXVXVXVXFT)	Note 1.
Sky Condition (NsNsNshshshs or VVhshshs or CLR)	X
Present Weather Group (Precipitation, Obscurations, Other Phenenomea) AFMAN 15-111 Table 8.8. & Chapter 8.	Note 2.
Temperature and Dew Point (T'T'/T'dT'd)	X
Altimeter (APHPHPHPH)	X*
<p>X - Indicates required data when not included in the automated observation NOTES: 1. Back-up RVRNO Sensor Status and Maintenance Indicator (\$) remarks if not provided by an AMOS. There is no back-up required for VISNO (LOC) and CHINO (LOC) remarks if not provided by system.</p> <p>2. FMQ-19 observed present weather will not be modified in Augmented mode unless: UP is reported, then observe using AFMAN 15-111, table 8.8. or the entire FMQ-19 is inoperable (i.e. entire system is down)</p> <p>3. All Remarks and Additive Data references are provided in AFMAN 15-111, Attachment 3.</p>	
<b>Remarks Section of Report - Consists of 2 Categories (Note 3.)</b>	
<b>Category 1 - Automated, Manual, and Plain Language</b>	
Back-Up Remarks	<b>Requirement</b>

Augmented Unit Indicator (AO2A)	X
Peak Wind (PK_WND_dddff(f)/(hh)mm)	X
Wind Shift (WSHFT_(hh)mm)	X
Variable Prevailing Visibility (VIS_vnvvnvvnVvxvxvxvx)	X
Lightning (LTG[LOC])	X
Beginning/Ending of Thunderstorms (TSB(hh)mmE(hh)mm)	X
Variable Ceiling Height (CIG_hnhnhnVhxhxhx)	X
Variable Sky Condition (NSNSNS(hShShS)_V_NSNSNS) [Plain Language]	X
Ceiling Height at Second Location (CIG_hhh_[LOC])	Note 1.
Pressure Rising/Falling Rapidly (PRESRR/PRESFR)	X
Sea Level Pressure (SLPppp)	X
<b>Category 2 – Additive Data (Note 2.)</b>	
<b>Back-up Additive Data</b>	<b>Requirement</b>
Hourly Precipitation Amount (Prrrr)	Note 2
3- and 6-Hour Precipitation Amount (6RRRR)	X
24-Hour Precipitation Amount (7R24R24R24R24)	Note 2
Hourly Temperature and Dew Point (TsnT'T'T'snT'dT'dT'd)	Note 2
6-Hourly Maximum Temperature (1snTxTxTx)	Note 2
6-Hourly Minimum Temperature (2snTnTnTn)	Note 2
24-Hour Maximum and Minimum Temperature (4snTxTxTxsnTnTnTn)	Note 2
3-Hourly Pressure Tendency (5appp)	Note 2
<b>RVRNO</b>	<b>Note 1</b>
Maintenance Indicator (\$)	<b>Note 1</b>
<p>X - Indicates required data when not included in the automated observation</p> <p>* - When taken from Kestrel, MUST be estimated values (i.e. WND DATA ESTMD ALSTG/SLP ESTMD)</p> <p><b>NOTES:</b> 1. Back-up RVRNO Sensor Status and Maintenance Indicator (\$) remarks if not provided by the AMOS. There is no back-up required for VISNO (LOC) and CHINO (LOC) remarks if not provided by system.</p> <p>2. Required when provided by FMQ-19 or TMQ-53. Not required if not available from either system. ***Exceptions are for midnight LST observation. Refer to AS SOP 3 Attach 9***</p> <p>3. All Remarks and Additive Data references are provided in AFMAN 15-111.</p>	

3.3.2.3. When the outage is expected to be LESS than 2 hours backup the required weather elements from the base weather station observation site outside of bldg 1730.

3.3.2.4. When the outage is expected to be MORE than 2 hours backup the required weather elements from the ROS (Bldg 1608) when operationally possible.

3.3.2.4.1. Due to the break in service and equipment outage the weather technicians will complete and transmit an augmented observation within 15 minutes of arrival at the ROS.

3.3.2.5. When FMQ-19 pressure sensor data is unavailable:

3.3.2.5.1. 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 altimeter setting (ALSTG) value. Any other required observation taken within the 35 minute timeframe will meet this requirement (i.e. a scheduled METAR or SPECI)

### 3.4. Observing Limitations.

3.4.1. Airfield Weather Sensor Limitations. There are no identified limitations with the FMQ-19 sensor suites

3.4.2. Location. Primary manual observing location is across the street and to the right of bldg 1730 across street in grass meridian. Due to the weather flight location, building 1730, being distanced from the airfield there are significant operational impacts due to surrounding buildings and obstructions. Sky condition, visibility, present weather and wind assessments cannot always be considered representative of airfield conditions, especially while performing FMQ-19 augmentation. To alleviate these limitations the weather flight will perform supplemental criteria actions from the alternate observing location, building 1608, while considering safety and the need to keep an individual at the weather station to monitor the OPUP radar as required; perform back up criteria actions from the alternate observing location if the FMQ-19 sensor or communications failure is estimated to last more than two hours. For outages estimated to last less than two hours back up criteria actions will be performed from the base weather station observing site.

3.4.3. Lightning. Lightning may not be seen due to distance, low clouds, or poor visibility. Thunder may not be heard because of flight-line noise.

3.4.4. An automated surface observing system (ASOS) is located at the Lakehurst airfield. This system is currently fully automated with no augmentation capability available to Navy weather personnel located at Lakehurst.

3.4.4.1. Lightning detection is limited to cloud to ground strikes.

### 3.5. Local Watch Conditions.

3.5.1. Continuous Weather Watch (CWW). The fully functioning FMQ-19 observing system performs an automatic CWW and is the standard local watch condition for KWRI. During FMQ-19 augmentation, weather personnel will perform a Basic Weather Watch when providing back-up due to a FMQ-19 sensor or communications failure.

3.5.2. Basic Weather Watch (BWW). Establishes the minimum requirements needed to ensure the proper level of weather watch is maintained while augmenting the FMQ-19. Depending on the specific reason for augmentation the BWW may or may not be performed in tandem with the FMQ-19 automated CWW, and will be performed from building 1730 (BWS) or the AOL building 1608 (ROS) located near the air traffic control tower.

3.5.2.1. BWW established due to supplemental criteria/SWAP.

3.5.2.2. 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 following conditions are observed to be occurring or are forecast to occur within 1 hour:

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

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

3.5.2.2.3. Visibility decreases to less than 3 miles (4800 meters).

3.5.2.2.4. Visibility increases to equal or exceed 3 miles (4800 meters).

3.5.2.2.5. Precipitation (any form).

3.5.2.2.6. Thunderstorms.

3.5.2.2.7. Fog or Mist.

3.5.2.3. In addition to the above minimum requirements, weather technicians will remain alert for any other changes in weather conditions that will require a SPECI observation. Weather technicians will also monitor local area observational and forecast products as often as necessary to keep abreast of changes expected to affect the area of responsibility.

**3.6. Cooperative Weather Watch.** This is a program wherein qualified non-weather personnel assist the weather observer in monitoring the weather conditions for the occurrence of previously unreported weather conditions which could affect flight safety or which could be critical to the safety or efficiency of other local operations and resources.

3.6.1. At JB-MDL, a Cooperative Weather Watch is in effect between weather flight and air traffic control tower personnel.

3.6.2. Training is provided through the base weather flight office.

**3.7. METWATCH.** METWATCH provides an organized approach for weather personnel to maintain situational awareness of the current/future meteorological situation within a designated area(s). This process involves notifying supported units and updating any forecast products when pre-established weather conditions or unforecasted changes (timing, location, or forecast values) in weather occur or are expected to occur. All on-site meteorological and commercial data sources (weather satellite, weather radar, websites, NOAA weather radio, etc.) may be used to accomplish this task.

3.7.1. The 15 OWS will perform a continuous Terminal METWATCH for JB-MDL. WF personnel act as the “eyes forward” for the TACC and 15 OWS by providing immediate feedback on current or short-term anticipated changes in weather conditions.

3.7.2. 15 OWS will also perform Flight and Route METWATCH for transient flights they briefed that are departing from McGuire Field.

3.7.3. The WF will perform Flight and Route METWATCH for transient flights departing McGuire Field that were briefed by WF personnel. Transient missions (cross-country, trans-Atlantic, etc) are not considered “local” though the mission’s origins may have started/ended at JB-MDL.

**3.8. Eyes Forward Process/Procedure.** This process/procedure is the WF’s role in allowing for the integration of real-time weather data, meteorological satellite imagery, lightning detection readouts, and non-standard weather data systems to create an integrated weather picture and near-term forecast for the OWS.

3.8.1. The WF provides meaningful meteorological information not contained in the coded observations to the TACC and/or 15 OWS at Scott AFB as an integral part of our METWATCH process.

3.8.2. The WF integrates the current state of the atmosphere into an understanding of future impacts on forecast conditions and communicates the impacts and information to the TACC and/or 15 OWS.

**3.9. PMSV Support.** Weather information is available via PMSV radio during operating hours on UHF frequency 239.8. Given the one-deep manning of the WF, there will be short periods of time (physical requirements, etc) where the PMSV will not be continuously monitored.

3.9.1. The duty forecaster will also monitor PMSV traffic whenever in station during non-standard duty hours.

3.9.2. For aircraft outside the range of our PMSV system, the WF can provide PMSV support via phone patch through the JB MDL Command Post.

3.9.3. If the PMSV radio becomes inoperable, the WF should make arrangements for Langley AFB weather personnel to monitor 239.8 MHz and respond to calls for McGuire Field (call-sign McGuire METRO).

**3.10. Weather Sensors.** (further defined in Chapter 10)

3.10.1. FMQ-19 - The 87 CS Airfield Systems flight maintains the FMQ-19 at McGuire Field IAW applicable technical orders.

3.10.2. The FMQ-19 observing system is equipped with:

3.10.2.1. Visibility sensors located at take of/rolling points of runways 18/30 and 24/06 as well as center point for 24/06.

3.10.2.2. Temperature and Dew-point Sensor.

3.10.2.3. Wind Monitor.

3.10.2.4. Laser Beam Ceilometer (LBC) for cloud height detection

3.10.2.5. Precipitation Sensor.

3.10.2.6. Pressure Sensor.

3.10.2.7. Lightning Detection System (LDS).

3.10.3. Weather Surveillance Radar, 1988 Doppler (WSR-88D).

3.10.4. Sonic Detection and Ranging (SODAR) for detecting vertical reading of winds.

## Chapter 4

### MISSION SERVICES

**4.1. General.** Mission services are those actions directly related to completing each customer's daily mission(s). The Mission Execution Forecast Process (MEFP) is the primary tool used to accomplish these tasks. MEFs are tailored to individual customer requirements and may be anything from a web-based flight weather briefing to a change-of-command weather forecast. Primary mission weather services for all AMC flight operations are controlled through TACC. The WF will back-up these operations and provide or arrange for transient flight missions through the 15 OWS as required. Any event, both flying and non-flying, that will be affected by weather normally requires a MEF to meet the size, scope, and needs of the customer.

**4.2. Lead Weather Unit (LWU).** Aircrew and weather personnel should use the guidance provided below to determine the primary weather information provider for those missions or portions of missions that are not multi-unit tasked. Aircrew and weather personnel should use **Table 4.1** to determine the primary weather information provider of the multi-unit portion of a particular mission.

4.2.1. Crews Departing Home Station. These are crews assigned to the 305 AMW, 514 AMW, and 108 WG. TACC has assumed control as the lead weather unit and provides all mission weather services.

4.2.2. Crews Not Departing Home Station. While off-station (in-transit), aircrew should contact the Operational Weather Squadron (OWS) assigned with geographic responsibility covering the departure location IAW Air Force Visual Aide (AFVA) 15-136, *Air Force Operational Weather Squadron Area of Responsibility - CONUS*, AFVA 15-137, *Air Force Operational Weather Squadron Area of Responsibility - OCONUS*, and the Flight Information Handbook Part C. An OWS desires a two-hour notice prior to brief delivery.

4.2.3. Transient Crews Departing McGuire Field. These crews (Air Force, Army, Navy, guard, reserve, civil, and international) should contact the WF or 15 OWS for flight weather services. The 15 OWS desires a two-hour notice prior to brief delivery. The McGuire WF maintains a set of service instructions within a centralized service area in building 1730 to assist transit aircrews during non-duty hours.

4.2.4. AMC Flight Managed Sorties. All Integrated Flight Management (IFM) sorties also receive flight weather information from TACC. Flight managed aircrew should work through their assigned flight manager (FM) to resolve weather issues and concerns. A robust team of experienced forecasters work directly with FMs in real time on the TACC operations center floor. The WF can update T/O weather and provide access to weather information products upon request.

**NOTE:** Details regarding mission limiting weather must be worked in concert with the TACC.

**Table 4.1. Determination of Lead Weather Unit.** (Reference AFMAN 15-29 Table 1.4. Prioritized Rules For Determining The Lead Weather Unit).

Type of Mission	Designated Lead Weather Unit
Joint Missions	Joint Meteorology and Oceanography (METOC) Officer (JMO) defines weather for a Joint Operation in Joint Operations Letter of Instruction or support message
Air and Space Expeditionary Force (AEF)	Weather Unit supporting the designated AEF
Global Mobility Task Force (GMTF) operations	Unit providing weather information to the GMTF Command and Control (C2) element
GLOBAL POWER	Unit providing weather information to the Air Combat Command (ACC) C2 element. Normally the ACC Air Operations Group Weather Element
CORONET	Unit providing weather information to the ACC C2 element. Normally the ACC Air Operations Group Weather Element
AMC IFM Missions	Weather unit assigned to the particular IFM C2 element determined as tasked by AMC, Pacific Command, or European Command
GLOBAL REACH	Unit providing weather information to the AMC C2 element. Normally the Global Mobility Weather flight-15OWS/WXM
AR Mission	Unit providing weather information to the lead receiving aircraft unit
Joint Airborne/ Air Transportability Training (JA/ ATTs) & Drop Zone	Unit providing weather information to the lead aircraft unit
Landing Zone & Land Maneuver	Weather unit attached to the lead Army unit
Deployed or Transient	Weather unit assigned/attached to the unit at home station
Special Operations	Depends on the nature of the operation. When Special Operations Forces (SOF) operate solely in their own channels, the SOF CWT or SOFWOC is the lead weather unit

**4.3. Terminal Aerodrome Forecasts (TAFs).** Terminal Aerodrome Forecast (TAF). Used by DoD and NWS weather forecasters to encode and decode forecasts. See [Table 4.2](#) below for an example TAF. Air Force Pamphlet 11-238, *Aircrew Quick Reference to the METAR and TAF codes*, gives instructions on how to decode the TAF. Unless otherwise specified, the forecast weather elements in the main body of the forecast text (clouds, weather, wind, etc.) apply to the area within a five statute mile radius of the McGuire Field runway complex. Forecast elements represent the most probable conditions expected during the forecast period. The term Vicinity (VC) may be used and normally refers to the area between 5 and 10 statute miles from the center of the runway.

