WEATHER SUPPORT PLAN

FOR

DAVISON ARMY AIRFIELD

(DAAF)

FORT BELVOIR, VIRGINIA

1 August 2012

Fort Belvoir Weather Operations
Fort Belvoir, Virginia
1 August 2012

WEATHER SUPPORT PLAN

SIGNATURE PAGE

MEMORANDUM FOR Airfield Manager, Davison Army Airfield, Army Air Operations Group, MDW,

FROM: Superintendent, OL-B, 18th Weather Squadron (WS), Fort Belvoir Weather Operations

SUBJECT: Weather Support Plan (WSP), Effective Date 1 August 2012

Fort Belvoir Weather Operations agrees to provide weather support as outlined in this WSP.

CHRIS W. KIM
Superintendent, Weather Operations

Airfield Manager, Davison Army Airfield, Army Air Operations Group, MDW

TO: OL-B, 18th WS, Fort Belvoir Weather Operations

In order to maintain weather support for the airfield, all subordinate and tenant units will provide support as outlined in this plan.

LEMUEL C. MCCULLUM
Chief, Airfield Division

WEATHER SUPPORT PLAN

SECURITY CLASSIFICATION AND ADMINISTRATIVE INSTRUCTIONS

1. **CLASSIFICATION:** This plan is UNCLASSIFIED and may be reproduced locally.

2. **ADMINISTRATION:** All changes should be posted when received. This WSP should be reviewed as required by the using agency.

3. **OPSEC:** Operations Security (OPSEC) has been considered in the preparation of this plan.

4. **Office of Primary Responsibility (OPR):** The OPR for this document is the Superintendent, Fort Belvoir Weather Operations.

RECORD OF CHANGES:

CHANGE NUMBER	DATE ENTERED	POSTED BY

RECORD OF REVIEW:

REVIEWED BY	DATE REVIEWED	REMARKS

WEATHER SUPPORT PLAN

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CHAPTER 1 – GENERAL INFORMATION

1.1. Introduction: Fort Belvoir Weather Operations (FBWO) provides tailored meteorological services oriented toward flight safety, resource protection, planning, and mission effectiveness of the United States Garrison, Fort Belvoir, Virginia, Army Air Operations Group, MDW (AAOG), and tenant commands aboard DAAF (KDAA) within the capabilities and limitations specified in this document. Tenant units include, 12th Aviation Battalion, Operational Support Airlift Agency, Regional Flight Center, Night Vision Directorate, DC Air National Guard, and the local Civil Air Patrol (CAP). These services include surface weather observing, flight weather briefing, resource protection, MEF, and staff weather officer (SWO) support. The Terminal Aerodrome Forecast (TAF), Weather Watches (WATCH), and Weather Warnings (WW) are all issued by the United States Air Force, 15th Operational Weather Squadron (15th OWS) at Scott Air Force Base, Illinois and coordinated with the local weather unit. FBWO will interpret and refine these products for the local customer.

1.2. Administrative Procedures. This Weather Support Plan (WSP) replaces any previously dated weather support plans.

1.3. Purpose: This WSP outlines procedures for providing weather support to DAAF.

1.3.1. This WSP serves as an internal document providing supported units a reference of available weather support.

1.3.2. This WSP describes support provided to Fort Belvoir Weather Operations by DAAF Operations, and Air Traffic Control (ATC) personnel. This support will be referred to as "Reciprocal Support" and is covered in Chapter 3 of this document.

1.4. Unit Overview/Organization: FBWO is a Geographically Separated Unit (GSU) of 18th Weather Squadron which is located at Pope Field, NC. The Superintendent, FBWO is the Air Operations Group, MDW and the DAAF tenant organizations Staff Weather Officer. All weather station personnel are dual qualified and as such operate in both observing and forecasting roles.

1.5. Mission. The primary mission of FBWO is to provide timely, accurate, and tailored weather support to DAAF tenant organizations and the Fort Belvoir military community. Weather services provided include surface weather observing, weather forecasting, and staff weather support. Additionally FBWO functions as "Eyes Forward", relaying significant, time-sensitive meteorological information to the technicians conducting forecasting and METWATCH operations at the OWS.

1.6. Support and Services. Support and services will be provided as specified in Joint Army Regulation 115-10/Air Force Joint Instruction 15-157, Weather Support for the U.S. Army.

1.7. Command Relationships. FBWO personnel fall under the administrative and operational control of the 18th Weather Squadron, 18th Air Support Operations Group, Air Combat Command.

1.8. Coordinating Instructions: Desired changes to this document will be coordinated and submitted to FBWO for review before publication. This plan is effective when validated by Army Air Operations Group, MDW Primary Staff and approved by the Commander, AAOG.

1.9. Assumptions: All aspects of the WSP assume FBWO will have sufficient manpower, equipment, supplies, communications, and logistical support to provide weather services.

1.10. Releasing Weather Information: FBWO will provide meteorological support to non-Government agencies and the general public through the host base public affairs office Air Force Manual 15-129 (AFMAN 15-129) /Air and Space Weather Operations – Processes and Procedures.

1.11. Contacting the Weather Station: Weather personnel can be reached by phone at DSN 656-7117/7106/7018 or commercial at 703-806-7117/7106/7018; Fax at DSN 656-7314, or commercial 703-806-7314. Staff support or weather coordination requests will be directed to the Weather Station Superintendent at DSN 656-7541. The weather station and administrative offices of FBWO are located on DAAF, Building 3136, next to Base Operations.

1.12. Duty Priorities: The mission of the FBWO is to provide tailored staff and operational level weather support to the United States Army Garrison, Fort Belvoir, DAAF, and all Fort Belvoir agencies through a combined effort of the 15th Operational Weather Squadron (OWS) located at Scott AFB, IL. FBWO will operate IAW AFMAN 15-129. FBWO will also serve as "eyes forward" for the 15th OWS providing real time interpretation of local weather information. These duties include, but are not limited to resource protection, MEFs, meteorological watch and mission watch. The 15th OWS assumes all forecasting responsibilities for DAAF when the weather station is closed. The priority for providing services for both the 15th OWS and FBWO are shown below in Tables 1.1 and 1.2.

Table 1.1. Fort Belvoir Weather Operations Duty Priorities

PRIORITY	TASK
1	Perform Emergency War Order (EWO) Tasking.
2	Execute Evacuation.
3	Respond To Aircraft/Ground Emergencies.
4	Respond to Pilot to Metro Service (PMSV) contacts.
5	Provide Weather Information for Flight Operations Officer.

6	Severe Weather Action Plan (SWAP) Operations (Notification of warnings, watches and Advisories).
7	Augment Automated Meteorological Observing System Observations for Mandatory Elements.
8	Collaborate with 15th Operational Weather Squadron.
9	Produce and disseminate the MEF.
10	Disseminate Urgent Pilot Reports.
11	Disseminate Pilot Reports.
12	Perform coordinated MISSIONWATCH support.
13	Provide Weather Briefings.
14	Weather Function Training.
15	Other duties as required.

Table 1.2. 15th OWS Duty Priorities

PRIORITY	TASK
1	Respond to Emergency War Order/contingencies.
2	Respond to aircraft emergencies and search and rescue missions.
3	Answer phone patches.
4	Disseminate severe PIREPs/AIREPs.
5	Prepare and disseminate weather watches and warnings.
6	Prepare and issue local installation forecasts.
7	Prepare and issue Aircrew Graphics products
8	Prepare and issue regional discussion bulletins
9	Prepare MEFs (DD Form 175-1 and verbal's)

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.

CHAPTER 2 - STAFF WEATHER OFFICER REPONSIBILITIES AND SERVICES

2.1. General. The Weather Station Superintendent provides or arranges for environmental services required by units assigned to DAAF. IAW AR 115-10, Army commanders state weather support requirements (data collection, forecasting, and tailored applications) and the Air Force organizes and determines how best to meet those requirements. The Weather Station Manager is a member of the Commander's Special Staff and works with the S2 for staff coordination and support within DAAF.

2.2. Hours of Staff Support. Routine office hours of the SWO are Monday through Friday, 0800L – 1600L; closed weekends and holidays. Contact the SWO for support outside of published operating hours.

2.3. Tactical Weather Support.

2.3.1. The primary mission of FBWO is to provide surface weather observations, flight weather briefings, METWATCH/MISSIONWATCH, and eyes forward. Tactical weather support is available if required through the 15th OWS. Special coordination with the FBWO would be needed.

2.4 Weather Support. In support of DAAF and tenant organizations, FBWO will:

2.4.1. Provide weather support in accordance with applicable directives and regulations identified in Para 1.13, using the established list of Duty Priorities listed in table 1.2 in Chapter 1 of this document.

2.4.2. Collect and interpret meteorological information and make recommendations to commanders and staff on meteorological factors and their effects on personnel, equipment, and operations.

2.4.3. Provide or arrange for technical information, climatological studies, analyses, and other assistance in preparation of written correspondence, exercise or operations plans, annexes, reports, LOIs, or other staff work relating to weather or weather support data requirements for DAAF.

2.4.4. Provide or arrange for weather briefings to the Airfield Commander or other units upon request.

2.4.5. Provide or arrange for initial and semi-annual weather briefings for aviators IAW USAR 95-1. This briefing will include seasonal climatology and refresher training on seasonal flight weather hazards.

2.4.6. Provide or arrange for observing and forecasting services for DAAF as specified in Chapters 4 and 5 of this document. Provide weather warnings, watches and advisories IAW Chapter 6 of this document.

2.4.7. Attend DAAF Safety and Standardization Council meetings.

2.4.8. Participate in 12th AVN BN Command and Staff Briefings.

2.4.9. Provide a qualified forecaster to serve as the weather expert on accident investigation boards (if required).

2.4.10. Provide training on weather warning notification procedures to the DAAF tenant organizations upon request.

2.4.11. Provide recall and standby duty rosters to the Airfield Operations Manager.

2.4.12. Advise Airfield Operations when significant communications outages affecting weather service or support occur.

2.4.13. Provide input to NOTAMs for prolonged Pilot-to-Metro (PMSV) radio outages, changes in operating hours, or otherwise as needed.

2.4.14. Notify ATC and Airfield Operations whenever the operational status of wind equipment changes.

2.4.15. Take action to repair or replace USAF weather equipment in Airfield Operations or ATC upon notification of an outage.

2.4.16. Provide inputs to the Airfield Manager for changes to the FLIP. Ensure weather station observing, flight weather briefing, and weather service operational hours are current in the FLIP.

2.4.17. Implement the Cooperative Weather Watch Program (CWWP) with ATC personnel IAW the Memorandum of Agreement.

2.4.18. Maintain and coordinate visibility checkpoint charts in station. Provide assistance to ATC personnel in creation/maintenance of visibility checkpoint charts needed at the tower.

2.4.19. Review the accuracy of a weather observation when notified by the DAAF ATC personnel/Airfield Operations of an aircraft accident/incident IAW DAAF Pre-Accident Plan.

2.4.20. Maintain a file of DD 175-1's, MEFs, PMSV, and Aircrew Briefing Logs for 90 days IAW AFMAN 37-139, Table 15.

2.4.21. Provide weather briefings and information to the Pentagon Heliport controllers as required.

2.4.22. Train and certify tower operators at DAAF and Pentagon Heliport, initially upon their assignment to DAAF and, if requested, annually, to take and disseminate limited weather observations.

CHAPTER 3 – RECIPROCAL SUPPORT REQUIREMENTS

3.1. General. FBWO is not a self-sufficient organization. General support responsibilities of the weather unit and hosting Army command are outlined in AR 115-10/AFJI 15-157, "Weather Support for the U.S. Army." This section is not intended to be all-inclusive, but rather to lay the groundwork for cooperation. The following support requirements are essential to FBWO providing timely, accurate, and relevant weather support to Army Air Operations Group, MDW and DAAF.

3.2. The Commander, AAOG will:

3.2.1. Notify the Weather Station Superintendent when weather support requirements are not met by existing plans.

3.2.2. Notify the Weather Station Superintendent of any changes in mission requirements or equipment that may impact weather support.

3.2.3. Provide the necessary equipment needed to accomplish SWO duties.

3.2.4. Provide office space and facilities to house FBWO unit administration, forecasting and observing operations.

3.3. All supported units will:

3.3.1. Notify the Weather Station Manager as soon as changes to or new operational weather support requirements become known.

3.3.2. Notify the Weather Station Manager of changes to briefing schedules, exercise and Emergency War Order (EWO) requirements, and other weather support needs.

3.3.3. Provide 48 hours advance notification of unique weather service requirements, to include requirements for semi-annual refresher training, mass aircrew or mission briefings. Requests for semi-annual briefs should include, date, time, and expected number of attendees. Any requests for mass or mission briefs should include flight routes, destinations, alternates and briefing times.

3.3.4. Notify the weather station when they observe any significant weather in the local area.

3.4. The AAOG S1 will:

3.4.1. Maintain a distribution location for internal correspondence.

3.5. The AAOG S2 will:

3.5.1. Include weather station personnel on Security Clearance Access Rosters for the airfield based on input from the weather station superintendent.

3.5.2. Provide in-processing/out-processing support and briefings as required.

3.6. The AAOG S3 will:

3.6.1. Provide access to plans, programs or other documents requiring meteorological support or services within appropriate security guidelines.

3.6.2. Maintain a distribution location for operations plans and operations orders for FBWO.

3.6.3. Provide notification for readiness tests, alerts, and recalls.

3.6.4. Relay weather watch and warning information IAW Chapter 6 of this plan.

3.6.5. Ensure the Weather Station Superintendent is included in all preliminary planning briefs.

3.6.6. Provide a designated annex for weather in all operation plans and orders.

3.6.7. Provide the Weather Station Superintendent a long-range outlook for all exercises.

3.6.8. Provide advance notification of meteorological support requirements for exercises with sufficient lead-time (normally 90 days) so adequate support can be provided or arranged.

3.6.9. Provide daily/weekly flight schedules/calendars to ensure adequate forecasting support is available during increased workload periods.

3.6.10. Through the Airfield Safety Officer, contact the Weather Station Manager in the event an Operational Hazard Report (OHR), and weather personnel are involved.

3.7. The AAOG S4 will:

3.7.1. Provide logistics support to FBWO as needed.

3.7.2. Provide furniture and real property to house FBWO unit administration, forecasting and observing operations.

3.7.3. Provide requisitioning, receipt and issue of operational supplies and consumable parts including expendable office supplies.

3.7.4. Provide assistance to FBWO as needed.

3.8. The AAOG IMO will:

3.8.1. Meet communications and LAN requirements IAW Army Regulation 115-10/Air Force Joint Instruction 15-157 (AR 115-10/AFJI 15-157) as identified by the Weather Station Manager and assist with maintenance of these communications circuits.

3.8.2. Provide e-mail accounts for all weather station personnel.

3.8.3. Provide communications necessary to perform weather support missions; to include NIPERnet and SIPERnet access (if required), Class "A" DSN line access and a "99" access line.

3.8.4. Provide necessary automation software, hardware, and maintenance IAW AR 115-10/AFJI 15-157 to keep U.S. Army assets (e.g. computers and peripherals) compliant and functional.

3.9. Request all Aviation Units (12th AVN BN, OSAACOM, Night Vision, and DC Army National Guard) to:

3.10.1. Provide the weather station with at least 2 hours notice of for all briefings or briefings for flight outside Virginia. Provide routes, destinations, alternates, and required brief times.

3.10.2. Promote the reporting of PIREPs by all assigned pilots.

3.10.3. Provide at least 48 hour advance notification of semi-annual weather briefing requirements and at least 24-hour advance notice of cancellations. Provide the audio-visual equipment needed for briefing presentation.

3.10.4. Provide advance notice of unit exercises, deployments, or contingencies requiring weather support at the earliest stages of exercise planning.

3.10.5. Provide at least 24 hours notice on requests for weather support outside of posted duty hours.

3.10.6. Provide flying schedules, routes, etc., required for flight weather briefing support with as much advance notification as possible.

3.10.7. Ensure aircrews follow established procedures for receiving in-person flight weather briefings, updates, and relaying PIREPs.