**Table 4.2. TAF Example.**

TAF AMD KWRI 241410 30010G15KT 9999 OVC015 620159 QNH2961INS
BECMG 1617 28012KT 9999 SCT015 OVC040 QNH2968INS
BECMG 1920 24012G25KT 8000 -SHRA SCT040 BKN100 OVC200 QNH2960INS
TEMPO 2022 25040G60KT +FC +TSRA OVC025CB
BECMG 2122 30015G25KT 9999 NSW SCT030 BKN100 QNH2956INS
BECMG 0809 VRB06KT 3200 BR FEW250 QNH2980INS
BECMG 1011 VRB06KT 1600 BR SCT000 SCT250 QNH2990INS BR SCT000 T22/20Z TM01/09Z AMD 1405

4.3.1. The 15 OWS, in coordination with the WF, issues the 24-hour TAF for McGuire Field under the International Civil Aviation Organization (ICAO) identifier KWRI. TAFs are issued three (3) times daily at the following times: 0200 UTC, 1000 UTC, and 1800 UTC.

4.3.2. TAF Amendments. The 15 OWS and McGuire WF will ensure the TAF is representative of expected or actual conditions and will amend the TAF for the criteria listed in [Attachment 4](#).

**4.4. Mission Execution Forecast (MEF).** MEFs are essentially mission-specific forecasts that are developed using a 12-step process outlined in AFMAN 15-129, and may be provided by a number of methods (web-based, verbally, person-to-person, etc). During this process, the WF will fuse and tailor products created by strategic and theater weather centers, as well as information supplied by local units (e.g., flying schedules) and agencies. The end result is a product/information designed to provide timely, accurate, and relevant weather intelligence to various customers by whatever means proves most effective. MEFs must be horizontally consistent with (but not necessarily mirror) products issued by AFWA and all Operational Weather Squadrons used to create the MEF. However, during rapidly changing conditions, emergencies, or when conditions threaten resource protection, the WF will amend the MEF to accurately reflect conditions and back brief the 15 OWS when time permits.

4.4.1. Mission Planning. The WF will mount a maximum effort to fuse mission limiting weather information into the mission planning process. Information should be focused on operational risk management. Mission planners should conduct a risk mitigation evaluation that considers both safety and successful mission accomplishment and alter plans as necessary and possible to achieve maximum results. Mission weather intelligence integrated

early into the mission generation cycle can lead to more efficient use of personnel and materials.

4.4.2. Flight MEFs. TACC has the lead for all AMC flight MEFs. The WF maintains situational awareness of missions and is prepared to back-up operations as needed. The Flight MEF is a unique product incorporating requirements from all McGuire-based flying units into a common format in GDSS 2. Navy and Marine units on JB-MDL will leverage reach back support to their respective mission services section for flight weather briefing similar to the AF process which is through TACC.

4.4.2.1. Flight MEFs include forecast take-off weather, winds and hazards en-route, air-refueling route forecasts, landing weather, and aircraft specific weather elements. In addition, space weather products are used to predict performance of HF, UHF, and GPS systems in the MEF.

4.4.2.2. Flight MEFs are developed from information provided by local flying schedules (GDSS 2). The forecaster performs a MISSIONWATCH for mission limiting weather at McGuire Field, route weather, A/R weather and planned destinations. If weather crosses any threshold at any time for any mission, the TACC mission services forecaster will notify the crews or, if support is through the WF, the forecaster will notify the JB MDL CP who will in turn notify the aircraft commander.

4.4.3. Space Weather. As provided by Joint Air Force and Army Weather Information Network (JAAWIN) Space Weather products at <https://weather.afwa.af.mil/jaawin/space/main.jsp>

4.4.4. Verbal Brief. Crew members can choose to receive mission weather information verbally without the use of GDSS 2, local flying MEF, or Department of Defense (DD) Form 175-1. In such cases, the WF should maintain a log recording information passed to the crew as well as the brief time and crew member initials.

4.4.5. Transient Aircraft Weather Briefings. Weather personnel will provide or arrange for full flight MEFs and/or updates to traditional DD Form 175-1, *Flight Weather Briefing* to aircrews as requested following the flight's duty priorities listed in **Table 1.2** Transient briefings can be obtained via the 15 OWS on-line, at the weather flight, or via fax/phone.

**4.5. MISSIONWATCH.** This term is used to describe the process by which the WF monitors the weather for all local customer missions. The WF maintains continuous situational awareness of weather conditions for all AMC mission sorties being planned, executed, and recovered. Weather conditions may change unexpectedly while sorties are in execution. The WF monitors conditions over all areas in which their sorties are executing. Whenever conditions change for the worse and threaten successful mission accomplishment or recovery, the WF will coordinate with TACC, 15 OWS or local JB MDL CP to notify the affected crews or agencies.

4.5.1. All on-site meteorological and commercial data sources (weather satellite, weather radar, websites, etc.) may be used to accomplish this task and is the primary responsibility of the duty forecaster. It is through this method that MEF amendments/updates are accomplished.

4.5.2. During rapidly changing weather, the WF will amend/update the MEF as required.

4.5.3. Go/No-Go criteria and response actions are outline in chapter 2.

**4.6. Tanker Airlift Control Center (TACC).** The majority of the missions leaving McGuire Field are TACC controlled Integrated Flight Management (IFM) and local sorties/missions. As such, TACC Weather will be the Lead Weather Unit (LWU) for these missions. The WF will:

- 4.6.1. Update takeoff weather on the IFM and local MEFs as needed.
- 4.6.2. Notify the TACC if the takeoff update includes any of the criteria listed in **Table 4.3**.
- 4.6.3. Consult/coordinate with TACC's LWU as required to resolve any aircrew concerns/issues with the IFM Controlling MEF.
- 4.6.4. Facilitate discussions between aircrew members and TACC's LWU to elaborate on weather impacts and/or answer aircrew questions. The LWU is the final arbiter for weather issues involving IFM and local sorties/missions.

**Table 4.3. Weather Criteria Requiring TACC's LWU Notification.**

Ceiling visibility less than or equal to 200ft/1/2sm (or other published airfield limitations)
Dry runway crosswind (predominant wind) 25 kt or greater.
Wet runway crosswind (predominant wind) 20 kt or greater.
Observed Low Level Wind Shear (LLWS) for all AMC aircraft.
Predominant thunderstorms on station.
Freezing participation.
Moderate (or greater sensitivity) turbulence/icing.
Forecast or observed volcanic ash or takeoff

**4.7. Space Weather Forecast.** The WF monitors space weather forecast information provided by the AF Weather Agency (AFWA). The WF will incorporate space weather forecasts into MEFs whenever the near earth environment and/or atmospheric conditions pose a mission hazard due to degradation or loss of communication and/or navigational capability. (See **Chapter 6**.)

## Chapter 5

### STAFF WEATHER SERVICES

**5.1. General.** Staff weather services are provided on both a routine and situational basis. Examples include command-level staff briefs, Crisis Action Team (CAT) assembly, operational planning, Cooperative Weather Watch training, and Instrument Refresher Course (IRC) briefings.

**5.2. Operational Hours.** The majority of briefs are provided during normal duty hours (0730-1630 local). Contingency, emergency, and exercise briefings are provided as required or whenever deemed necessary.

**5.3. Staff Briefings.** Staff weather briefings for 305 AMW and 87 ABW will be provided as required. Standard information includes satellite, a 5-day outlook, operational risk management stoplight chart and slides covering the European and the Middle Eastern AORs (as required). Additional slides may be required such as hurricane track updates or quarterly climatology information.

**5.4. Cooperative Weather Watch/ATC Limited Observation Training.** This training is provided to select ATC personnel to provide an effective cooperative weather watch. ATC Limited Observing Training is available in the weather flight office in bldg 1730. ATC personnel seeking training should call the weather flight at DSN 650-3992 or visit the office to schedule an appointment.

**5.5. Instrument Refresher Course Briefings (IRC).** IRC briefings for the 305th Air Mobility Wing are PowerPoint based presentations and are maintained at the Field Training Unit (FTU). WF personnel will brief the slides upon request when classes are scheduled. Two weeks advance notice is required to schedule a weather briefer.

**5.6. Contingency/Exercise CAT Briefings.** The WF will provide weather briefings as required for CAT briefings. This includes wartime, real-world emergency, exercise, and deployment briefings. Each briefing will be flexible in format and tailored to provide the appropriate weather intelligence required as directed by wing leadership.

**5.7. Climatology Briefings.** Quarterly climatology data is provided to the Joint Base McGuire-Dix-Lakehurst (JBMDL) Commander and 305 AMW/CC at the first staff briefing held in the months of November, February, May, and August. The contents of the briefing will cover climatology data for the season, i.e. the November climatology brief will cover the winter season (December through February). The format for the briefings is an additional PowerPoint slide added to the standard staff briefing slides. Additional climatology briefings or information will be provided upon request.

**5.8. Operations Planning.** Weather information should be provided on demand for operations planning. Information should be flexible in content so that operations planners may request what most suits the situation.

**5.9. Pre-Deployment Planning/ Concept Briefings.** The WF will provide pre-deployment weather briefings when requested for deploying units. The content of the briefing will vary depending on the customer's requirements. For example, an aviation unit will receive weather impacts at the deployed location on their flying mission in addition to the standard surface

weather information usually presented to ground units. A ground based unit, like the security forces, will receive a briefing on surface temperatures, wind speed, potential for blowing sand and dust, and precipitation.

**5.10. Flight Information Publication Weather Updates.** The WF is responsible for ensuring all weather information in the FLIP is accurate.

5.10.1. All weather related updates will be requested through the Airfield Management FLIP Manager, 305 OSS/OSA. The FLIP Manager will process the information to AFFSA/OL-D. Updates will fall in one of three categories: revisions, changes, or corrections.

5.10.2. Items reviewed include contact numbers for the WF and operational weather squadron, WF hours of operation, PMSV frequency/availability, and the approach minimums for McGuire Field with situational awareness of Lakehurst.

**5.11. Other Services.** The WF provides other services upon request and within manning or expertise constraints. Requesting agencies should provide adequate notification and should not normally expect immediate delivery of service. On-going flight operations, weather conditions, and service demands determine the response time to non-routine requests for service.

Chapter 6

SPACE WEATHER SUPPORT AND SERVICES

**6.1. General.** Many of our weapons and communications systems use satellites and radio waves High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), and Satellite Communications (SATCOM)), that can be rendered useless by electro-magnetic radiation from the sun. This chapter contains some brief information regarding space weather limitations, alerts and warnings, and products available to WF personnel.

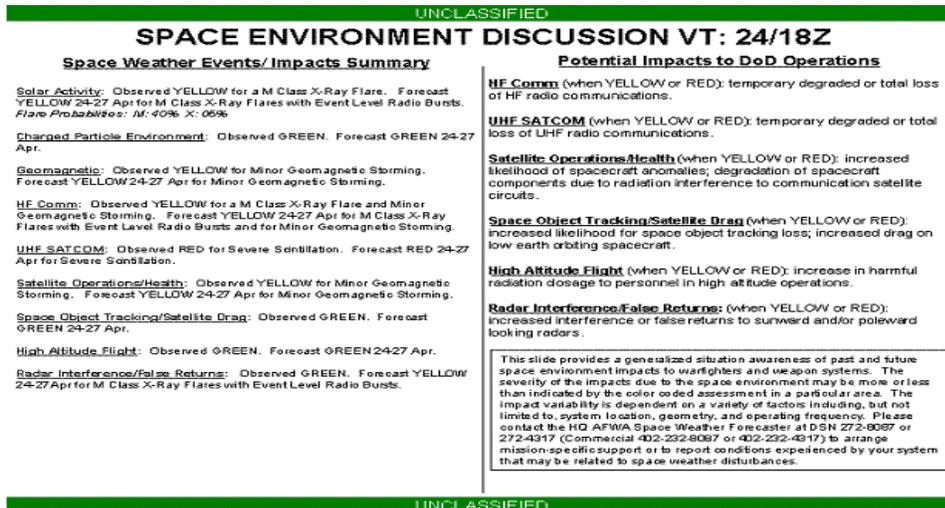
**6.2. Limitations.** The WF relies on strategic center forecasts to predict space weather. No indigenous capability exists. Like terrestrial weather, there are numerous factors that influence space weather. One of the biggest limitations we have in identifying and forecasting space weather is a lack of sensors. Additionally, given the speed of solar wind and light, our ability to provide lead-times for significant space events is extremely limited.

**6.3. Space Weather Alerts and Warnings.** JB-MDL’s missions have a wide variety of parameters that could possibly be affected by various space weather conditions (HF and UHF communication, radar, GPS Comm, etc).

6.3.1. Broad coverage CONUS-based space weather products (graphics) are available at <https://weather.afwa.af.mil/jaawin/space/spacePages.jsp?region=CONUS>. These alerts/warnings will be provided to aircrew and staff when deemed appropriate (during flight briefings, etc). Most space weather products from the strategic center are “now-casts” and/or very short-term forecasts (6-hour periods), so the duty forecaster will stay abreast of any changes to possible space impacts to operations. Space Weather analysis, alerts, forecasts and warnings are listed in **Attachment 6**.

6.3.2. Bulletins are available at JAAWIN: <https://weather.afwa.af.mil/jaawin/space/main.jsp>. A sample of the daily discussion is provided in **Figure 6.1**. The WF will utilize these products to determine possible impacts to JB-MDL operations.

Figure 6.1. Sample Space Environment Discussion.



**6.4. Products.** Numerous space weather products are available from JAAWIN (see links above). Most Space Weather products from the strategic center are “now-casts” and/or very short-term forecasts (6-hour periods), so the duty forecaster will check for updated products whenever preparing and updating a Flight MEF. For more information concerning these products please contact Air Force Weather Agency Space Weather Operations Center or the WF.

## Chapter 7

### SPECIAL MISSION REQUIREMENTS

**7.1. General.** This chapter contains all of the specific local requirements submitted by various organizations throughout JB-MDL, and verified by the WF leadership. The requirements will be reviewed annually by the requesting unit and updated as required. If the MEF, a watch, warning, or an advisory does not cover a specific local weather requirement, extra effort will be made (time permitting) to contact the individual unit to advise of the condition. In turn, the unit is responsible for contacting the WF should their requirements change.

**7.2. JB-MDL/305 AMW/514 AMW CC.**

7.2.1. WF will provide weather briefings at scheduled Senior Staff meetings upon request.

7.2.2. The WF will also respond to any recall as required by the 305 AMW Commander.

**7.3. 87 ABW/PA.** WF provides tours of the base weather station for community groups and others when coordinated by Public Affairs.