3.10.8. Provide feedback to the Weather Station Superintendent on services provided to include DD-175-1 and MEF support.

3.11. Airfield Operations will:

3.11.1. Process NOTAM and Flight Information Publication (FLIP) information as submitted by FBWO.

3.11.2. Inform the Weather Station Superintendent or Assistant Weather Station Superintendent of changes in airfield operating hours.

3.11.3. Coordinate review/changes to the local flying rules with Weather Station Superintendent or Assistant Weather Station Superintendent.

3.11.4. Notify the duty forecaster of all aircraft mishaps and In Flight Emergencies IAW DAAF Pre Accident Plan.

3.11.5. Notify the duty forecaster of runway condition reading.

3.11.6. Notify the weather station of any emergencies that would necessitate the evacuation of building 3136.

3.11.7. Notify the duty forecaster of any problems with JET or wind equipment.

3.11.8. Relay PIREP information received over operations radio to the weather station.

3.11.9. Notify standby forecaster and disseminate all weather watches, warnings, and advisories IAW Chapter 6 of this document.

3.11.10. Document notification of standby personnel and local agencies.

3.11.11. Recall the standby forecaster under the following conditions:

3.11.11.1. Any severe weather warnings issued by the 15th OWS (tornadoes, Hail GTE 3/4 inch, and Surface winds GTE 50 knots).

3.11.11.2. Potentially severe weather has been detected or is expected within 25NM of DAAF (sources would include the local news media, the weather channel, unofficial reports, etc.).

3.11.11.3. Informed of an aircraft mishap.

3.11.11.4. 15th OWS looses the capability to produce or issue weather watches or warnings.

3.11.11.5. If the 15th OWS requests the presence of the standby forecaster for any reason.

3.11.11.6. Base Operations personnel's discretion (any condition you feel warrants a forecasters attention).

3.11.12. Notify the Station Superintendent or Assistant Station Superintendent of the following:

3.11.12.1 When any emergency war orders, exercises, or contingencies are called.

3.11.12.2. An aircraft mishap occurs at DAAF or nearby, or involves DAAF aircraft.

3.11.12.3. Weather station personnel are involved in a potentially serious accident that may involve loss of duty time.

3.12. DAAF Air Traffic Control will:

3.12.1. Take and disseminate limited local weather observations when weather station is closed for any reason or cannot be contacted.

3.12.2. Notify the weather technician when a change in runway occurs.

3.12.3. Relay weather advisories and weather watches and warnings to aircrews operating in the Davison Class Delta Airspace.

3.12.4. Notify the weather technician when the intensity of the runway lights change. Also notify the weather technician of the current light setting when closing for the night.

3.12.5. Obtain and relay to weather personnel pilot reports whenever the following is occurring in the Local Flying Area; Clouds below 5,000 feet, Visibility is less than 5 miles, thunderstorms and/or precipitation, icing or turbulence and wind shear.

3.12.6. Request that any PIREPS reported at a minimum contain the following information; Location and extent of phenomena, time observed, phenomena reported, altitude of phenomena, and type aircraft.

3.12.7. Davison Ground Control Approach (GCA) will, on a not to interfere basis, request PIREPS and relay to the weather technician.

3.12.8. Pentagon Heliport Controllers will provide current visibility conditions for the Pentagon Heliport to FBWO forecasters upon request. Forecasters will only request this information during marginal visibility conditions to assist in briefing aircrews to the heliport.

3.12.9. When the actual weather as seen from the tower, differs significantly from that recorded on the JET/AAAS display or FMQ-19 display, tower operators will:

3.12.9.1. Notify the weather technician and record this in the tower's DA Form 3502-R log.

3.12.9.2. If the weather technician cannot be contacted and air traffic dictates; take a limited observation and relay to affected aircraft.

3.12.9.3. Contact the weather technician as soon as possible and relay the limited observation taken.

3.12.9.4. Record the observation in the tower's DA Form 3502-R log.

3.12.9.5. Limited observations contain the following elements: sky condition, visibility, precipitation and convective activity (if applicable), obstruction to visibility, wind, pressure (if known) and remarks (as required to amplify any of the preceding elements).

CHAPTER 4 – FORECASTING SERVICES

4.1. Hours of Operation: Forecasting services are available during the following times.

4.1.1. **Normal Forecasting Hours (Local)** The Forecast section is routinely manned Monday – Friday from 0600L – 2130L. At all other times contact the 15th OWS, Scott AFB, IL. The 15th OWS voice number is DSN 576-9755/9520 and fax number is DSN 576-4855. Weather briefings should be requested no less than 2 hours in advance. ***Note: During normal duty hours, the DAA duty forecaster is the primary source for all weather forecasts, weather briefings, and weather related information.***

4.1.2. The standby forecaster may be recalled by the 15th OWS, AAOG, MDW EOC, Davison Base Operations, or the Fort Belvoir Garrison EOC in the event of an emergency, severe weather threat, or major accident.

4.2. Forecasting Services provided:

4.2.1. Weather Support for Emergencies or Major Accidents:

4.2.1.1. FBWO will provide weather information in the event of aircraft mishaps/in-flight emergencies, natural disasters, or major accidents in the Fort Belvoir military community. Weather support requirements beyond the capabilities of FBWO will be arranged through 15th OWS, and other weather agencies. FBWO does not routinely provide toxic corridor calculations or Chemical Downwind Messages (CDMs), but can provide weather data to the responsible agency, upon request.

4.2.1.2. During normal duty hours, weather forecasting support for emergencies or disasters can be obtained by calling the duty forecaster at 806-7117/7106/7018.

4.2.1.3. Outside of normal forecasting hours, forecasting assistance is immediately attainable through the 15th OWS at DSN 576-9690. FBWO forecasting personnel can be recalled through DAAF Base Operations.

4.2.2. Weather Watches, Warnings, and Advisories. The 15th OWS and FBWO will issue weather warnings, watches and advisories as outlined in Chapter 6 of this plan.

4.2.3. Pilot-to-Metro Service (PMSV). Radio equipment used by the weather station for disseminating weather information to air and ground-based aircraft. FBWO PMSV is available on UHF frequency 139.4 as "DAVISON METRO". Full service PMSV support is available only during forecasting duty hours. Refer to section 4.1 for FBWO forecasting hours.

4.2.4. Pilot Reports (PIREP). An in-flight weather report provided by an aircraft crewmember. Pilot Reports are one of the most important sources of information on current conditions of the atmosphere. PIREPs are used in the Local Area Forecast Program to prepare MEFs, advisories, warnings, and aids in

weather observing. Most importantly, PIREPs are a primary source of information used to brief aircrews.

4.2.4.1. Primary PIREP procedures involve contacting the weather station on PMSV radio.

4.2.4.2. Aircrews should report any operationally hazardous weather such as thunderstorms/lightning, turbulence, icing, wind shear, cloud bases and tops or deviations from the forecast as soon as it is encountered.

4.2.4.3. As an alternative, pilots may pass PIREPs to the tower, Airfield Operations, any other weather station with PMSV capability while airborne, or to the duty forecaster as part of a post-flight briefing.

4.2.5. Flight Weather Briefings: The standard flight weather briefing is documented on DD Form 175-1 (Flight Weather Briefing) or on a Local Weather Briefing Log and details departure, en-route, and destination weather conditions.

4.2.5.1. FBWO provides flight weather briefing requests only during forecasting hours (See 4.1.). All flight weather briefings will be given on a first-come, first-served basis within the priority of duties outlined in Chapter 1. Briefings can be obtained over the telephone by contacting the forecaster at 806-7117/7106/7018, by fax at 806-7314, entering the data through JET portal at https://jetkdaa.belvoir.army.mil, or in person at the forecast counter. For more timely service, aircrews should request briefings in advance.

4.2.5.2. During non-duty hours, briefing requests to the 15th OWS can be made by calling DSN 576-9755, or entering the data in the briefing request form located on the 15th OWS web site https://ows.scott.af.mil/or accessing the Fort Belvoir weather web site at http://belvoir.army.mil/daaf/wx . A minimum of 2 hours lead time is requested by the 15th OWS.

4.2.5.3. For large missions (or deployments) involving many aircraft, briefings should be arranged with at least 48 hours advance notice.

4.2.5.4. Updates are always available upon request.

4.2.5.5. Initial and updates to flight briefings are available over PMSV but not encouraged .

4.2.6. Mission Execution Forecast (MEF): FBWO produces a tailored forecast for DAAF, and the four sectors of the designated local flying area (LFA) and posts it on the World Wide Web (WWW) at http://belvoir.army.mil/daaf/wx NLT 0700L and 1900L Mon-Fri. The MEF is valid for a 12 hour period.

4.2.6.1. **MEF Specification and Amendment Criteria:** The MEF will specify the time of occurrence to the nearest hour, the duration, and the intensity where applicable, certain weather elements or conditions are expected to occur during the valid period of the MEF. In addition, FBWO forecasters will amend the MEF for certain criteria. MEF specification and amendment criteria are documented in

Appendix B of this document. FBWO forecasters will post the amended MEF to WWW at the link in section 4.2.6.

4.2.7. Extended Forecast. 15th OWS produces a 5-Day Forecast for the Fort Belvoir area. The forecast is available 24/7 through the FBWO web site link in section 4.2.6.

4.2.8. Space Weather Support and Services. Space weather analysis and forecast products are produced primarily at the AFWA strategic center and are made available through the normal unclassified and classified weather information dissemination systems. FBWO primary space weather support role is to provide a general forecast identified in the DD-175-1 form and on the locally generated MEF. The general categories of missions/systems affected by space weather are listed in **Appendix C** of this plan.

4.2.9. Alternate Operating Location (AOL). FBWO will establish an AOL in the event the weather office is evacuated (bomb threat, fire, etc.) in order to maintain mission essential support to DAAF. See 4.2.9.2.

4.2.9.1. Customers will be informed of our evacuation and reestablishment of weather support via e-mail or telephonically. At a minimum, FBWO will establish communication from the AOL with:

4.2.9.1.1 Base Operations (806-7225) or their alternate site if they evacuate also.

4.2.9.1.2. 12th AVNBN S-3 (806-7609)

4.2.9.1.3. OSACOM S-3 (806-7065)

4.2.9.1.4. DCANG (806-7092)

4.2.9.1.5. NVG Directorate (806-7220)

4.2.9.1.6. HQ ACC/A3WV (DSN: 574-8456)

4.2.9.1.7. USAGFB IOC (805-4002)

4.2.9.2. **AOL Location.** Currently, the designated AOL is the Air Traffic Control Tower. Phone number: DSN 656-7661, fax DSN 656-7658

4.2.9.3. 15th OWS will assume the following duties until the FBWO resumes operations:

4.2.9.3.1. Perform METWATCH and MISSIONWATCH for FBWO and issue all terminal and flying area weather warnings and advisories to the best of their ability. Since 15th OWS is limited to cloud-to-ground strike data from the National Lightning Detection Network, it does not have the capability to detect or observe other lightning strike occurrences (e.g., cloud-to-cloud lightning).

4.2.9.3.2. MEF/Flight Weather Briefings. The 15th OWS will assume briefing support until the AOL is robust enough to resume briefing (approximately within one hour of evacuation) and conduct MISSIONWATCH for these flights.

4.2.9.4. The weather technician will provide the following services from the AOL:

4.2.9.4.1 Take surface weather observations using the Kestrel, the Manual Observing System (MOS) kit, FMQ-19/JET interface, and disseminate observations via JET, internet, or phone. During manual observing conditions, an observation will be taken within 15 minutes of arriving at the tower containing, at a minimum, prevailing visibility, present weather and obscurations, sky condition, wind direction and speed, temperature and dew-point, and altimeter setting.

4.2.9.4.2. Continue to issue and update MEFs if the capability exists. The MEF will continue to be updated on the WF webpage if possible. If the webpage is inaccessible, the MEF will be faxed or emailed to the respective customers.

4.2.9.4.3. Provide METWATCH for DAAF from the AOL. Weather warnings, watches, and advisories will be disseminated via JET, internet, or telephone to supported agencies.

4.2.9.4.4. Brief aircrews and MISSIONWATCH. Briefings will be conducted at the new location by phone or fax.

4.2.9.5. Timeliness and accuracy of services provided from the AOL may suffer somewhat due to remote location and use of backup equipment.

4.2.10. OWS Back-up Procedures: Upon notification of an OWS communications outage or evacuation, FBWO will assume responsibility for the DAAF TAF and resource protection.

CHAPTER 5 – OBSERVING SERVICES

5.1. Hours of Operation: The FMQ-19, Automatic Meteorological Station (AMOS), provides a complete weather observation, 24/7.

5.1.1. **Normal Observing Hours (Local):** The FMQ-19 is placed in AUTO mode for a complete weather observation 24/7. However, the FMQ-19 will be augmented (supplemented or backed-up) by a weather technician as required from 0530L – 2130L, Monday through Friday as required by AFMAN15-111, Tables 3.1-3.3.

5.1.2. A qualified weather technician will be on standby status during non-duty hours. They will be available for immediate recall in the event of an emergency, severe weather threat, or major accident.

5.2. Basic Weather Watch: FBWO is manned and equipped to perform a Basic Weather Watch (BWW) at DAAF. The official weather observation point is the FMQ-19 weather sensor site, located on the east side of runway 32, near the touchdown point.

5.2.1. A BWW is defined as a weather watch conducted by a weather technician who, because of other duties or garrison weather station design, cannot monitor the weather continuously.

5.2.2. In addition to taking and disseminating required hourly, or record observations, the BWW observing program requires the technician to recheck the 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:

- Ceiling forms below or decreases to less than 1,500 feet.
- Ceiling dissipates, or increases to equal or exceed 1,500 feet.
- Visibility decreases to less than 3 miles (4800 meters).
- Visibility increases to equal or exceed 3 miles (4800 meters).
- Precipitation (any form).
- Fog.

In addition to the above **minimum requirement**, weather personnel will remain alert for any other changes in weather conditions that will require a SPECI or observation. Weather personnel will also monitor local area observational and forecast products as often as necessary to keep abreast of changes expected to affect their area of responsibility in order to record significant changes in weather conditions and to determine the need for a SPECI or observation. Appendix D provides the requirements for special observations.

5.2.4. In addition to taking required hourly, or record observations, the technician remains alert for any changes in weather conditions which require them to take and disseminate observations as conditions occur that meet special (SPECI) or observation criteria.

5.2.5. Technicians will recheck the weather and if required, will disseminate a new observation when ATC personnel, under the auspices of the Cooperative Weather Watch Program, or other reliable sources report weather conditions significantly different from the last disseminated observation.

5.3. Observing Services Provided:

5.3.1. Technicians will continue to conduct BWW while using FMQ-19 data.

5.3.2. Take, record and disseminate weather observations locally and longline (transmission over worldwide network).

5.3.3. Issue and disseminate weather advisories IAW Chapter 6 of this plan.

5.3.4. Monitor the PMSV radio.

5.3.5. Monitor the status of meteorological equipment, circuits, and report problems to the appropriate repair agencies.

5.4. Cooperative Weather Watch. Davison ATC personnel will implement the CWWP IAW with the Memorandum of Agreement between Davison ATC and FBWO.

5.5. Types of Observations. FBWO disseminates surface weather observations locally to the ATC, GCA, Base Operations, and longline via JET. During a JET outage, observations will be disseminated telephonically to ATC, GCA, Base Operations and longline through the Internet or through another weather station via telephone. There are two types of surface observations.

5.5.1. An Aviation Routine Weather Report (METAR) is a routine hourly observation including standard surface meteorological data. These types of observations are taken between 45 and 59 minutes past each hour and disseminated between 55 and 59 past the hour. Observation of elements will be made as close to the scheduled time of the observation as possible to meet filing deadlines, **but in no case will these observations be started more than 15 minutes** before the scheduled time. Gusts and squalls will be reported if observed within 10 minutes of the actual time of the observation. When conditions are relatively unchanging, evaluate the elements in the following order:

- Elements evaluated outdoors. Before taking observations at night, spend as much time as practicable outside to allow your eyes to become adjusted to the limited light of the nighttime sky.

- Elements evaluated indoors, with **pressure last**.