**7.4. Joint Base McGuire-Dix-Lakehurst Command Post:**

7.4.1. WF provides Joint Environmental Toolkit (JET) access and training to Command Post personnel to have instant access to weather watches, warnings, and advisories.

7.4.2. WF provides notification of all weather watches, warnings, and advisories via JET Integrated Weather Warning Capability (IWWC) or telephone.

7.4.3. WF notifies Command Post when the alternate operating location is activated and deactivated.

**7.5. 305 OSS/OSA:** WF provides notification of all weather watches, warnings, and advisories via IWWC or telephone.

**7.6. 305 AMW/SE.** WF will provide all weather information pertaining to aircraft mishap or aircraft damage.

**7.7. 87 CS:** WF will provide feedback and operator updates on systems maintained by the communications squadron.

**7.8. 87 CONS.** WF will provide climatological data upon request.

**7.9. 87 CES.** WF will provide climatological data and specialized support for projects on JB-MDL upon request.

7.9.1. 87 CES/Readiness Flight. WF will provide chemical downwind messages and/or effective downwind messages upon request.

7.9.2. 87 CES/Fire Protection Flight. WF will provide chemical downwind messages upon request.

7.9.3. 87 CES, all units. WF will provide required weather data to CE upon request.

**7.10. 87 Security Forces.** WF will provide equivalent wind chill advisories as specified in this document.

**7.11. All flying units (305 AMW, 514 AMW, 108 WG, and Army/Navy/Marines).** WF will provide services as outlined throughout this publication.

**7.12. 305 MXG:**

7.12.1. WF will ensure all pertinent watches, warnings and advisories are issued as required.

7.12.2. WF will coordinate annually to verify criteria and lead times are valid.

7.12.3. WF will provide current wind and temperature data as requested.

**7.13. Special requests.** With sufficient advance notice (at least 1 working day), WF will provide any special operational, climatological, or flight safety briefing.

## Chapter 8

### RESOURCE PROTECTION SERVICES

**8.1. General.** This chapter contains details on weather watches, warnings, and advisories. Resource protection is accomplished through a joint effort between the 15 OWS and the WF. The 15 OWS is responsible for issuing all forecasted products including weather watches and warnings. The WF acts as the “eyes forward” for the 15 OWS, and is responsible for issuing all observed warnings and advisories. However, the WF can issue any forecasted warning if there is an immediate threat to life and/or property. In these cases, the WF will back brief the 15 OWS when time permits and will also be responsible for dissemination to local supported agencies. Conversely, the WF will act as the alternate dissemination/notification source for the OWS. The goal is to provide the best possible resource protection to the joint base.

8.1.1. Watch, Warning and Advisory Support to McGuire Field/Ft. Dix. The 15 OWS will provide watch, warning, and advisory support to McGuire/Dix to include all ranges (up to 5.3NM). This deviates from the AFMAN 15-129 standard area of no larger than 5 nautical miles, due to local requirements.

**8.2. Training.** The WF will:

8.2.1. Conduct and document periodic severe weather refresher training for assigned weather personnel. This training will leverage products organized by the 15 OWS and should target upcoming seasonal forecast and observation techniques, potential threats, and appropriate response procedures.

8.2.2. Assist the installation commander in thoroughly educating base agencies on the purpose, applicability, and operating procedures of the weather watch and warning system.

**8.3. Terms.**

8.3.1. Severe Thunderstorm. Storms producing tornados, funnel clouds, wind of 50KT or greater and/ or hail of 3/4” in diameter or larger.

**8.4. Weather Watches.** A weather watch is a special notice sent to customers indicating that conditions are favorable for the development of a particular type of weather phenomena (e.g. tornadoes, hail, etc.). Watches are issued for a 5.3 nm radius of the center-point of the McGuire Field runway complex. **Table 8.1.** contains all of the weather watches and desired lead-times for McGuire/Dix complex.

**Table 8.1. Watch Criteria.**

<b>Criteria</b>	<b>Desired Lead-Time (DLT)</b>	<b>SWAP</b>
Tornado	As potential warrants	Y
Hail > 1/2"	As potential warrants	Y
Winds >= 50 knots	As potential warrants	Y
Lightning within 5 NM	30 minutes	N
Freezing Precipitation (Any Intensity)	As potential warrants	Y
Heavy Rainfall (> 2" accumulation in 12 hours)	As potential warrants	N
Heavy Snow (> 4" accumulation in 12 hours)	As potential warrants	Y
Moderate Snowfall (> 1/2" but < 4" in 12 hours)	As potential warrants	Y
Blizzard	As potential warrants	Y
<b>NOTE 1:</b> DLTs > or < standard lead-times are based on mission requirements specified in the unit's weather support document.		
<b>NOTE 2:</b> Weather watches will not be issued if they have the same lead time as weather warnings.		
<b>NOTE 3:</b> Blizzard criteria includes duration > 3 hours, sustained winds/gusts > 30 knots, considerable falling and/or blowing snow, with prevailing visibility frequently < 1/4 statute mile/0400 meters (all criteria must be met).		
<b>NOTE 4:</b> Normally there are two standard hail watches, one for 1/2 inch and the other for 3/4 inch. Locally they have been combined into one watch for hail 1/2 inch or greater. Standard watch for snowfall is normally issued for greater than 2 inches accumulation in 12-hrs. Locally there are no watches for sandstorms, as this phenomenon doesn't occur locally.		
<b>NOTE 5:</b> SWAP personnel response time will be determined as potential warrants		

**8.5. Weather Warnings.** Weather warnings are special notices sent out to customers alerting them that a predefined weather event, which will pose a threat to life or property, is expected to occur. Warnings are issued for a 5.3 NM radius of the center-point of the McGuire Field runway complex. Severe thunderstorms producing tornados, 50kt winds, or large hail will be verified if the event occurred within 10 NM of the base. Forecasted warnings, with their desired lead-times, are contained in **Table 8.2.**

**Table 8.2. Warning Criteria.**

Criteria	AMC Standard Lead-Time	KWRI DLT	SWAP
Tornado*	30 min	10 min	Y
Hail > 1/2"	60 min	120 min	Y
Winds >= 50 knots	60 min	120 min	Y
Surface Winds > 35 but < 50 knots*	60 min	60 min	N
Freezing Precipitation (Any Intensity)*	60 min	60 min	Y
Heavy Rainfall (> 2" accumulation in 12 hours)*	60 min	120 min	N
Moderate Snowfall(> 1/2" but < 4" accumulation in 12 hours)	N/A	60 min	Y
Heavy Snow (> 4" accumulation in 12 hours)*	60 min	120 min	Y
Blizzard*	60 min	60 min	Y
Lightning within 5 NM	Observed	Observed	N
Lightning within 10 NM	Observed	Observed	N
Lightning within 25 NM	Observed	Observed	N
<b>NOTE 1:</b> DLTs > or < standard lead-times are based on KWRI requirements specified in the unit's weather support document.			
<b>NOTE 2:</b> Warnings/Watches for Sandstorms and Hail (> 3/4") are not required per KWRI requirements.			
<b>NOTE 3:</b> Blizzard criteria includes duration > 3 hours, sustained winds/gusts > 30 knots, considerable falling and/or blowing snow, with prevailing visibility frequently < 1/4 statute mile/0400 meters (all criteria must be met).			
<b>NOTE 4:</b> * Denotes change from standard weather warning criteria listed in AMCI 15-101. Deviations are based on locally coordinated requirements. Normally there are two standard hail warnings, one for 1/2 inch and the other for 3/4 inch. Locally they have been combined into one warning for hail 1/2 inch or greater. Standard warning for snowfall is normally issued for greater than 2 inches accumulation in 12-hrs. Locally there are no warnings for sandstorms, as this phenomenon doesn't occur locally.			

**8.6. Observed Weather Warnings (IAW AFOSH Standards 91-66, *General Industrial Operations* and 91-100, *Aircraft Flight Line – Ground Operations and Activities*).** Lightning warnings are only type of observed warning issued for McGuire/Ft Dix. They extend 5.3 nm in all directions from the airfield. Lightning warnings are not issued until lightning is observed, either visually or via local lightning detection and web based systems.

8.6.1. The lightning warning will remain valid until lightning has not occurred in the area for at least 15 minutes. For safety reasons, a lightning warning that is in effect will not be cancelled if a thunderstorm is still present within 5nm, as determined by the duty forecaster, even if lightning is not present.

8.6.2. The WF will provide timely notification using the JET notification process to all supported units upon issuance and expiration of a lightning warning.

**8.7. Weather Advisories.** A weather advisory is a special notice sent to customers alerting them that a predefined weather phenomenon, which may impact operations, is occurring or forecast to occur on McGuire Field. Weather advisories can be found in [Table 8.3](#)

**Table 8.3. Weather Advisory Criteria.**

Criteria	Desired Lead-Time	SWAP
Frost	No later than 18Z on the previous day	N
Surface Winds > 25 but < 35 knots	60 min	N
Cross Winds > 10 but < 20 knots	Observed/Interim with 06/24 closed	N
Cross Winds > 20 knots	Observed	N
Low Level Wind Shear	Observed	N
Equivalent Wind Chill Temperature < -20°F	Observed	N

**8.8. Weather Support to Lakehurst.** Forecast Watches and warnings are required to support Lakehurst on a routine basis. All Watches and warnings will be issued for an area no larger than a 5 NM radius unless otherwise documented. The 15 OWS issues all Watches and warnings for Lakehurst Maxfield as defined in [Tables 8.4](#) and [8.5](#)

8.8.1. Lakehurst Maxfield Weather Watches.

**Table 8.4. Lakehurst Weather Watch Criteria.**

Criteria	Desired Lead-Time
Tornado	As potential warrants
Hail $\geq \frac{3}{4}$ "	As potential warrants
Winds $\geq 50$ Kt	As potential warrants
Freezing Precipitation (Any Intensity)	As potential warrants
Heavy Snow ( $\geq 2$ " accumulation in 12 hours)	As potential warrants
Blizzard	As potential warrants
Hail $\geq \frac{1}{2}$ " but $< \frac{3}{4}$ "	As potential warrants
Heavy Rain ( $\geq 2$ " in 12 hours)	As potential warrants
Winds $\geq 35$ Kt but $< 50$ Kt	As potential warrants
Lightning within 5 NM	30 min

## 8.8.2. Lakehurst Maxfield Weather Warnings.

**Table 8.5. Lakehurst Weather Warning Criteria.**

Criteria	Desired Lead-Time
Tornado	30 minutes
Hail $\geq \frac{3}{4}$ inch in diameter	60 minutes*
Hail $\geq \frac{1}{2}$ " but $< \frac{3}{4}$ "	60 minutes*
Winds $\geq 50$ Kt	60 minutes*
Winds $\geq 35$ Kt but $< 50$ Kt	60 minutes*
Freezing Precipitation	60 minutes*
Heavy Rain ( $\geq 2$ " accumulation in 12 hours)	60 minutes*
Heavy Snow ( $\geq 2$ " accumulation in 12 hours)	60 minutes*
Blizzard	60 minutes*
Observed Lightning within 5 NM	Observed

**8.9. Weather Alert Processing.** Watches, warnings, and advisories will be uniquely numbered. Lightning warnings will always be issued alone and will not be included as part of another warning. All other criteria valid at the same time will be contained within one warning or advisory as applicable.

8.9.1. Upgrades/Downgrades. Advisories and warnings will be upgraded (i.e. winds increase from 25 knots to 50 knots) or downgraded as required. Upgrades should meet the desired lead-times specified above.

8.9.1.1. Only one forecasted warning may be in effect at one time with the exception of lightning warnings as it will always be a stand-alone warning.

8.9.1.2. If a warning is issued for one criterion, and it becomes necessary to warn for another criterion, a new warning, with a new number, will be issued immediately to include all criteria expected. A separate valid time may be specified for each criterion, if necessary.

8.9.1.3. Downgrades will follow the same rules outlined above with the exception of desired lead times do not apply.

8.9.2. Amendments. Amendments to weather warnings and watches will only be issued to change the valid time and will be issued before the original watch or warning expires. New warnings and watches will be issued for any change in weather criteria.

8.9.3. Cancellation. Warnings and watches may be canceled when the weather phenomena are no longer occurring or expected to occur. However, if not canceled, they will expire at the end of the valid period as specified for each criterion. Observed warnings and advisories will be canceled when the criteria are no longer occurring.

8.9.4. Dissemination. The 15 OWS and/or the WF will disseminate forecast watches, warnings, and advisories through the JET system or by phone, when necessary, to the JB MDL CP and Airfield Management. Weather alerts such as warnings, watches, and advisories will be further disseminated by these agencies as directed by locally established guidance and checklists.

**8.10. Severe Weather Action Procedures (SWAP).** The SWAP is in place to ensure sufficient personnel are available during potential/actual severe weather events or during meteorological and/or operational events critical to mission success. Criteria for SWAP are outlined in **Tables 8.1., 8.2., and 8.3** It is imperative that timely and accurate weather watches, warnings, and advisories are disseminated to all JB-MDL agencies to mitigate risk to personnel and resources. These procedures document a two-tier system with the WF and the 15 OWS sharing responsibilities for SWAP and resource protection.

8.10.1. WF Responsibilities. Will perform the WF SWAP responsibilities as defined in AFMAN 15-129, AFI 10-229, AFMAN 10-206, 15 OWS MOA/Data Sheets, and this publication. More specifically, the WF will accomplish the following procedures:

8.10.1.1. Notification. The duty forecaster will notify the Severe Weather Action Team (SWAT) standby member(s) according to the following guidance:

8.10.1.1.1. During normal staff duty hours (0730 to 1630 local, Monday through Friday, except federal holidays/authorized down days) the duty forecaster will implement SWAP by notifying the WF Chief and/or NCOIC whenever one or more SWAP conditions outline above and amplified in **Table 8.6** below is forecasted.

**Table 8.6. Condition Requiring SWAP Notification/Activation.**

<b>Condition:</b>
Severe thunderstorms expected within four hours (Tornados, Hail $\geq$ 1/2", and Winds $\geq$ 50kts)
OWS issues a severe weather watch for McGuire Field
Storm Prediction Center (SPC) issues a severe weather watch for Burlington County
National Weather Service (NWS) issues a severe weather warning for Burlington County
Notification of CAT activation
Any indication of Winter storm (freezing precipitation, moderate-heavy snow accumulation, (blizzard)
When any adverse condition is expected to severely degrade operations

8.10.1.1.2. Standby/Recall Procedures. After duty hours or whenever the WF Chief and/or NCOIC are not present in the weather station, the duty forecaster will implement SWAP by notifying the WF Chief and/or NCOIC by phone whenever one or more SWAP conditions are met to determine if the SWAT needs to be activated.