These observations are transmitted locally and long-line. See **Appendix D** for an explanation of METAR code.

5.5.2. A Non-Routine (Special) Aviation Weather Report (SPECI) is an unscheduled observation taken when any of the criteria in **Appendix D** are observed. SPECIs will be disseminated as quickly as possible after observed weather phenomenon. These observations are transmitted locally and longline.

5.6. Observation Site Limitations.

5.6.1. The official point of observation is the FMQ-19 sensor. Using back-up procedures (manual mode), ridges and tree lines restrict visibility to 3 miles or less in all directions. Buildings and trees from the SSW to the WNW restrict visibility to less than ½ mile at the observation point.

5.6.2. The single airfield wind sensor is located just off the approach end of runway 32. Due to thick forest growth in close proximity to the sensor, significant wind blockage occurs when the prevailing wind direction is from the ENE – SW (030-240). Although wind speeds reported, accurately reflect actual touchdown conditions, they may not adequately describe airfield conditions overall.

CHAPTER 6 – WEATHER WATCHES, WARNINGS, AND ADVISORIES

6.1. Weather Watches and Warnings.

6.1.1. **Weather Watches and Warnings**. Weather watches and warnings are special notices provided to supported agencies when an established weather condition of such intensity as to pose a hazard to life or property is occurring or is expected to occur. Furthermore, these notices usually require the supported agency to take protective actions. The 15th OWS issues weather watches and warnings for Fort Belvoir and DAAF on a 24/7 basis.

6.2. Terms Defined

6.2.1. **Weather Watch (WATCH)**. A weather watch is a special notice provided to supported customers that alerts them of a potential for weather conditions of such intensity as to pose a hazard to life or property for which the customer must take protective action.

6.2.2. **Weather Warning (WW).** A weather warning is a special notice provided to supported customers that alert them to weather conditions of such intensity as to pose a hazard to life or property.

6.2.3. **Observed Weather Warning or Advisory (OWW or OWA).** A special notice provided to supported customers when an established weather condition that could affect its operations is occurring. An OWW or OWA is an observed condition; therefore, it is issued with no lead-time.

6.2.4. **Desired Lead-Time (DLT):** The advance notice a supported agency requires before the onset of a particular weather phenomenon. It does not apply to weather watches, with one exception: there is a desired lead time requirement of 30 minutes from the time a Lightning Watch is issued until the observed Lightning Warning is issued.

6.3. **Weather Watch and Warning Procedures for DAAF and Fort Belvoir.** Weather watches/warnings issued by the 15th OWS are valid for a five nautical mile radius from the center of the airfield. Watches and warnings are referenced by month, shift, and a number to sequentially identify them by month (e.g., WW 08-A07 would be the seventh weather warning issued by the "A" shift during August). Weather watches/warnings will include criteria and a valid time in both Universal Time Coordinated (UTC) and local time. Only one watch or warning will be in effect at any time. If warnings need to be upgraded or downgraded, a new warning will supersede the current warning. Weather warnings may be extended without issuing a new warning provided no other changes are required. If a warning is in effect and the threat ceases to exist, the warning will be canceled.

6.4.1. **Standardized Watch and Warning Criteria for DAAF**

CRITERIA	WATCH	WARNING
1. Tornado within 5 NM*	As potential warrants	15 min
2. Severe Thunderstorms: Hail ≥ 1/2 inch and/or Surface Winds ≥ 45 Knots *	As potential warrants	60 min
3. Moderate Thunderstorms: Hail ≥ 1/4 but < 1/2 inch and/or Surface Winds ≥ 35 Knots but < 45 knots *	N/A	60 min
4. Non-convective surface winds ≥ 45 Knots *	As potential warrants	60 min
5. Surface winds 35-44 Knots *	N/A	60 min
6. Freezing Precipitation	As potential warrants	60 min
7. Snow/Rain accumulation ≥ 2 in 12 hours or less *	As potential warrants	60 min
8. Lightning w/in 5NM of the airfield[1]	30 Min	Observed

6.4.1.1. * The 15th OWS will specify the magnitude of each event. For example, the operational threshold for a wind event is ≥ 45 knots, the OWS will issue a watch/warning and specify the peak wind speed for the event, such as peak gust 65 knots. Likewise, the OWS will specify maximum hail size and rain/snow accumulations meeting or exceeding the threshold.

6.4.1.2. FBWO may issue weather warnings for forecast phenomena when imminent weather conditions pose a hazard to life and property, and notification to the 15th OWS is not practical or communications do not allow.

6.4.1.3. Note [1]. FBWO will issue a warning for Lightning within 5NM of DAAF when the duty weather technician observes lightning within 5NM. The observed Lightning warning will be issued to the airfield Monday through Friday from the hours of 0530L – 2130L.

6.4.2. **Severe Weather Action Plan (SWAP).** Certain weather conditions endanger life or property, pose a safety hazard, or adversely impact mission operations. During this time, FBWO will provide

enhanced support to DAAF and the 15th OWS. FBWO will implement the SWAP when certain weather thresholds are occurring or expected to occur.

6.4.2.1. FBWO will implement the SWAP when the 15th OWS issues a weather watch or warning for the following criteria:

6.4.2.1.1. Tornadoes

6.4.2.1.2. Hail ≥ 3/4 in

6.4.2.1.3. Surface winds ≥ 50 Knots

6.4.2.2. The Weather Station Manager and/or Assistant Weather Station Manager will activate the SWAP upon determination of the threat for severe weather at DAAF. The standby forecaster will remain on duty and provide a BWW and MBWW for DAAF until the threat potential has passed or until released by the Weather Station Manager. A standby forecaster is always on call to analyze weather threats and determine if SWAP is required.

6.4.2.3. The Weather Station Manager and/or Assistant Weather Station Manager will contact Base Operations personnel when the SWAP is implemented and keep them informed of all pertinent weather changes until the severe weather threat has passed.

6.4.2.4. **SWAP Criteria and Customer Response**

SWAP Criteria	Customer Action
Tornadoes	Operations cease Personnel take cover Hanger/tie down aircraft as time permits
Hail ≥ 3/4 inch	Hanger aircraft Personnel restricted indoors
Winds ≥ 50 knots	Aircraft tied down/hangered Hanger doors secured Loose items secured

6.4.3. Dissemination Procedures.

6.4.3.1. **DAAF**

6.4.3.1.1. **Notification Procedures:** The 15th OWS issues weather watches and warnings by IWWC's through JET/JET, e-mail, or phone, and contacts FBWO during duty hours. When FBWO is closed, the 15th OWS will notify DAAF Base Operations via phone and e-mail and Base Operations will complete the secondary notifications.

Customer	Primary notification during duty hours	Secondary notification during duty hours	Primary notification during non-duty hours
Tower	AAAS/JET	Phone call from FBWO	N/A (closed)
Base Ops	E-mail from 15th OWS	Phone call from FBWO	15th OWS
ADF-E	Phone call from 15th OWS	Phone call from FBWO	Phone call from Base Ops
DPTMS(IOC)	E-mail from 15th OWS	Phone call from FBWO	Phone call from Base Ops
SECURITY	Phone call from 15th OWS	Phone call from FBWO	Phone call from Base Ops

6.4.3.2. **Unit Actions**. It is the responsibility of each unit to implement procedures to protect resources and personnel when watches and warnings are issued. Units should develop appropriate notification procedures and ensure their notifying agency maintains a list of current phone numbers and points of contact.

6.4.3.3. **Post Event Reporting**. FBWO will produce an Item of Interest (IOI) whenever the following criteria occur:

6.4.3.3.1. Weather-related Class A, B, or C Mishaps.

6.4.3.3.2. Significant weather occurrences (e.g., tornadoes, winds GTE 50 kts, hail GTE 3/4 inch, lightning strikes, or snowstorms) that result in casualties and/or property damage (provide following information to ACC/A3WO, FB IOC, 18th WS, 15th OWS, and AAOG DAAF DIV – ASAP):

- Actual severe weather experienced and location
- Forecast valid at the time of occurrence to include any watches or warnings issued (include actual and desired lead time).
- The operational status of meteorological equipment (i.e. radar, wind sensors, etc.) at the time of event.
- Any other details you feel are pertinent.

6.4.3.3.4. Aircraft evacuations to one or more bases due to tropical cyclones or flooding. .

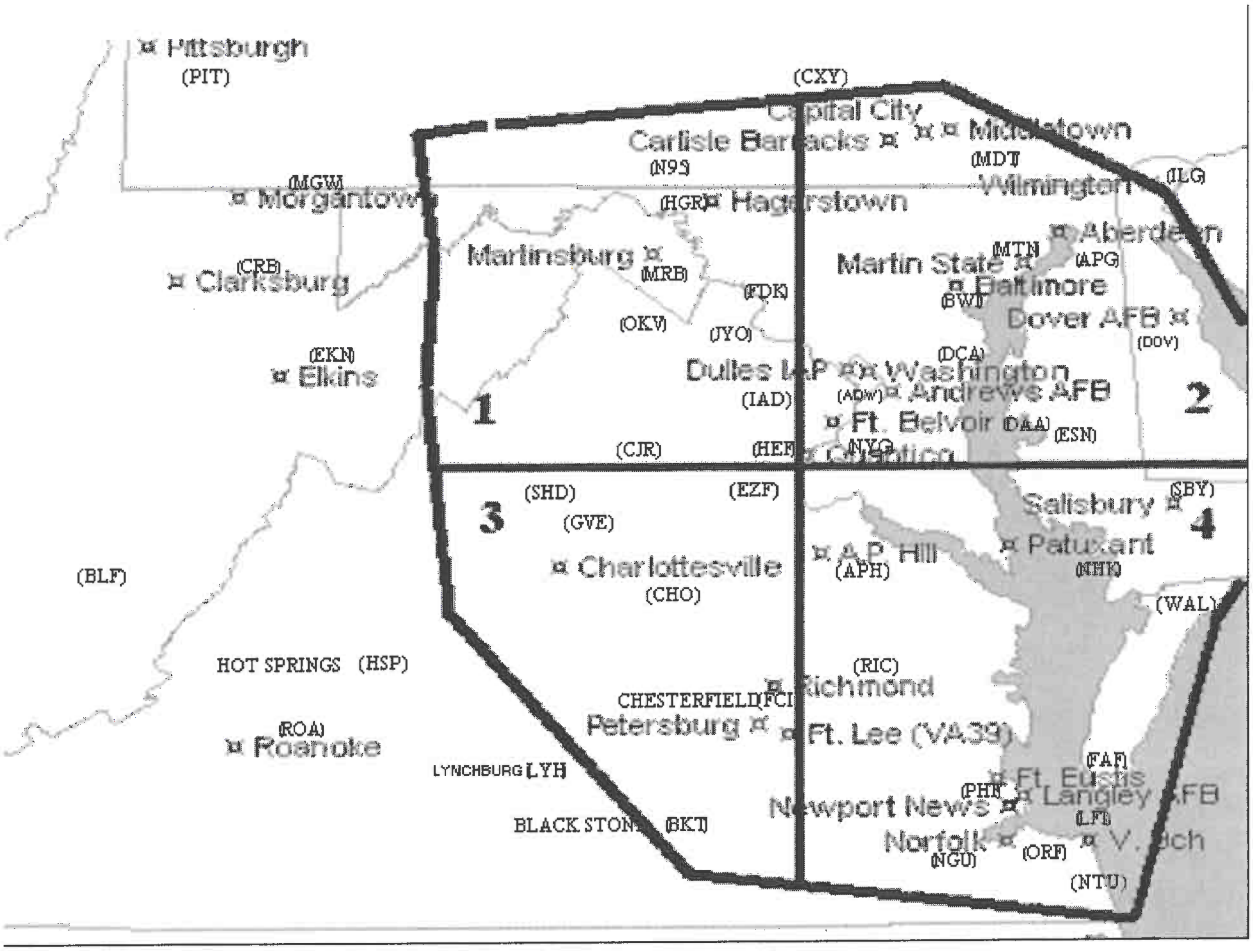
6.4.3.3.5. Natural disasters such as earthquakes, floods, and volcanic eruptions that result in casualties and/or property damage.

6.4.3.3.6. Weather-related airborne incidents

6.5. DAAF Terminal Weather Advisories: FBWO conducts terminal weather advisory support for DAAF during scheduled airfield hours. Since weather advisory support is geared toward aviation operations, advisories are not issued when the FBWO is closed. All advisories issued by FBWO are observed advisories; therefore, no lead-time is required. Weather Advisories are valid for a five nautical mile radius from the center of DAAF. Advisories are issued by the weather technician via JET. An observed advisory is issued on the first occurrence of the designated criteria and is cancelled when the phenomena is no longer observed.

CRITERIA	LEAD TIMES
Gust Spread ≥ 15 knots	Observed
Surface winds 30 knots or greater	Observed
Crosswind component of 21 knots or greater	Observed
Wind Chill equal to or less than 26F	Observed
Low Level Wind Shear	Observed

6.6. DAAF Local Flying Area (LFA) Weather Advisories: FBWO conducts weather advisory support for DAAF during scheduled airfield hours. Since weather advisory support is geared toward aviation operations, advisories are not issued when the airfield is closed. All advisories issued by FBWO are observed advisories; therefore, no lead-time is required. Weather advisories are for the designated Local Flying Area. However with vastly different coverage of LFA within the Davison Army Aviation Agencies, the Local Flying Area for the weather advisories will be described as that airspace overlaying the continental limits of the United States, generally within 100NM of DAAF, and separated into four sectors. Advisories are issued by the forecaster using Satellite imagery, Doppler radar, PIREPS, surface and upper air Observations. An observed advisory is issued on the first occurrence of the designated criteria and is cancelled when the phenomena is no longer observed.



CRITERIA	LEAD TIMES
Thunderstorms in the Local Flying Area (LFA)	Observed
Moderate or greater turbulence, surface to 10,000 feet in the Local Flying Area (LFA). CAT II ACFT. **NOTE:** If **LLWS** is observed, issue turbulence advisory and spell out "Low Level Wind Shear" as a remark in the advisory.	Observed
Icing of any intensity in the Local Flying Area (LFA) surface to 10,000 feet.	Observed

6.7. OWS Back-up Procedures: Upon notification of an OWS communications outage or evacuation, FBWO will assume responsibility for DAAF resource protection until the 15th OWS is back to normal ops.

CHAPTER 7 – METEOROLOGICAL EQUIPMENT AND COMMUNICATIONS

7.1. Meteorological Equipment: The following chapter provides details on all FBWO weather equipment and outage procedures.

7.2. Equipment and Outage Procedures.

7.2.1. **NEXRAD OPUP.** A desk top weather radar system, directly linked to the NWS radar site at Sterling VA. The system provides a real time weather radar data capabilty.

7.2.1.1. Operational Effect of Outage

Outage affecting	Then the impact is:	And the mission impact is:	Agency responsible for the maintenance of equipment:	Backup
Any Outage	Significant	Unable to receive weather radar data	NWS ROC Help Desk 800-643-3363	Internet

7.2.2. **JET.** JET is the primary means by which FBWO forecasters retrieve and manipulate graphic and alphanumeric data, format weather observations and advisories, and transmit observations and advisories to local and worldwide customers. The 15th OWS generates the KDAA TAF and weather warnings, watches and advisories using IWWC's and transmits them via JET. Data display terminals located in the ATC Tower, and GCA and are linked to the weather office central processor and display weather information critical to flying operations.

7.2.2.1. Operational Effect of Outage

Outage affecting	Then the impact is:	And the mission impact is:	Agency responsible for the maintenance of equipment:	Backup
NIPERnet	Significant	Unable to transmit weather observations, watches, warnings, and advisories	FB-NEC help desk 703-704-1644	Telephone Fax
Terminals in ATC, GCA,	Significant	Unable to receive weather observations, watches, warnings, and advisories	AFWA Help Desk 312-271-2586	Telephone Internet Fax

Outage affecting	Then the impact is:	And the mission impact is:	Agency responsible for the maintenance of equipment:	Backup
Central processor	Significant	Unable to format, transmit, or view weather observations, watches, warnings, advisories, graphics or alphanumeric.	AFWA Help Desk 312-271-2586	Telephone Internet Fax

7.2.3. **AN/FMQ-19 Cloud Height Set**. The FMQ-19 measures and displays readouts of cloud heights and vertical visibility up to 25,000 ft and is located near the touchdown point of runway 32.