8.10.1.1.3. WF leadership may place additional flight members into standby and subject to recall depending on the situation. This can occur independently of other directed or non-directed personnel posturing within the wing. WF leadership should ensure that any active unit recall roster reflects accurate contact information for all personnel at all times.

8.10.1.1.4. Once activated, WF leadership determines who, when, where, and how an SWAT will deal with a given situation. Regardless of the approach chosen, WF leadership will stand ready to accomplish staff services if called upon. The SWAT will remain activated until released or the situation no longer warrants SWAT activities.

8.10.1.1.5. Provide updates to the Crisis Action Team (CAT) as directed or needed given the situation.

8.10.1.1.6. Provide forecasts for Wing/CCs or CAT Director to use when considering an "All Clear" once the weather threat has passed.

8.10.1.2. Activation. The duty forecaster will discuss the meteorological situation, manning requirements, and the recall of additional personnel (or place on standby) with the SWAT member.

8.10.1.2.1. Given the manning construct within the WF, there is only one person available for recall, usually the WF Chief or NCOIC. If deemed necessary the SWAT member will report to the weather station as soon as possible after notification by the duty forecaster.

8.10.1.2.2. Once the SWAT member has arrived they will assist in evaluating the situation, determine the need/availability to recall additional personnel, and execute the SWAT member/team chief duties/responsibilities IAW local procedures until the weather event is over.

8.10.1.3. Severe Weather Damage Reporting/OPREP. The WF will coordinate with the JB MDL CP for weather related OPREP-3s and provide the CP any pertinent weather information. The CP will provide, upon request, the WF with a copy of any weather related OPREPs. The WF will inform the 15 OWS and higher headquarters of damage reports and OPREP-3s as soon as possible for their review on SIPRNET SkiWeb at <https://skiweb.stratcom.smil.mil/ski-web/>.

8.10.1.3.1. OPREP-3/Severe Weather Reporting Procedures. Following an event in which one of the following severe elements occurred (wind  $\geq$  50 knots, hail  $\geq$  ½ inch, tornados, lightning strikes, floods, snow storms, and earthquakes) and damage was reported, provide information detailed in **Attachment 2** to the JB MDL CP.

8.10.1.3.2. Provide the JB MDL Command Post with the following information required for inclusion in any OPREP-3s produced:

8.10.1.3.2.1. Actual severe weather experienced.

8.10.1.3.2.2. Terminal Aerodrome Forecast (TAF) valid at the time of occurrence.

8.10.1.3.2.3. Any watches, warnings and/or advisories issued to include actual and desired lead-time.

8.10.1.3.2.4. Operational status of meteorological equipment.

8.10.1.3.3. Notify 15 OWS and AMC/A3W of the OPREP-3s and information submitted for inclusion.

8.10.1.3.4. Request 15 OWS to provide required information, if needed, by performing a weather data save.

8.10.1.3.5. WF will provide the 15 OWS severe weather reports not normally available through standard observations. Reports will be passed immediately after fulfilling any local distribution requirement. If this is not possible, WF will pass the reports as soon as possible so the 15 OWS can use the reports during post-analysis and verification.

8.10.2. 15 OWS Responsibilities. 15 OWS will perform the OWS SWAP responsibilities as defined in 15 OWS CONUS Operations Standing Operating Procedure, Severe Weather Action Procedures. 15 OWS will accomplish the following procedures when severe weather is determined likely:

8.10.2.1. Activate the Severe Weather Action Team (SWAT) to include: Floor Manager (FM), OPUP Operator, and other required individuals when required.

8.10.2.2. Unless otherwise stated, have the WF SWAT recalled not later than 4 hours before the expected occurrence of severe weather. Be prepared to conduct a Meteorological Conference (METCON) with the WF SWAT members when they arrive at their base weather station.

8.10.2.3. Intensify METWATCH.

8.10.2.4. Review watch/warning criteria for JB-MDL and issue products as required.

8.10.2.5. If the OWS is acting as the WF, they will provide data to the JB MDL Command Post for OPREP reporting purposes. The 15 OWS SWAT leader will perform a “data save” and will disseminate (or direct someone to disseminate) the following information per AFMAN 10-206, **when requested**:

8.10.2.5.1. Actual severe weather conditions experienced.

8.10.2.5.2. Forecast valid at the time the conditions occurred to include any watches or warnings issued.

8.10.2.5.3. The operational status of meteorological equipment (e.g., radar, wind sensors, etc.) at the time of the event.

8.10.2.5.4. Copy of applicable watches and/or warnings valid at time of occurrence.

8.10.2.5.5. Reports received highlighting severe weather occurrence within 20nm of McGuire Field.

### **8.11. Hurricane/Tropical Cyclone Support.**

8.11.1. The WF receives the National Hurricane Center (NHC) tropical cyclone forecasts. These forecasts are issued as military and public advisories, and include information describing the initial and forecast locations, movement, intensity, and horizontal dimensions of significant winds. Forecasts, which could change Hurricane Conditions, will be relayed to Command Post and/or the Crisis Action Team.

8.11.1.1. The WF cannot deviate from the official NHC forecast position, track, movement, maximum wind speed, or intensity. However, the WF can provide tailored weather forecasts for McGuire Field based on the NHC forecast.

8.11.1.2. The WF will ensure that leadership understands that the 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. This notification will include the forecast error probability statements included in the discussion bulletins or on the forecast products.

8.11.1.3. The tailored forecasts for McGuire Field will be collaborated with the 15 OWS in the form of a Tropical Cyclone Threat Assessment Product that is posted to the 15 OWS webpage when a tropical system poses a threat to the 15 OWS AOR.

8.11.1.4. The WF will inform Wing leadership when the following conditions exist listed in paragraph 8.11.2 as well as any updates to tropical cyclone forecasts.

8.11.2. Summary of Hurricane Conditions (HURCON):

8.11.2.1. HURCON IV: 50 knot winds, including gusts, are forecast within 72 hours.

8.11.2.2. HURCON III: 50 knot winds, including gusts, are forecast within 48 hours.

8.11.2.3. HURCON II: 50 knot winds, including gusts, are forecast within 24 hours.

8.11.2.4. HURCON I: 50 knot winds, including gusts, are forecast within 12 hours.

8.11.3. The Saffir-Simpson Scale is a 1 to 5 rating (increasing) of storm intensity and the potential for damage.

8.11.3.1. Category One Hurricane – Sustained wind 64-82 KT (74-95 MPH). No damage to building structures. Some damage to poorly constructed shelters, unanchored buildings/objects, trees, and shrubs.

8.11.3.2. Category Two Hurricane – Sustained wind 83-95 KT (96-110 MPH). Some roof, door, and window damage. Considerable damage to unanchored buildings/objects. Considerable damage to trees and shrubs. Small trees blown down.

8.11.3.3. Category Three Hurricane – Sustained wind 96-113 KT (111-130 MPH). Some structural damage to smaller buildings. Unanchored buildings/objects destroyed. Foliage blown off trees and shrubs. Larger trees down.

8.11.3.4. Category Four Hurricane – Sustained wind 114-135KT (131-155 MPH). Structural damage and roof failure. Extensive damage to doors and windows. Extensive tree and shrub damage.

8.11.3.5. Category Five Hurricane – Sustained wind greater than 135KT (155 MPH). Widespread destruction.

**8.12. Chemical Downwind Messages (CDM)/Effective Downwind Messages (EDM).** The WF is the primary unit for providing CDM/EDM support.

8.12.1. Pre-calculated CDM bulletins for JB-MDL are available at anytime on the 15 OWS Web-site at:  
[https://ows.scott.af.mil/tailored\\_met/index.cfm?fuseaction=cdm&icao=KWRI&b\\_icao=KWRI&unit\\_id=8&BW=H&UF=M&AOR=1&sc=172102](https://ows.scott.af.mil/tailored_met/index.cfm?fuseaction=cdm&icao=KWRI&b_icao=KWRI&unit_id=8&BW=H&UF=M&AOR=1&sc=172102)

8.12.1.1. The CDM message from either source (WF or Web site) can be used to aide determination for the spread of chemical and/or biological agents.

8.12.2. The EDM bulletin is produced twice a day by AFWA using 00Z and 12Z weather databases and is available at anytime on the 15 OWS Website at:

8.12.2.1. Low Yield:  
[https://ows.scott.af.mil/tailored\\_met/index.cfm?fuseaction=amis\\_bulletin&prod=FUUS3000KGWC](https://ows.scott.af.mil/tailored_met/index.cfm?fuseaction=amis_bulletin&prod=FUUS3000KGWC)

8.12.2.2. High Yield:  
[https://ows.scott.af.mil/tailored\\_met/index.cfm?fuseaction=amis\\_bulletin&prod=FUUS3100KGWC](https://ows.scott.af.mil/tailored_met/index.cfm?fuseaction=amis_bulletin&prod=FUUS3100KGWC)

8.12.3. Toxic Corridor Support. Per AFI 10-2501, the WF is responsible for providing only meteorological data towards the calculation of Toxic Corridor products. The OWS may also supplement the WF with this weather data-only support, if required.

8.12.3.1. The fire department and readiness flight has the primary responsibility for producing the Toxic Corridor.

## Chapter 9

### WEATHER INFORMATION DISSEMINATION

**9.1. General.** Forecasts, observations, and weather alerts (warnings, watches, and advisories) are useful only if the customers have access to them. Timely and efficient dissemination of weather information is crucial to the success of the wing mission and resource protection. Most organizations will receive this information via our primary dissemination system. Some organizations will receive courtesy calls, however, AFIs 15-129 & 10-229 restrict the WF from directly notifying (via telephone) more than three organizations in order to focus on incoming weather phenomena. This chapter describes the weather dissemination systems, dissemination procedures, and back-up systems and procedures.

#### **9.2. Dissemination Systems and Back-ups.**

9.2.1. Joint Environmental Toolkit (JET). Currently the WF uses JET as its primary method of disseminating warnings, watches, and advisories. The JET system consists of a JET server that is accessible via the base LAN IP address. Primary access and dissemination runs through the CP and Airfield Management who will then notify the agencies as directed by locally established guidance and checklist. Agencies without JET should receive critical weather information through their unit's own dissemination system (e.g. Pyramid Alert Recall, Unit Control Center, etc). The WF will follow locally documented backup dissemination procedures in the event that JET server is inoperative.

9.2.2. Local Area Network (LAN). The LAN is the primary method used for disseminating web-based MEFs. Additionally, it is used as the backup system for disseminating (longline only) and receiving all weather information. In the event of a LAN outage, web-based MEFs will be faxed to requestors or may be verbally updated.

9.2.3. Hotlines. Hotlines have been installed between WF and other agencies for the sole purpose of rapidly exchanging weather data. Normal phone lines will be used in the event of a hotline outage. Hotlines are installed between the WF and the following agencies:

9.2.3.1. JB MDL Command Post.

9.2.3.2. Airfield Management.

9.2.3.3. Secondary CRASH Net

9.2.4. Climatic Data Requests. Upon request from an authorized agency (as deemed appropriate by flight leadership and 87 ABW/PA), provide climatology data for McGuire Field and other locations. Requests may be made by phone, e-mail, letter, or in person.

#### **9.3. Dissemination and Backup Procedures.**

9.3.1. Weather Watches, Warnings, and Advisories. Weather watches, warnings, and advisories will be disseminated via the JET (phone, email, and/or fax) to the JB MDL CP and Airfield Management where it will be disseminated. Confirmation of contact can be ascertained by the system and are monitored by the 15 OWS. If the JET server is out of service, the WF or 15 OWS will call CP and Airfield Management to pass information.

9.3.2. The WF will provide ATC personnel ahead of all other locally identified agencies with a the observation if the FMQ-19 automated sensor is inoperable. ATC personnel can also call the automated observing system at 754-1402 in LAN capabilities prevent viewing of observations.

**9.4. Tornado Warnings.** The JB MDL CP has the primary responsibility for sounding the base siren in the event of a tornado warning issuance.

## Chapter 10

### WEATHER EQUIPMENT

**10.1. General.** This chapter provides a brief description of the meteorological and communications equipment used by the WF. Additionally, it provides information on backup systems, maintenance, and restoring priorities.

**10.2. Meteorological Equipment.** The official weather observation at McGuire Field is taken by an FMQ-19 automated observing system, **Attachment 8**, and augmented by a certified 305 OSS weather observers who ensures the accuracy of the observations during system outages, failures, or extreme weather conditions outside the ability of the equipment to report. The WF uses the FMQ-19, Automated Observing System, as the primary system to determine the current state of the atmosphere. This critical system is used continuously to provide customers the most timely, accurate and relevant weather intelligence possible. The following is a list of the meteorological sensors used by the WF:

10.2.1. FMQ-19. The following is a breakdown of the sensors on the FMQ-19:

10.2.1.1. FMQ-19 - Visibility Sensor. McGuire's runways are equipped with visibility instruments that determine a prevailing visibility in statute miles for the airfield and Runway Visual Range (RVR) value in hundreds of feet at the touchdown, center-line, and rollout points of runway 24/06 as well as the touchdown and rollout ends of runway 18/36. Readings are available once each minute. A ten-minute average value is used for each METAR or SPECI report. The backup for visibility is a set of predetermined distance markers that can be visibly spotted from the ROS.

**NOTE:** There is no backup for RVR. Technicians encode RVRNO on surface weather observations to indicate when the transmissometers are not operating.

10.2.1.2. FMQ-19, Temperature and Dew-point Sensor. The operating range for this system is -40°C to +60°C (-40°F to +140°F); 0 to 100% relative humidity. Temperature and dew point readings are available every minute. In actuality, dew point is not sensed. The system uses relative humidity to compute a dew point. The backup for this sensor is an AF approved hand-held digital thermometer.

10.2.1.3. FMQ-19, Wind Monitor. Anemometers with a survivable range up to 220mph are located on 10M poles at the touchdown and rollout ends of each runway. A two-minute average wind direction and wind speed value are calculated every 5 seconds to indicate the mean wind character. Backup for this instrument is an AF approved hand-held anemometer.

**NOTE:** Whenever the handheld anemometer is used, wind readings will be reported as estimated.

10.2.1.4. FMQ-19, Laser Beam Ceilometer (LBC). Sensor readings are processed into a single estimate of cloud height and amount. Samples are taken every 30 seconds. Each minute the readings over the last 30 minutes get tabulated. The greatest weight is placed on those readings taken in the last 30 minutes. The LBC then produces readouts for cloud base height and the amount of sky cover for up to three detected layers. The operating range is up to 25,000 feet. This sensor produces different results for sky cover

than a human observer. The ceilometer time-averages clouds overhead the sensor. The human observer can assess from horizon to horizon at one viewing. Thin cloud layers may fail to return the laser beam and not be detected. The backup for the LBC is a hand-held laser range finder (LRF). Weather technicians should coordinate with McGuire ATC agencies prior each operation of this device.

10.2.1.5. FMQ-19, Precipitation Sensor. The precipitation sensor can detect and report liquid, freezing, and frozen precipitation. The sensor melts any freezing or frozen precipitation to determine the actual accumulation of water. To ensure accurate measurements of freezing or frozen events, weather technicians must request that system maintainers remove the protective screen over the collector cup prior to event start. The backup for this sensor is the Rain Gauge located near Bldg. 1730 and 1608.

10.2.1.6. FMQ-19, Pressure Sensor. The pressure sensor measures and records atmospheric pressure and pressure change tendency. Results are given for altimeter setting, pressure altitude, and sea level pressure. Backup for this instrument is an AF approved hand-held barometer.

**NOTE:** Whenever the handheld barometer is used, pressure readings are reported as estimated.

10.2.1.7. FMQ-19, Lightning Detection System (LDS). The LDS detects and differentiates between cloud-to-cloud and cloud-to-ground lightning out to a range of 30NM. Strikes are displayed over a horizon circle and color coded to represent age of the strike out to 30 minutes. The backup to this system is Web-based lightning detection produced by AFWA. While using this backup, only cloud-to-ground strikes may be detected.

10.2.2. Weather Surveillance Radar, 1988 Doppler (WSR-88D). The National network of WSR-88D's, also known as NEXRAD, is operated under a tri-agency agreement between the Departments of Commerce, Defense and Transportation. The local WSR-88D acquisition unit (antenna) is located 8 miles southeast of McGuire proper on Ft Dix. Data from the network of WSR-88D's can be manipulated and displayed within building 1730 on a dedicated user processor or from any location using the Web. Manipulation of information via the Web is limited. Additionally, all radars suffer from a "cone of silence" near the antenna. Within this zone, the mechanical working of the antenna does not allow for full coverage which results in an inability to detect targets.

10.2.3. Sonic Detection and Ranging (SODAR). The SODAR is located near building 1608 on the airfield complex. This device provides a vertical reading of winds over the airfield in 50M increments up to a height of 500M. WF personnel can use the SODAR display whenever low level wind shear is occurring or expected to occur. At times, ambient airfield noise or very strong wind noise will degrade SODAR's vertical range.

**10.3. Communications Equipment.** Just as vital as meteorological equipment, communications equipment allows the WF to get the right information to the right customer. The following systems are the backbone of the WF communications network.

10.3.1. JET. As discussed in **Chapter 9**, this is our primary system for disseminating warnings, watches, and advisories. Telephones are used as a backup for key agencies.

10.3.2. PMSV Radio. The Pilot-To-Metro-Service Radio (239.8 MHz) allows the WF to communicate with aircrews, both on the ground and flying. If the PMSV is out of service aircrews can contact the 15 OWS via phone patch (where possible), the WF via phone patch, and/or the following locations:

10.3.3. Phones/Hotlines. Phones and hotlines primarily serve as backup system as well as for passing along critical, time-sensitive information rapidly.

10.3.4. LAN. The WF relies heavily on the local area network to improve the timeliness and accuracy of weather intelligence to our customers. Much information can be obtained through other methods (e.g. satellite imagery, lightning data, etc.) but is far less efficient.

**10.4. Maintenance.** All equipment requires some sort of maintenance. **Table 10.1** outlines organizations that provide preventive maintenance/repair of weather and communications equipment:

**Table 10.1. Communication Equipment Contacts.**

Organization	Equipment
87 CS/SCOA (METNAV 754-2666)	FMQ-19 (All Sensors)
RADAR Operation Center (ROC 800-643-3363)	OPUP
87 CS (Net Ops 754-9722) / AFWA (DSN 271-2586)	JET
87 CS (Radio Maintenance 754-2666)	PMSV
87 CS (Telephone Maintenance 754-2666)	Phones/Hotlines
87 CS (Help Desk 754-2666)	LAN/Internet Connectivity

**10.5. Restoring Priorities.** Priorities for restoring critical systems have been established in the event natural disasters, or any other anomaly, simultaneously impact systems base-wide. Significant indicates a situation where the equipment is completely inoperative while minimal means the equipment is in limited operation. The priorities for weather equipment are listed in **Table 10.2** below (priorities may be adjusted based on incoming weather).

**Table 10.2. Maintenance Priorities.**

SENSOR	ORGANIZATION	CONDITION
FMQ-19 OID	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Wind Sensors	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Visibility	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Lightning Detector	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Barometer	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Ceilometer	87 CS/SCOA	Out of Service (Priority 1)
FMQ-19 Aspirated Temp/Relative Humidity	87 CS/SCOA	Out of Service (Priority 1)

All other sensors (Present Wx, Freezing Rain. Precipitation Gauge)	87 CS/SCOA	Out of Service (Priority 2)
PMSV UHF Radio	87 CS/SCOA	Out of Service (Priority 1)
Joint Environmental Toolkit (JET)	87CS Net Ops/AFWA Help Desk	Out of Service (Priority 2)
OPUP Radar	Radar Operations Center	Out of Service (Priority 3)
LAN/Internet Connectivity	87 CS	Out of Service (Priority 2)
<b>Note:</b> Conditions are regardless of active runway or number of sensors.		
<b>Priority 1</b>	<b>Mission Essential</b>	Prevents mission critical capability
<b>Priority 2</b>	Adverse, No Work-Around	Adversely affects mission essential capability with no known work-around solution
<b>Priority 3</b>	Adverse, Work-Around	Adversely affects the accomplishment of an operational or mission essential capability, but a work around solution is known

**10.6. Building Power.** Bldg 1730 and the AOL bldg 1608 are equipped with back-up generators. The generator is expected to restore power instantaneously in the event commercial power is lost. CE performs quarterly tests to ensure the generator is working properly.

**10.7. Outages.** Notify ATC first then maintenance immediately should an outage occur. For outages of all primary fixed equipment (e.g. PMSV, etc.), a NOTAM (Notice To Airman) will be issued through airfield management for all outages expected to last greater than 2 hours.

## Chapter 11

### OWS/WF BACK-UP SUPPORT

**11.1. 15 OWS Outages.** The 15 OWS is heavily dependent upon communication and communication equipment; therefore, the 15 OWS is susceptible to a multitude of system outages that could cause a wide range of changes in mission capability. The 15 OWS has established back-up procedures that are flexible and designed to meet the requirements identified in AFMAN 15-129.

**11.2. Three-Tier Back-Up Support.** IAW AFMAN 15-129 the 15 OWS will back-up the following products and services in prioritized order: Tier 1. Wartime, Contingencies, Military Operations Other Than War and Force Protection; Tier 2. Peacetime and Exercise Operations; and Tier 3. Mission Planning, products and services.

11.2.1. Minimum Planned Actions for Each Tier (All Tiers 1-3). The 15 OWS will ensure contact with all WFs, primarily via telephone.

11.2.1.1. The 15 OWS will hand-off TAF, watch, warning, and advisory support and Flight Weather Briefing responsibilities (including transient crews at that location) to supported WFs.

11.2.1.2. The 15 OWS forecasters will maintain close coordination with WFs via telephone, when feasible and when weather information is available, to aid in TAF METWATCH, WW/WA and Flight Weather Briefing support.

11.2.2. Short-term/Long-term outages. For outages less than 72 hours, the WF and/or AFWA will temporarily assume the responsibility of NE CONUS support. For outages less than 72 hours, the 25 OWS and 26 OWS will temporarily assume the responsibility of NE CONUS Points locations. For outages greater than 72 hours, the 15 OWS will deploy personnel to a designated 1st Weather Group location to begin limited operations/support to include graphics products, Senior Duty Officer analyses/bulletins, DD Form 175-1, *Flight Weather Briefings* and assume NE CONUS Points locations support.

**11.3. Alternate Sources of Weather Information.** The 15 OWS has established a back up support agreement with all 1st Weather Group CONUS OWSs. Alternate 15 OWS websites, which contain a select package of key products: (<https://25ows.dm.af.mil/index.cfm?fuseaction=main&UID=&BW=H&UF=M&AOR=2&USEHF=1>). Additionally, supported units may access JAAWIN or the National Weather Service websites for weather products.

**11.4. Contact with WFs.** When the 15 OWS implements back-up procedures due to mission capability loss/degradation, it will contact each WFs primary 24-hour POC or alternate if necessary and provide a brief description of the problem(s) and impacts. The 15 OWS will also notify WFs when mission capability is restored.

**11.5. Outages at the WF.** When an outage in weather operations occurs, the WF will notify the 15 OWS. The WF will request backup support as needed to meet mission requirements.

11.5.1. Alternate Operating Location. The WF will notify the 15 OWS in case of evacuation/relocation to an AOL and again immediately upon arrival at the AOL. The WF

will also identify any changes to the watch, warning, and advisory dissemination procedures. The WF AOL is located in building 1608 on McGuire proper. The AOL phone number is DSN 650-0033/0034 and fax is DSN 650-1469.

11.5.2. Operational Impacts at AOL. Expect services to be somewhat degraded (weather products, pilot briefings, etc) due to remoteness of the AOL facilities and loss of dedicated radar data services. The WF will have access to JET and Local Area Network at the AOL, allowing the WF to issue any required watches, warnings, and advisories and also limited web-based access the local radar. In the interest of flight safety, the WF will not evacuate building 1730 for extended periods during exercises and simulations while flight operations are occurring.

## Chapter 12

### INTERAGENCY SUPPORT

**12.1. General.** The following base agencies provide services to/for the weather flight as necessary to meet mission requirements. Base operations plans outline specific responsibilities but some typical support requirements are outline below.

#### **12.2. 87 ABW/PA:**

12.2.1. Acts as a liaison office between the WF and all non-military agencies and/or individuals.

12.2.2. If a non-military agency requests weather data through PA, they can process and forward all valid requests for weather data (records, forecasts, climatology, etc.) to the WF.

12.2.3. They can also coordinate requests for weather station tours and off-base weather presentations for non-military activities with the WF.

#### **12.3. JB MDL CP:**

12.3.1. Ensures dissemination of weather watches, warnings, and advisories as outlined in [Chapter 9](#) and as directed in locally developed procedures/checklists.

12.3.2. Activates base peacetime emergency sirens for a tornado when a tornado **WARNING** is issued.

12.3.3. Immediately relays weather updated to airborne aircraft when received from the 15 OWS or the WF.

12.3.4. Utilizes the WF provided JET software to receive weather watches, warnings, and advisories 24 hours a day, 7 days a week.

12.3.5. Notifies the WF if JET becomes inoperative and request verbal notification of weather products until JET can be restored.

12.3.6. Notifies WF of any wing events or incidents that may require crisis action team activation.

12.3.7. Immediately notifies the WF of reported damage to government property resulting from weather phenomena for mandatory report generation IAW AFI 10-206. Weather will provide required information to assist in generating report.

#### **12.4. 305 OSS/OSA:**

12.4.1. Notifies the weather Flight Chief/NCOIC of all changes to published approach minimums at McGuire Field FLIP. The WF will provide amendments/updates to the FLIP and update all internal SOPs based upon changes in the FLIP.

12.4.2. Notifies WF personnel of in-flight, ground emergencies, or mishaps and termination via the secondary crash network.

12.4.3. Utilizes the WF provided JET system to receive weather watches, warnings, and advisories 24 hours per day, 7 days per week.

12.4.4. Ensures dissemination of weather watches, warnings, and advisories as outlined in **Chapter 9** and **Chapter 10** of this instruction.

12.4.5. Issues NOTAMs as required for equipment outages as requested by WF personnel.

12.4.6. Provides a daily radio check on the PMSV radio frequency 239.8MHz

12.4.7. Notifies the WF if the JET system is no longer reporting a valid observation.

12.4.8. ATC personnel will task certify to evaluate tower visibility through training provided by the WF for the Cooperative Weather Watch (CWW) function in order to enhance flight safety. Training procedures are maintained in local procedures as the WF office in bldg 1730.

12.4.8.1. The ATC tower will evaluate and report tower visibility to the WF whenever prevailing visibility is less than 4 statute miles (6000m) and different from surface prevailing visibility. This information is not included into the observation but is used to assist the observer determine prevailing visibility while in back-up mode of operations and to enhance general situational awareness.

12.4.8.2. If continuous RVR reporting is necessary due to airfield closer, the RVR system will require runway lights to be on in order to work properly.

12.4.9. ATC and Radar Approach Control (RAPCON) personnel will immediately relay PIREPs from aircraft to the weather flight when received from aircrews.

## **12.5. 305 AMW/SE:**

12.5.1. May request a WF briefer for seasonal weather briefings. 87 ABW/SE should give the WF two weeks advance notice when a briefer will be needed.

12.5.2. May request any and all weather information pertaining to an aircraft mishap or aircraft damage. Once requested, the weather flight chief /NCOIC will provide the information to 87 ABW/SE.

## **12.6. 87 CS:**

12.6.1. Provides, coordinates, or arranges for the installation, maintenance, and repair of all weather communication and meteorological sensing equipment, except for the communication and meteorological equipment that is maintained by contract (i.e., PMSV radio, JET server, etc).

12.6.2. Ensures that scheduled maintenance does not degrade the MISSIONWATCH performed by the WF during periods of inclement weather and notify the mission services forecaster prior to routine maintenance.

12.6.3. Maintains and updates all technical orders and advises operators of any significant changes, as received.

12.6.4. Utilizes the restoration priorities for weather communications and meteorological sensing equipment outlined in this document. **Note:** The weather shift supervisor, dependent on the weather conditions and mission requirements, may alter restoration priority.

12.6.5. Notifies the responsible service agents for outages.

12.6.6. Coordinates with off-base agencies to repair off-base lines.

12.6.7. Performs necessary follow-up actions as required until full service is restored.

12.6.8. Ensures weather data and telephone circuits are assigned repair priorities.

12.6.9. Ensures that established maintenance response times are met.

12.6.10. Ensures a 24-hour point of contact for reporting outages and assigning Job Control numbers is available.

12.6.11. Coordinates with WF forecaster prior to taking any equipment down for maintenance.

12.6.12. Provides copies of and updates to Technical Orders on all weather equipment they maintain to the WF and completes all Technical Order driven upgrades as required.

12.6.13. Communication squadron is responsibility to maintain and administer Joint Environmental Toolkit (JET) IAW the memorandum of agreement between 24 AF, AF Director of Weather, and JET Program Management Office.

#### **12.7. 87 CE:**

12.7.1. May contact the weather Flight Chief/NCOIC to request climatological data and specialized support for projects on JB-MDL.