7.2.3.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is:	Agency responsible for the maintenance of equipment:	Backup
Any outage	Minimal	Ceilings will be estimated by other available resources	Andrews METNAV Weather Maintenance DSN 858-5855	None

7.2.4. **AN/FMQ-19**. Wind Speed and Direction. The AN/FMQ-19 continuously measures, displays, and records wind direction, speed, gust, and variability. Wind displays are located in the weather station, ATC Tower, the GCA, and Airfield Operations. The sensor is located near the touchdown point of runway 32.

7.2.4.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment:	Backup
Sensor	Significant	Unable to record and display current wind data. Information obtained from this equipment is essential to safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Kestral 4000

7.2.5. **AN/FMQ-19 Temperature/Dew Point.** The AN/FMQ-19 measures and transmits temperature and dew point readings to a digital display in the weather station. The sensor is located near the touchdown point of runway 32.

7.2.5.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
Temp / Dew Point sensor and digital display	Minimal	Temperature data estimated by other available resources	Andrews METNAV Weather Maintenance DSN 858-5855	Kestral 4000

7.2.6. **AN/FMQ-19 Barometer.** The FMQ-19 has three barometers and is the primary pressure-measuring instrument and displays altimeter setting and station pressure. The sensor is located near the touchdown point of runway 32 and data is displayed in the weather office and ATC.

7.2.6.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Kestral 4000

7.2.7. **Precipitation Gauge AN/FMQ-19.** The Precipitation gauge automatically measures liquid precipitations and transmits that data to the weather station. The gauge is located near the touchdown point of runway 32.

7.2.7.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
Any outage	Minimal	Measurements obtained by other available resources	Andrews METNAV Weather Maintenance DSN 858-5855	ML-217

7.2.8. **AN/FMQ-19 Ambient Light Sensor.** The FMQ-19 Ambient Light Sensor provides accurate and reliable ambient light data for runway visual range calculations. The sensor is located near the touchdown point of runway 32.

7.2.8.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 Ambient Light Sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	None

7.2.9. **AN/FMQ-19 Visibility Sensor.** The FMQ-19 visibility sensor provides accurate and reliable visibility data for runway visual range calculations. The sensor is located near the touchdown point runway 32.

7.2.9.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Manual Observation

7.2.10. **AN/FMQ-19 Freezing Rain Sensor.** The FMQ-19 Freezing rain sensor detects freezing precipitation and is located near the touchdown point of runway 32.

7.2.10.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Manual Observation

7.2.11. **AN/FMQ-19 Present Weather Sensor.** The FMQ-19 PRECIP ID detects precipitation in the atmosphere, including rain and snow. However, system does not detects hail, virga, sector visibility, and cloud types. The sensor is located near the touchdown point of runway 32.

7.2.11.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Manual Observation

7.2.12. **AN/FMQ-19 Lightning Detector.** The FMQ-19 Lightning Detector is a single point, omni-directional system that detects the occurrence of and differentiates between cloud to cloud and cloud to ground lightning discharges up to 30 nautical miles. The sensor is located near the touchdown point to runway 32.

7.2.12.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
FMQ-19 sensor	Significant	Information obtained from this equipment is essential for safe flight operations	Andrews METNAV Weather Maintenance DSN 858-5855	Internet

7.2.13. **PMSV Pilot to Metro Radio.** The weather station operates a UHF radio dedicated to supporting airborne aircraft.

7.2.13.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
Any outage	Minimal	Communication established via other equipment	ATC Maintenance	Radio in Base Ops

7.3. **Communications.** Weather is a dynamic phenomenon that often changes rapidly. Consequently, weather information is highly perishable. The weather office requires robust communications capability if it is going to be value-added to the Army mission. Traditionally, the Air Force relied on a variety of stove-piped communications capabilities to meet garrison and tactical needs. However, DOD and Combatant Commanders are mandating the use of common-user communications (CuC) such as NIPRNET, SIPRNET, GBS, etc. Furthermore, under the OWS concept, CWT's rely on a robust reach-back capability to retrieve required forecast products. The Air Force is responsible for providing weather communications to the Army interface point. From this point, the Army assumes responsibility for providing data transmission to FBWO.

7.3.1. **Telephone and/or Telefax lines.** In the event the telephone or telefax lines are inoperative, weather support may be severely delayed or degraded during this outage.

7.3.1.1. Operational Effect of Outage

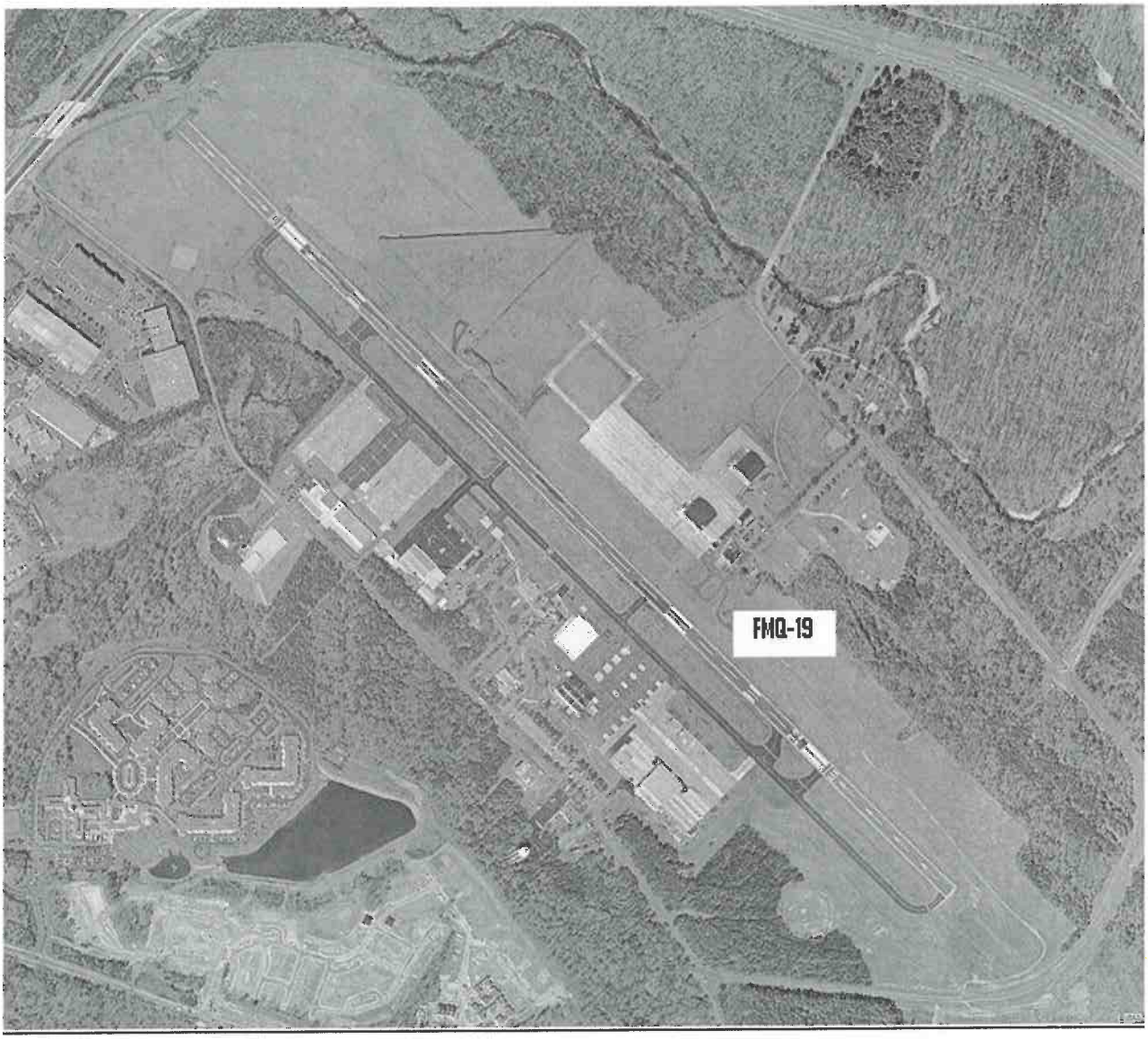
Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
Phone/Fax - Any outage	Significant	Weather support to base and remote customers is degraded	AAOG/12th AVN BN IMO	Internet

7.3.2. **Internet Connectivity.** In conjunction with JET, the Internet is a prime source for weather information and is our first back-up option.