#### **12.8. 87 CE, Readiness Flight and the Fire Protection Flight:**

12.8.1. May contact the WF to request weather information for emergency management programs and plume/fallout modeling, They may also request CDMs and/or EDMs data as necessary.

#### **12.9. 87 SFS:**

12.9.1. Promptly informs the WF of any hazardous weather reported by Security Forces personnel (tornado, hail, etc).

#### **12.10. All flying units:**

12.10.1. Notifies weather duty forecaster of current and planned weather alternates and any special considerations affecting duration of tour (i.e. weather categories, exercise/deployment considerations, etc) for all missions briefed by the WF (usually occurs when TACC is down).

12.10.2. Notifies the WF of required additional support as soon as it becomes known to include monitoring of alternate observations/forecasts and tracking of weather conditions that may affect local flying operations for all missions briefed by the WF.

12.10.3. Provides timely notification of changes to scheduled operations that affect weather support requirements as soon as the change is identified for all missions briefed by the WF.

12.10.4. Provides PIREPS, either directly to the WF or through the PMSV or CP.

12.10.5. Provides feedback to the WF for all missions considered non-effective due to incorrect forecast weather. See [Paragraph 1.11](#) for more details.

12.10.6. Provides weather debriefing/survey forms/feedback and contact information through respective unit weather liaison.

12.10.7. Provides guidance (at least 2 weeks in advance) to the WF regarding any weather training/educational requirements (or changes in requirements), if applicable.

**12.11. Bio-environmental Flight:**

12.11.1. Provides the base populace the Wet Bulb Globe Temperature used to identify flag conditions across the joint base.

**12.12. All Weather Support Recipients:**

12.12.1. Notify WF through proper chain of command when new weather support requirements are identified.

12.12.2. Coordinate changes/additions to weather support requirements as soon as they are foreseen.

12.12.3. Provide a minimum of 48-hours notice for known weather support requests entailing out of station support.

PAUL R. MURPHY, Colonel, USAF  
Commander, 305th Air Mobility Wing

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

AFPD 15-1, *Air Force Weather Operations*

AFI 10-206, *Operational Reporting*

AFI 10-229, *Responding to Severe Weather Events*

AFI 15-114, *Functional Resource and Weather Technical Performance Evaluation*

AFI 15-128, *Air Force Weather Roles and Responsibilities*

AFI 10-2501, *Air Force Emergence Management (EM) Program Planning and Operations*

AFI 11-202v3, *General Flight Rules*

AFI 11-418, *Operations Supervision*

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

AFMAN 15-111, *Surface Weather Observations*

AFMAN 15-124, *Meteorological Codes*

AFMAN 15-129, *Air and Space Weather Operations – Processes and Procedures*

AFMAN 33-363, *Management of Records*

AMCI 15-101, *AMC Weather Operations*

305 AWI 10-2, *Force Spectrum Threat Response Plan (FSTR)*

305 AW OPLAN 91-2, *Mishap Investigation Plan*

Memorandum of Agreement, 305 OSS and 15 OWS for *Weather Operations, Products, and Information*

***Prescribed Forms***

No forms are prescribed by this publication.

***Adopted Forms***

DD Form 175-1, *Flight Weather Briefing*, 1 October 2002

AF Form 847, *Recommendation for Change of Publication*, 22 September 2009

***Abbreviations and Acronyms***

**ABW**—Air Base Wing

**AF**—Air Force

**AFB**—Air Force Base

**AGL**—Above Ground Level

**AIREP**—Air Report

**AFI**—Air Force Instruction  
**AFMAN**—Air Force Manual  
**AFOSH**—Air Force Occupational Safety Hazard  
**AFPD**—Air Force Policy Directive  
**AFRIMS**—Air Force Records Information Management System  
**AFW**—Air Force Weather  
**AFWA**—Air Force Weather Agency  
**AFVA**—Air Force Visual Aide  
**ALSTG**—Altimeter Setting  
**ALT**—Alternate  
**AMC**—Air Mobility Command  
**AMCI**—Air Mobility Command Instruction  
**AMOS**—Automated Meteorological Observing System  
**AMW**—Air Mobility Wing  
**AOR**—Area of Responsibility  
**ARW**—Air Reserve Wing  
**AS**—Airlift Squadron  
**ASOS**—Automated Surface Observing System  
**ATC**—Air Traffic Control  
**BECMG**—Becoming  
**BKN**—Broken  
**BWW**—Basic Weather Watch  
**CAT**—Crisis Action Team  
**CC**—Commander  
**CDM**—Chemical Downwind Message  
**CIG**—Ceiling  
**COLS**—Common Output Level Standards  
**CONUS**—Continental United States  
**CP**—Command Post  
**CRG**—Contingency Response Group  
**CRW**—Contingency Response Wing  
**CS**—Communications Squadron

**CWT**—Combat Weather Team  
**CWW**—Cooperative Weather Watch  
**DA**—Density Altitude  
**DLT**—Desired Lead Time  
**DO**—Director of Operations  
**DOD**—Department of Defense  
**DSIPTD**—Dissipated  
**DSNT**—Distant  
**DZ**—Drizzle  
**EDM**—Effective Downwind Messages  
**EM**—Emergency Management  
**ESTMD**—Estimated  
**EWO**—Emergency War Orders  
**FG**—Fog  
**FITL**—Forecaster in the Loop  
**FLIP**—Flight Information Publication  
**FM**—Flight Manager  
**FRN**—Forecast Reference Notebook  
**FROPA**—Frontal Passage  
**FRQ**—Frequent  
**FSTR**—Force Spectrum Threat Response  
**FT**—Foot/Feet  
**FTU**—Field Training Unit  
**FZ**—Freezing  
**GDSS 2**—Global Decision Support System (version 2)  
**GMTF**—Global Mobility Task Force  
**GPS**—Global Positioning System  
**GR**—Hail  
**HAZMAT**—Hazardous Material  
**HF**—High Frequency  
**HURCON**—Hurricane Condition  
**IAW**—In Accordance With

**IFM**—Integrated Flight Management  
**IRC**—Instrument Refresher Course  
**IRP**—Instrument Refresher Program  
**IWWC**—Integrated Weather Warning Capability  
**JAAWIN**—Joint Air Force and Army Weather Information Network  
**JB**—MDL – Joint Base McGuire-Dix-Lakehurst  
**JET**—Joint Environmental Toolkit  
**JMO**—Joint Meteorological Officer  
**KNEL**—airfield code for Lakehurst Maxfield Field  
**KT**—Knots  
**KWRI**—airfield code for McGuire Field  
**LAN**—Local Area Network  
**LBC**—Laser Beam Ceilometer  
**LLWS**—Low Level Wind Shear  
**LRF**—Laser Range Finder  
**LTG**—Lightning  
**LWR**—Lower  
**LWU**—Lead Weather Unit  
**MEF**—Mission Execution Forecast  
**MEFP**—Mission Execution Forecast Process  
**METAR**—Routine Meteorological Observation Report  
**METCON**—Meteorological Conference  
**METNAV**—Meteorological and Navigational  
**METOC**—Meteorological and Oceanographic  
**METWATCH**—Meteorological Watch  
**MFR**—Memorandum for Record  
**MOA**—Memorandum of Agreement  
**MOAF**—Military Operation Area Forecast  
**MOV**—Moving  
**MOVD**—Moved  
**MWS**—Mission Weather Service  
**NAES**—Naval Air Engineering Station

**NCOIC**—Non-Commissioned Officer in Charge  
**NE CONUS**—Northeast Continental United States  
**NEXRAD**—Next Generation Radar  
**NHC**—National Hurricane Center  
**NM**—Nautical Mile  
**NOTAM**—Notice to Airman  
**NWS**—National Weather Service  
**OCNL**—Occasional  
**OIC**—Officer in Charge  
**OG**—Operations Group  
**OHD**—Overhead  
**OPR**—Office of Primary Responsibility  
**OWS**—Operational Weather Squadron  
**OPREP**—Operational Report  
**OPUP**—Open Principal User Processor  
**OSS**—Operations Support Squadron  
**OVC**—Overcast  
**OWS**—Operational Weather Squadron  
**PA**—Public Affairs  
**PA**—Pressure Altitude  
**PIREP**—Pilot Report  
**PK WND**—Peak Wind  
**PMSV**—Pilot to Metro Service  
**POC**—Point of Contact  
**PRESFR**—Pressure Falling Rapidly  
**PRESRR**—Pressure Rapidly Rising  
**RAPCON**—Radar Approach Control  
**ROS**—Runway Observing Site  
**RVR**—Runway Visual Range  
**RWY**—Runway  
**SATCOM**—Satellite Communications  
**SCT**—Scattered

**SE**—Safety Office  
**SG**—Snow Grains  
**SH**—Showers  
**SJA**—Staff Judge Advocate  
**SKC**—Skies Clear  
**SM**—Statute Mile  
**SN**—Snow  
**SODAR**—Sonic Detection and Ranging  
**SOF**—Special Operations Forces  
**SOP**—Standard Operating Procedure  
**SPC**—Storm Prediction Center  
**SPECI**—Special  
**STNRY**—Stationary  
**STRATCOM**—Strategic Command  
**SWAP**—Severe Weather Action Procedures  
**SWAT**—Severe Weather Action Team  
**TACC**—Tanker Airlift Control Center  
**TAF**—Terminal Aerodrome Forecast  
**TCU**—Towering Cumulus  
**TEMPO**—Temporary  
**TWR**—Tower  
**T/O**—Take-off  
**UA**—Upper Air  
**UFN**—Until Further Notice  
**UHF**—Ultra High Frequency  
**UNKN**—Unknown  
**UTC**—Coordinated Universal Time  
**UUA**—Urgent Upper Air  
**VC**—Vicinity  
**VHF**—Very High Frequency  
**VIS**—Visibility  
**VRB**—Variable

**VV**—Vertical Visibility

**WF**—Weather Flight

**WSHFT**—Wind Shift

**WX**—Weather

## Attachment 2

## EXAMPLE OPREP-3 REPORT FORMAT

## BEELINE/OPREP-3 REPORTING

**BEELINE:** \_\_\_ (NOTE 1) AT JB-MDL, NJ. THE JB MDL COMMAND POST WAS NOTIFIED OF (SELECT ALL APPROPRIATE)

\_\_\_ WINDS OVER 50 KNOTS (ACTUAL OBSERVED \_\_\_\_\_ KNOTS)

\_\_\_ HAIL LARGER THAN 1/2 INS (ACTUAL OBSERVED \_\_\_\_\_ INS)

\_\_\_ TORNADO

\_\_\_ SNOWSTORM

\_\_\_ LIGHTNING

THE FORECAST AT THE TIME OF OCCURRENCE CALLED FOR

AT \_\_\_\_\_ (NOTE 2) A (circle: WATCH, ADVISORY, WARNING) FOR \_\_\_\_\_ (ENTER FORECAST CRITERIA) WAS ISSUED, PROVIDING \_\_\_\_\_ MINUTES LEAD TIME. THE DESIRED LEAD TIME IS \_\_\_\_\_ MINUTES.

ALL METEOROLOGICAL EQUIPMENT WAS OPERATIONAL EXCEPT (circle appropriate: WEATHER RADAR, WIND SENSORS, WEATHER DISSEMINATION SYSTEM, (OTHER) \_\_\_\_\_)

REMARKS (include damage and or mission impacts): \_\_\_\_\_

**NOTES:**

(1) ENTER REPORT TYPE (e.g., SEVERE WEATHER INCIDENT, SEVERE WEATHER 5 NM NORTH OF MCGUIRE FIELD,)

(2) ENTER DATE/ TIME OF OCCURRENCE (e.g., 04/1500ZJUN11)

*RULE 81 USED TO DETERMINE THE REPORTING CRITERIA. THIS IS AN INITIAL COMMAND POST REPORT.  
FURTHER REPORTING REQUIRED THROUGH WEATHER CHANNELS:*

Notify 15 OWS/CC for OPREP-3 reports involving severe weather – available on SIPRNET Ski Web  
Notify HQ AMC/A3W of OPREP-3 reports involving severe weather – available on SIPRNET Ski Web  
<https://skiweb.stratcom.smil.mil/ski-web/>

## Attachment 3

## SPECIAL (SPECI) AND LOCAL WEATHER OBSERVING CRITERIA

**A3.1. SPECI Criteria.** A SPECI is an unscheduled observation completed and transmitted when any of the special criteria listed is met. SPECI will contain all data elements found in a METAR plus additional remarks that elaborate on data in the body of the report. All SPECI reports will be prepared and transmitted as soon as possible after relevant criteria are observed.

Table A3.1. Visibility Criteria.

McGuire Field (KWRI)		Lakehurst Maxfield (KNEL)	
Visibility Value	Source	Visibility Value	Source
3 miles (4800 m)	DOD FLIP / AFMAN 15-111	3 miles (4800 m)	COMOCNOPSINST 3141.2
2 miles (3200 m)	DOD FLIP / AFMAN 15-111	2 miles (3200 m)	DOD FLIP / COMOCNOPSINST 3141.2
1 3/4 miles (2800 m)	DOD FLIP	1 3/4 miles (2800 m)	DOD FLIP
1 1/2 miles (2400 m)	DOD FLIP	1 1/2 miles (2400 m)	DOD FLIP
1 1/4 miles (2000 m)	DOD FLIP	1 1/4 miles (2000 m)	DOD FLIP
1 mile (1600 m)	DOD FLIP / AFMAN 15-111	1 mile (1600 m)	DOD FLIP / COMOCNOPSINST 3141.2
3/4 mile (1200 m)	DOD FLIP	3/4 mile (1200 m)	DOD FLIP
1/2 mile (800 m)	DOD FLIP / AFMAN 15-111	1/2 mile (800 m)	DOD FLIP / COMOCNOPSINST 3141.2

**NOTE:** Prevailing visibility is observed to decrease to less than or, if below, increase to equal or exceed.

Table A3.2. Runway Visual Range (RVR).

Condition	Criteria
Highest value from the designated RVR runway	Decreases to less than, or if below, increases to equal or exceed 2400 ft
Prevailing visibility	First observed at or below 1 mile
Prevailing visibility	At or below 1 mile increases to exceed 1 mile
RVR for the active runway	Decrease to less than, or if below, increase to equal or exceed: 6000 ft, 5000 ft, 4000 ft, 2400 ft, 2000 ft, 1800 ft, 1200 ft
RVR for the active runway	RVR is first determined as unavailable (RVRNO)
After period of RVRNO	Conditions for reporting RVR exist

**Table A3.3. Ceiling Criteria.**

<b>Ceiling Value</b>	<b>Source</b>	<b>Ceiling Value</b>	<b>Source</b>
3000 ft	AFMAN 15-111	3000 ft	COMOCNOPSINST 3141.2
1500 ft	AFMAN 15-111	1500 ft	COMOCNOPSINST 3141.2
1100 FT	DOD FLIP	1000 FT	COMOCNOPSINST 3141.2
1000 ft	AFMAN 15-111	600 ft	DOD FLIP
800 ft	AFMAN 15-111 (Precision Approach Critical Area)	500 ft	DOD FLIP / COMOCNOPSINST 3141.2
700 ft	AFMAN 15-111	400 ft	DOD FLIP
600 ft	DOD FLIP	300 ft	DOD FLIP
500 ft	AFMAN 15-111 & DOD FLIP	200 ft	COMOCNOPSINST 3141.2
300 ft	DOD FLIP		
200 ft	DOD FLIP		

**NOTE:** The ceiling is observed to form below, decrease to less than or, if below, increase to equal or exceed.

**Table A3.4. Additional SPECI Criteria.**

Condition	Criteria
Sky Condition	Clouds or other phenomena aloft are observed below 1100 ft and no layer aloft was reported prior
Wind Shift	Wind direction changes by 45 degrees or more in less than 15 minutes and the wind speed is 10KT or more throughout the wind shift
Squall	Any sudden onset of wind that increases at least 16KT and is sustained at 22KT or more for at least 1 minute
Thunderstorm or Hail	Begins or ends
Precipitation	Begins or ends
Freezing Precipitation	Begins, ends, or changes intensity
Ice Pellets	Begins, ends, or changes intensity
Tornado or Funnel Cloud	Observed or disappears from site
Volcano Eruption	Eruption is first noted or volcanic ash is observed
Resumption of Service	Within 15 minutes after returning to duty following a break in hourly coverage if a METAR was not filed as scheduled
Aircraft Mishap	Upon occurrence or notification - If Operating in BACK-UP mode, take a full element SPECI and enter (ACFT MSHP) in remarks on the 3813/3803 only. DO NOT TRANSMIT THE REMARK locally or long line.

**NOTE:** Except for freezing rain, freezing drizzle, hail, and ice pellets, 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 or snow).

### **A3.2. LOCAL criteria.**

A3.2.1. When FMQ-19 pressure sensor data is unavailable a 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. Any other required observation taken within the 35 minute timeframe will meet this requirement (i.e. a scheduled METAR or SPECI)

## Attachment 4

## FORECAST SPECIFICATION AND AMENDMENT CRITERIA

## A4.1. TAF Amendment and Specification.

A4.1.1. Individual elements in the TAF will be forecast as accurately as the state of the art allows. As a minimum, TAFs (scheduled or amended) will specify time of occurrence to the nearest hour (and minute as appropriate), the duration, and intensity of the standard criteria listed in [Table 4.1](#)

A4.1.2. TAF-coded forecast products will be amended for the standard criteria and conditions listed in [Table 4.1](#)

A4.1.3. Currently only McGuire Field has a TAF being produced. See [Attachment 6](#) for assistance understanding TAF code.

## A4.1. USAF TAF Amendment Criteria.

Forecast Element/Occurrence	Standard TAF Amendment Criteria	
<b>Ceiling or Visibility</b> observed or later expected to decrease to less than, or if below, increase to equal or exceed:	<b>Category</b>	<b>Limits</b>
	D	$\geq 3,000$ feet/4800 meters (3 statute miles)
	C	$< 3,000$ feet/4800 meters and $\geq 1,000$ feet/3200 meters (2 statute miles)
	B	$< 1,000$ feet/3200 meters and $\geq 200$ feet/0800 meters (1/2 statute mile)
	A	$< 200$ feet/0800 meters (1/2 statute mile)
	Categories are determined by the lower of the values. NOTES: 1. Forecast category is determined by the lower ceiling or visibility value. 2. Use surface visibility to determine forecast category. 3. Substitute the lowest published airfield minimum for Ceiling/Visibility category A.	
<b>Surface Winds</b>	Wind Speed: The difference between the predominant wind speed (or gust) and the forecast wind speed (or gust) is 10 knots or more.  Wind Direction: a change $> 30$ degrees when the predominant wind speed or gusts are expected to be over 15 knots.	

Forecast Element/Occurrence	Standard TAF Amendment Criteria
<b>Icing</b> , 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 below moderate or greater thresholds and was not specified in the forecast.
<b>Turbulence</b> (for Cat II aircraft), not associated with thunderstorms, from the surface to 10,000 feet AGL	The beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.
<p><b>Forecast Watch, Warning, and Advisory criteria and/or TAF-amendable Watch, Warning, and Advisory criteria</b> - including non-convective low-level winds shear:</p> <p>NOTE: Watches or Advisories issued for an area may or may not be specified in a TAF-coded forecast for an installation depending on situation.</p>	<p>Occur, or are expected to occur, during the forecast period, but were not specified in the forecast.</p> <p>Were specified in the forecast, but are no longer occurring or expected to occur during the forecast period.</p>
<b>Thunderstorms</b>	Incorrect forecast start or end time.
<b>Specification of Temporary Conditions</b>	<p>Forecast conditions specified as temporary become predominant conditions.</p> <p>Forecast conditions specified as temporary do not occur as forecast.</p> <p>Forecast conditions specified as temporary are no longer expected to occur.</p>
<b>Changes to Predominant Conditions</b>	<p>Forecast change conditions (BECMG or FM group) occur before the beginning of the specified period of change and are expected to persist.</p> <p>Forecast change conditions (BECMG or FM group) do not occur by the specified time.</p> <p>Forecast change conditions (BECMG or FM group) are no longer expected to occur.</p>
<b>Representative Conditions</b>	Forecast conditions are considered unrepresentative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to in-flight aircraft.

## Attachment 5

### SAMPLE WEATHER PRODUCT DISSEMINATION FORMAT/INTERPRETATION

#### A5.1. Observations.

A5.1.1. Station identifier – also called the ICAO. This code identifies the location of the observation (in this case KWRI for Joint Base McGuire-Dix and KNEL for Lakehurst).

A5.1.2. Type of observation. There are three types of observations as described below:

A5.1.2.1. **Aviation Routine Weather Report (METAR)**. An observation taken each hour, between H+55 and H+59.

A5.1.2.2. **Special Observation (SPECI)**. An observation taken as a result of one of the special criteria (listed in [attachment 3](#)) being met.

A5.1.2.3. **Local Observation (LOCAL)**. An observation taken as a result of one of the local weather criteria (listed in [Attachment 3](#)) being met.

A5.1.3. Time. This is the time, in Zulu, or GMT, that the last element of the observation was observed.

A5.1.4. Wind. This portion of the observation provides the wind direction (first 3 numbers, VRB for variable, or 000 for calm), sustained wind speed (next 2 or 3 numbers), and wind gusts (any numbers following the G, if there have been any) measured in knots. One knot equals 1.14 miles per hour.

A5.1.5. Visibility. The furthest predominant distance (at least 50% of the aerodrome) that can be seen from the airfield, reported in statute miles. The most common visibility reported is 7 miles.

A5.1.6. Present weather. Any weather phenomenon that is occurring on the airfield. This is mandatory anytime the visibility is less than 7 miles. [Table A5.1](#) below lists the present weather codes.

**Table A5.1. Weather Phenomena Codes.**

Qualifier		Weather Phenomena		
Intensity	Descriptor	Precipitation	Obscuration	Other
- Light	<b>MI</b> = Shallow	<b>DZ</b> = Drizzle	<b>BR</b> = Mist	<b>PO</b> = Well Developed Dust/Sand Whirls
Moderate	<b>PR</b> = Partial	<b>RA</b> = Rain	<b>FG</b> = Fog	<b>SQ</b> = Squall
+ Heavy	<b>BC</b> = Patches	<b>SN</b> = Snow	<b>FU</b> = Smoke	<b>FC</b> = Funnel Cloud, Tornado, or Water Spout
<b>VC</b> = Vicinity	<b>DR</b> = Low Drifting	<b>SG</b> = Snow Grains	<b>VA</b> = Volcanic Ash	<b>SS</b> = Sandstorm
	<b>BL</b> = Blowing	<b>IC</b> = Ice Crystals	<b>DU</b> = Dust	<b>DS</b> = Dust Storm
	<b>SH</b> = Showers	<b>PL</b> = Ice Pellets	<b>SA</b> = Sand	
	<b>TS</b> = Thunderstorms	<b>GR</b> = Hail	<b>HZ</b> = Haze	
	<b>FZ</b> = Freezing	<b>GS</b> = Small Hail or Snow Pellets	<b>SP</b> = Spray	
		<b>UP</b> = Unknown Precipitation		

A5.1.7. Sky Condition. Describes the amount of clouds present at the airfield. They fall into the following categories:

A5.1.7.1. SKC – Sky Clear

A5.1.7.2. FEW – 1/8 to 2/8 coverage

A5.1.7.3. SCT – Scattered; 3/8 to 4/8 coverage

A5.1.7.4. BKN – Broken; 5/8 to 7/8 coverage

A5.1.7.5. OVC – Overcast; 8/8 coverage

A5.1.7.6. VV – Vertical visibility; normally used during heavy fog, indicates how far up into the fog can be seen.

A5.1.7.7. FEW000 – Surface based obscuration

A5.1.8. Cloud Height. Three-digit number which provides the height of the base of the cloud in hundreds of feet (e.g. 015 equals 1500 feet). The CB and TCU descriptors may be appended to the cloud height to indicate that the cloud is a cumulonimbus or towering cumulus.

A5.1.9. Temperature and Dew Point. Can be in either degrees Fahrenheit or Celsius.

A5.1.10. Altimeter Setting. The current value that aircraft altimeters must be set at to read an elevation of zero. The altimeter is measured in inches (INS) of mercury.

A5.1.11. Remarks. **Table A5.2** contains most of the remarks commonly seen in observations:

**Table A5.2. Common Remark Abbreviations.**

<b>CB</b> – Cumulonimbus	<b>MOV</b> – Moving	<b>TCU</b> – Towering Cumulus
<b>CONS</b> – Continuous	<b>MOVD</b> – Moved	<b>TWR</b> – Tower
<b>DSNT</b> – Distant	<b>OCNL</b> – Occasional	<b>UNKN</b> – Unknown
<b>DSIPTD</b> – Dissipated	<b>OHD</b> – Overhead	<b>VIS</b> – Visibility
<b>ESTMD</b> – Estimated	<b>PK WND</b> – Peak Wind	<b>WSHFT</b> – Wind Shift
<b>FROPA</b> – Frontal Passage	<b>PRESFR</b> – Pressure Falling Rapidly	<b>STNRY</b> – Stationary
<b>FRQ</b> – Frequent	<b>PRESRR</b> – Pressure Rapidly Rising	<b>PA</b> – Pressure Altitude
<b>LTG</b> – Lightning	<b>RWY</b> – Runway	<b>DA</b> – Density Altitude
<b>LWR</b> – Lower	<b>T</b> - Towering	

A5.1.12. Time and Initials. This is the time (minutes past the hour) that the observation was disseminated and the initials of the individual who took the observation.

## **A5.2. Terminal Aerodrome Forecast (TAF).**

A5.2.1. The forecast follows the same general format as the observation with the following exceptions:

A5.2.1.1. Valid Date/Time. Forecasts are generally valid for a 24-hour period. In this example the forecast is valid from the 24st at 1400 Zulu (or GMT) until the 25d at 1000 Z.

A5.2.1.2. Max Temp/Min Temp. TXX/XXZ group indicates a maximum temperature of 22 in degrees Celsius to occur at 20Z. The second TXX/XXZ group indicates a minimum temperature of -1 in degrees Celsius to occur at 09Z. **Note:** M indicates a minus sign in front of the number: M01 = -1 C).

A5.2.1.3. BECMG – This is a code to indicate that the predominant condition of the sky will change to (or become) the conditions listed in that line of the forecast. The conditions will change during the time period that follows the BECMG code (1600 to 1700 Z or 1900 to 2000Z in the example).

A5.2.1.4. TEMPO – This code means that the conditions listed on that line may occur for periods of an hour or less (an hour and 15 minutes or less for thunderstorms) anytime between the time frame following the TEMPO code (2000Z to 2200Z in this example).

Table A5.3. Coded TAF.

TAF AMD KWRI <b>241410</b> 30010G15KT 9999 OVC015 620159 QNH2961INS
BECMG 1617 28012KT 9999 SCT015 OVC040 QNH2968INS
<b>BECMG</b> 1920 24012G25KT 8000 -SHRA SCT040 BKN100 OVC200 QNH2960INS
<b>TEMPO</b> 2022 25040G60KT +FC +TSRA OVC025CB
BECMG 2122 30015G25KT 9999 NSW SCT030 BKN100 QNH2956INS
BECMG 0809 VRB06KT 3200 BR FEW250 QNH2980INS
BECMG 1011 VRB06KT 1600 BR SCT000 SCT250 QNH2990INS BR SCT000 <b>T22/20Z TM01/09Z</b> AMD 1405

## Attachment 6

## SPACE WEATHER ANALYSES, FORECAST, ALERTS, AND WARNINGS)

Table A6.1. Space Weather Products (AFMAN 15-129) Table 4.3.

Mission Area	AFWA Product	Description
HF Communications and other applications using over-the-horizon HF radio waves	Regional 6-hr ionospheric analyses; issued four times daily on JAAWIN/JAAWIN-S/JAAWIN-SCI	Identifies locations where space weather conditions have caused degradation in HF communications and other HF applications.
	Regional ionospheric forecasts; issued four times daily on JAAWIN/JAAWIN-S/JAAWIN-SCI	Identifies locations where space weather conditions are expected to degrade HF communications and other HF applications.
	Point-to-point forecasts of useable HF frequencies; issued on JAAWIN/JAAWIN-S upon request of customer/user	Identifies maximum minimum, and optimal HF frequencies for customer-specific transmitter and receiver locations based on expected ionospheric conditions.
	Point-to-regional HF illumination maps; issued every hour on JAAWIN-S for customer requested locations	Identifies areas where user-defined HF signals from a user-defined point location are most likely to have greatest strength.
	Short Wave Fade Advisory; issued via AWN, fax, phone, pager, and e-mail when a space weather disturbance suddenly degrades HF conditions	Identifies the HF frequency ranges and locations that are effected by an observed sudden disturbance and then forecasts the duration and magnitude of that degradation.
	Polar Cap Absorption Advisory; issued via AWN, fax, phone, pager, and e-mail when HF conditions have been severely degraded above/below 55 degrees north or south due to a space weather disturbance	Identifies that conditions exist which may prevent use of all HF communications in the polar zones.

Ultra High-Frequency Satellite Communications (UHF SATCOM)		
	Regional 6-hr ionospheric forecasts; issued four times daily on JAAWIN/ JAAWIN-S/JAAWIN-SCI	Identifies locations where space weather conditions are expected to degrade UHF SATCOM. Valid for UHF SATCOM
	Regional nowcasts of ionospheric conditions; issued for selected global regions every 30 minutes on JAAWIN-S	Identifies locations where space weather conditions are currently degrading UHF SATCOM signals.
UHF SATCOM and Super High-Frequency (SHF) SATCOM	Solar radio wave burst warning; issued via the AWN, fax, telephone, pager, and e-mail when the Sun emits a severe burst of radio wave energy	Identifies UHF and/or SHF SATCOM frequency ranges affected by an observed burst of radio wave energy capable of causing interference; includes burst strengths and frequencies.
GPS Navigation	Regional nowcasts of single-frequency GPS accuracy; issued every hour on JAAWIN and JAAWIN-S	Identifies estimates of current single-frequency GPS accuracy based on calculations that take into account satellite availability and geometry as well as ionospheric-induced errors.
Satellite Operations	Hourly magnetometer analyses--Ap Index; issued every hour via the AWN and JAAWIN/JAAWIN-S/JAAWIN-SCI	Quantifies the level of disturbance in the electrical current network of the ionosphere and magnetosphere. Possible effects are satellite drag on low earth orbit satellites, SATCOM scintillation, HF radio communication interference, or launch trajectory errors.

	Geomagnetic storm advisory/warning; issued via the AWN, fax, telephone, pager, and e-mail when the hourly Ap and/or 24-hourly Ap index reaches or is expected to reach significant levels	Identifies the expectation or the observation that the electrical current network of the ionosphere and magnetosphere has reached significantly disturbed levels. Includes forecast of storm strength and duration. Possible effects are satellite drag on low earth orbit satellites, SATCOM scintillation, HF radio communication interference, or launch trajectory errors.
	Energetic Proton Flux Advisory; issued via the AWN, fax, telephone, pager, and e-mail when high-energy proton fluxes at geostationary orbit are expected to reach significant levels	Identifies the expectation for satellites to be bombarded with high-energy protons; includes a forecast of proton flux strength and duration; identifies potential for anomalous behavior in satellites due to proton bombardment.
	Energetic Proton Flux Warning; issued via the AWN, fax, telephone, pager, and e-mail when high-energy proton fluxes at geostationary orbit have reached significant levels	Identifies observed conditions that may lead to anomalous behavior of satellites caused by the bombardment of high-energy protons; includes current and forecasted proton flux strength and forecasted duration.
	Internal Electrical Charging Advisory; issued via the AWN, fax, telephone, pager, and e-mail when high-energy electron fluxes at geostationary orbit reach significant levels	Identifies observed conditions that may lead to anomalous behavior of satellites caused by internal charging/discharging due to a satellite being bombarded by high-energy electrons.
Space Tracking	Solar radio wave burst warning; issued via the AWN, fax, telephone, and e-mail when the Sun emits a severe burst of radio wave energy	Identifies observed conditions that may lead to interference affecting ground-based space tracking radars using UHF-SHF frequencies; includes specific frequencies and strengths of radio energy burst.

	Auroral radar clutter analyses; issued hourly via JAAWIN-S/JAAWIN-SCI	Identifies locations and strengths of potential interference to ground-based space radars caused by electron precipitation (auroral electrons).
	Hourly magnetometer analyses--Ap Index; issued every hour via the AWN and JAAWIN/JAAWIN-S/JAAWIN-SCI	Quantifies the level of disturbance in the electrical current network of the ionosphere and magnetosphere; identifies potential for increased drag to cause objects in space to change orbital profile.
	Advisory/Warning of Geomagnetic Storming; issued via the AWN, fax, telephone, e-mail when the hourly Ap and/or 24-hourly Ap index reaches or is expected to reach significant levels	Identifies the expectation or the observation that the electrical current network of the ionosphere and magnetosphere has reached significantly disturbed levels; identifies potential for increased drag to cause objects in space to change orbital profile; includes forecasts of strength and duration.
High Altitude Flight (Flights transiting polar regions)	Radiation Dosage Analyses; issued four times daily via JAAWIN based on cosmic radiation measurements	Quantifies the global level of radiation dosage at high altitudes based on background cosmic radiation.
	Energetic Proton Flux Advisory; issued via the AWN, fax, telephone, pager, and e-mail when high-energy proton fluxes at geostationary orbit are expected to reach significant levels	Identifies the expectation for radiation dosages due to high-energy protons at high altitudes to exceed significant levels; includes a forecast of proton flux strength and duration.
	Energetic Proton Flux Warning; (issued via the AWN, fax, telephone, pager, and e-mail when high-energy proton fluxes at geostationary orbit have reached significant levels	Identifies observed high-altitude radiation dosage conditions that have exceeded significant levels; includes current and forecasted proton flux strength and forecasted duration.

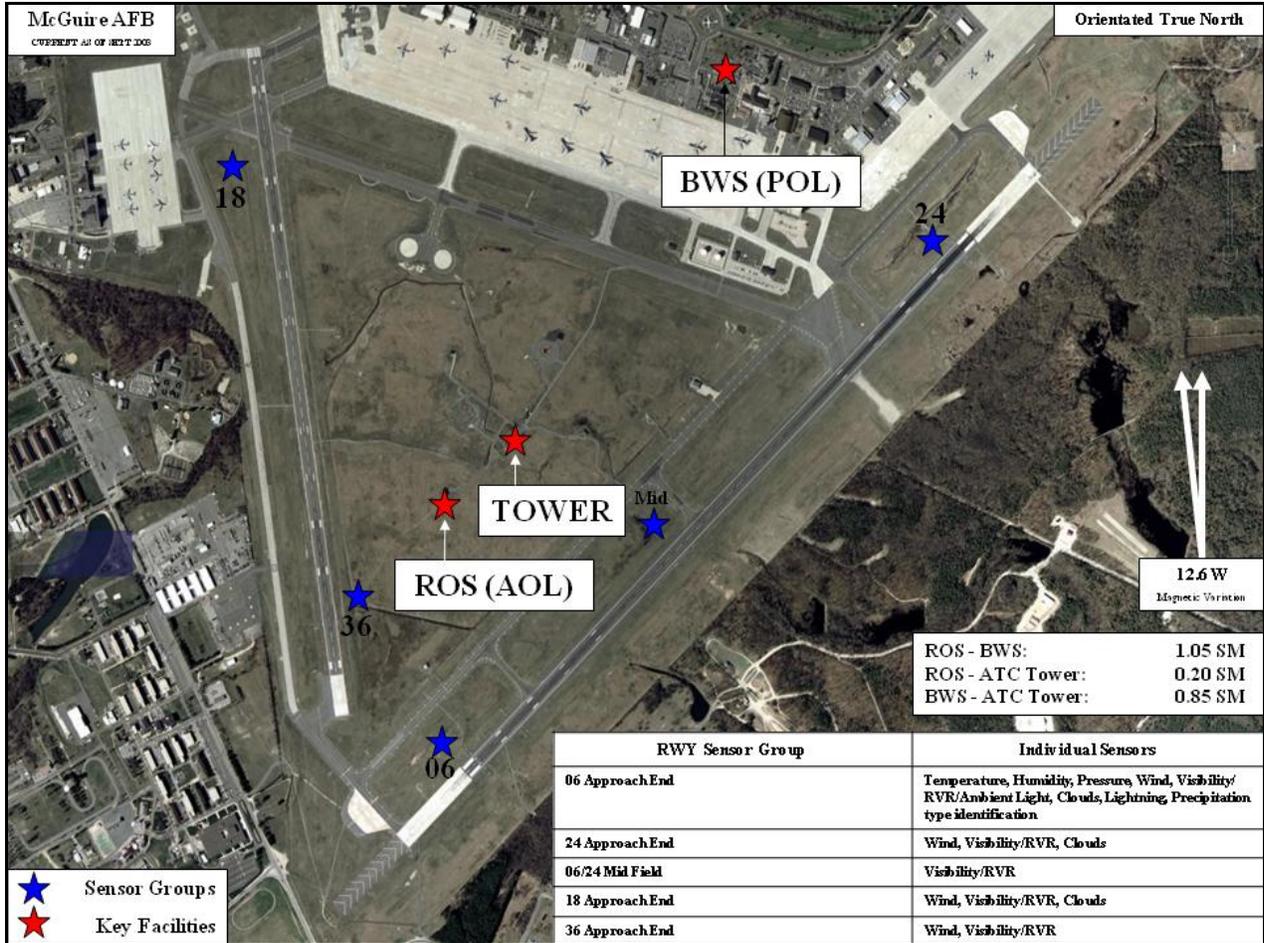
Intelligence Collection	Various classified products as well as unclassified products shown above	The ability to collect intelligence information can be affected by space weather conditions. For example, the ability to intercept HF signals is affected by space weather. Furthermore, the ability to use ground-based and/or space-based intelligence collection assets to gather data may be prevented or inhibited, or it may be facilitated, depending on space weather conditions. Likewise, the ability of an adversary to conduct operations may be impacted due to space weather.
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Attachment 8

MCGUIRE FIELD WEATHER SENSOR LOCATIONS

Figure A8.1. Airfield Sensor Location Diagram.



## Attachment 9

## SAMPLE CLOSURE LETTER

MEMORANDUM FOR RECORD

17 Jun 2011

TO: JB MDL CP, 15 OWS WXB, 305 OSS/OSAA

FROM: 305 OSS/OSW Flight NCOIC

SUBJECT: Limited Duty Operations for Jun 17, 2011 – Jun 23, 2011

1. Duty hours of the 305<sup>th</sup> OSS Weather Flight for the next week is as follows:

Date (Local Time)	Open (Local/Zulu)	Close (Local/Zulu)	Notes/Expected Impacts:
Friday, Jun 17, 2011	0600L/1000Z	2000L/0000Z	
<b>Saturday, Jun 18, 2011</b>	<b>CLOSED</b>	<b>CLOSED</b>	
<b>Sunday, Jun 19, 2011</b>	<b>CLOSED</b>	<b>CLOSED</b>	
Monday, Jun 20, 2011	0600L/1000Z	2000L/0000Z	
Tuesday, Jun 21, 2011	0600L/1000Z	2000L/0000Z	
Wednesday, Jun 22, 2011	0600L/1000Z	2000L/0000Z	
Thursday, Jun 23, 2011	0600L/1000Z	2000L/0000Z	

**2. STANDBY SCHEDULE:**

**Do NOT call personnel if not on standby. Call NCOIC or Flight Chief after second failed attempt.**

Date	Standby	Standby Forecaster	Contact Number
6/17/2011	Fri Night	20L(00Z) – 00L(04Z)	TSgt XXXXXX (xxx) xxx-xxxx
6/18/2011	Saturday	00L(04Z) – 00L(04Z)	TSgt XXXXXX (xxx) xxx-xxxx
6/19/2011	Sunday	00L(04Z) – 00L(04Z)	TSgt XXXXXX (xxx) xxx-xxxx
6/20/2011	Mon Morning	00L(04Z) – 00L(04Z)	TSgt XXXXXX (xxx) xxx-xxxx
<b>Monday – Thursday Nights: 2000L-2359L PM Standby Cell Phone: (xxx) xxx-xxxx – (Personnel vary)</b>			
<b>Tuesday – Friday Mornings: 0000L-0600L AM Standby Cell Phone: (xxx) xxx-xxxx – (Personnel vary)</b>			

**3. STANDBY OPERATIONS:**

3.1. The duty weather technician will coordinate closure with the following agencies prior to departing the weather station.

Agency	Telephone Number
JB MDL Command Post	DSN 650-3936/3926    COMM (609) 754-3936/3926
305 <sup>th</sup> OSS/ATC Tower	DSN 650-3020    COMM (609) 754-2524
305 <sup>th</sup> OSS/ATC RAPCON	DSN 650-3268    COMM (609) 754-2275
15 <sup>th</sup> OWS JBMDL Forecaster	DSN 576-9720    COMM (618) 256-9720
305 <sup>th</sup> OSS Airfield Management	DSN 650-2712    COMM (609) 754-2712

3.2. The 305<sup>th</sup> AMW/CC (or designated representative) and JB MDL CP Duty Officer are the determining authorities for recall of the standby technician at JBMDL.

3.3. The 15<sup>th</sup> OWS will directly recall the standby technician when any conditions in paragraph 3 below are occurring or expected to occur within 2 hours.

3.3.1. The 15<sup>th</sup> OWS will notify the JB MDL CP and 305 OSS Airfield Management via the numbers above when IWWC notification of any WWA fails. Courtesy call the standby weather technician of all Warnings.

3.4. Standby response time is 30 minutes from recall notification.

**4. THE STANDBY FORECASTER WILL BE RECALLED WHEN:**

4.1. Weather observations or weather sensor data is not viewable by the 15<sup>th</sup> OWS or ATC Tower personnel or observations are not representative of actual conditions (*as determined by 15<sup>th</sup> OWS or ATC*).

4.2. AFMAN 15-111 mandated augmentation of weather observations is required (METARs/SPECIs)

4.3. The 15<sup>th</sup> OWS or TACC XOW loses the capability to perform their mission and transfers weather responsibilities to 305 OSS/OSW.

4.4. Anytime the Severe Weather Action Procedures (SWAP) are implemented (SWAP is occurring or expected to occur within the next 2 hours as outlined below.

<b>Condition:</b>
Severe thunderstorms Watch or Warning is issued (Tornados, Hail $\geq$ 1/2", and Winds $\geq$ 50kts)
Any indication of Winter storm (freezing precipitation, moderate-heavy snow accumulation, blizzard)
Storm Prediction Center (SPC) issues a severe weather watch for Burlington County
National Weather Service (NWS) issues a severe weather warning for Burlington County

- 4.5. An aircraft mishap is in progress or required data save is not yet completed.
- 4.6. Real-World or Exercise war orders, alert mission, recall or terrorist attack occurs (i.e. ANY Crisis Action Team (CAT) activation).
- 4.7. Any adverse condition, in the determination of the 305 AMW/CC or JB MDL CP Duty Officer that is expected to severely degrade operations.

**NOTE:** The Weather Flight Chief or NCOIC will modify operating hours & the duty schedule as required to meet operational requirements. The duty weather technician will be prepared to work a 12 hour shift as determined by Flight Leadership, driven by the mission requirement.

**5. KEY WEATHER FLIGHT PERSONNEL:**

Name, Rank, Title	Telephone Number
XXXX X. XXXXXXXX, SMSgt, Flight Superintendent	(xxx) xxx-xxxx
XXXX X. XXXXXXXX, TSgt, NCOIC	(xxx) xxx-xxxx

**Please ensure a copy of this memorandum is readily available for personnel requiring the information**

XXXX X. XXXXXXXXXXXX, TSgt, USAF  
NCOIC, Weather Flight

**\*\*PLEASE SHRED / DESTROY UPON RECEIPT OF NEW CLOSURE LETTER\*\***