7.3.2.1. Operational Effect of Outage

Outage affecting	Then the impact is	And the mission impact is	Agency responsible for the maintenance of equipment	Backup
Any outage	Significant	Weather support to all customers is severely degraded	AAOG IMO / FB-NEC	Telephone Fax

APPENDIX A – AIRFIELD DIAGRAM AND WEATHER EQUIPMENT LOCATION



APPENDIX B - MEF SPECIFICATION AND AMENDMENT CRITERIA

1. DAAF

1.1. **Amendment Criteria.**

1.1.1. **Ceiling and Visibility**. The ceiling and/or visibility is observed or later forecast to change category:

1.1.1.1. GTE 2500 feet/RWY 14 or 2000 feet/RWY 32 (VFR flight plan minimum for practice approaches)

1.1.1.2. GTE 1000 feet / 3 miles and LT 2000 feet (VFR/IFR thresholds)

1.1.1.3. GTE 500 feet / 2 miles and LT 1000 feet / 3 miles (Special VFR)

1.1.1.4. GTE 300 feet / 1 miles and LT 500 feet / 2 miles

1.1.1.5. LT 300 feet / 1 miles (lowest published airfield landing minimum)

1.1.2. **Turbulence and Icing**. The beginning or ending of any icing, and/or moderate or greater turbulence for CAT II Aircraft (moderate turbulence for CAT II becomes moderate occasional severe for CAT I) not associated with thunderstorms, from the surface to 10,000 feet not specified in the forecast or forecast in the MEF but no longer expected to occur in the forecast period.

1.1.3. **Wind Shear**. The beginning or ending of non-convective low-level wind shear feet not specified in the forecast or forecast in the MEF but no longer expected to occur in the forecast period.

1.1.4. **Weather Watch, Warning or Advisory**. Any weather watch, warning or advisory criteria. See Chapter 6 of this plan for watch, warning and advisory criteria.

1.1.5.1. **Wind.** Predominant wind or gust is greater than 20, 30, 35, or 45 knots and different from the forecast wind speed/gust.

1.1.5.2. Direction change of 30 degrees or more when the predominant wind speed or gusts are expected to be greater than 15 knots.

1.1.5.3. Crosswind greater than 25 knots.

1.1.5.4. Gust spread greater than equal to 15 knots.

1.1.6. **Precipitation When:**

1.1.6.1. Un-forecasted freezing precipitation begins or ends.

1.1.6.2. Precipitation occurrence impacts flight operations/safety.

1.1.6.2 The beginning or ending of the precipitation causes a weather warning or weather advisory to be issued, canceled, or amended.

NOTE: Amend the MEF for Lightning **Watch** (30 minutes DLT) also. It is not required to amend for the Observed Lightning Warning if a watch is in affect and has been amended for. (If a lightning occurs unexpectedly, issue the observed warning, then amend and issue a watch, if necessary.)

APPENDIX C – FORT BELVOIR WEATHER THRESHOLDS

Fort Belvoir Weather Operations **Fort Belvoir VA**

Mission Thresholds	U/VH-60	C-26	UH-1	UC-35	OH-58/UH- 72	C-12
Cig < 1500 ft (night)			x			
Cig < 1000 ft	x	x	x	x	x	x
Cig < 700 ft	x				x	
Cig < 600 ft					x	
Cig < 500 ft	x		x		x	
Cig < 400 ft		x		x		x
Cig < 300 ft	x		x		x	
Vis < 5 SM (night)			x			
Vis < 3 SM	x	x	x	x	x	x
Vis < 2 SM		x		x	x	x
Vis < 1 SM	x	x	x	x		x
Wind > 15 kts					x	
Wind > 20 kts	x					
Wind > 25 kts					x	
Wind > 30 kts			x			
Wind > 35 kts					x	
Wind > 45 kts	x	x		x		x
Gust spread >= 15 kts			x		x	
Turbc >= MDT	x		x		x	
Turbc >= SVR	x	x		x		x
Any Icing					x	
Icing >= MDT	x		x		x	
Icing >= SVR	x	x		x		x
Launch/Recovery Thresholds	**U/VH-60**	**C-26**	**UH-1**	**UC-35**	**OH-58/UH-72**	**C-12**
Crosswind > 25 kts		x				x
Wind > 30 kts			x			
Wind > 35 kts					x	
Wind > 45 kts	x	x		x		x
Gust spread >= 15 kts			x		x	

APPENDIX D – SPECIAL (SPECI) OBSERVATION CRITERIA

1. SPECIs are taken for the criteria listed below.

1.1. Ceiling. If ceiling dissipates or drops below, increases to equal, or rises above:

1.1.1. 3000 feet Air Force Manual 15-111 (AFMAN15-111)

1.1.2. 2000 feet Air Force Instruction 11-202V3 (AFI 11-202V3)

1.1.3. 1500 feet (AFMAN15-111)

1.1.4. 1000 feet (AFMAN15-111)

1.1.5. 800 feet (AFMAN15-111)

1.1.6. 700 feet (FLIP)

1.1.7. 600 feet (FLIP)

1.1.8. 500 feet (AFMAN15-111)

1.1.9. 400 feet (FLIP)

1.1.10. 300 feet (FLIP)

1.1.11. 200 feet Army Regulation 95-1 (AR95-1)

1.1.12. 100 feet (AR95-1)

1.2. Clouds or Obscuring Phenomena. Clouds or obscuring phenomena aloft first appear below 600 feet and none are currently being reported.

1.3. Prevailing Surface. Surface visibility drops below, increases to equal or exceed:

1.3.1. 3 miles (AFMAN15-111)

1.3.2. 2 ¼ mile (FLIP)

1.3.3. 2 miles (AFMAN15-111)

1.3.4. 1 ¾ mile (FLIP)

1.3.5. 1 ½ mile (FLIP)

1.3.6. 1 ¼ mile (FLIP)

1.3.7. 1 mile (AFMAN15-111)

1.3.8. ¾ mile (FLIP)

1.3.9. ½ mile (AR95-1)

1.3.10. ¼ mile (AR-95-1)

1.4. Tornado. Tornado or funnel cloud is observed or disappears from sight.

1.5. Thunderstorm. A thunderstorm begins or ends. Note: a SPECI is not required to report a new thunderstorm if one is already being reported. The end of a thunderstorm is noted as a SPECI 15 minutes after the last occurrence of conditions meeting thunderstorm criteria.

1.6. Precipitation. Any precipitation begins or ends. Freezing precipitation, hail, or ice pellets begin, end, change intensity or change type (e.g. freezing precipitation to snow or rain, rain to freezing rain).

1.7. Wind.

1.7.1. **Wind Shift:** Any direction changes by 45 degrees or more in less than 15 minutes with sustained winds or gusts of 10 knots or more throughout the wind shift.

1.8. Miscellaneous.

1.8.1. Any meteorological condition, which in the opinion of the observer, is critical to the safety of aircraft operations.

1.9. A single element SPECI will be taken when a delay in reporting all elements of the SPECI would cause an immediate threat to life or property, for example, "TORNADO SW MOV NE".

1.10. Resumption of observing services. The observer will take, disseminate, and record a SPECI observation within 15 minutes after returning to duty following a break in hourly coverage if a record observation was not filed during that 15-minute period.

1.11. RVR; when the prevailing visibility conditions for reporting RVR (1 mile or less and/or RVR is 6000 feet or less) are first observed.

1.11.1. The RVR for the active runway decreases to less than or, if below increases to equal or exceed 6000 feet, 5000 feet, 4000 feet, 2400 feet, 2000 feet, and 1200 feet.

1.11.2. The prevailing visibility conditions for reporting RVR are observed to no longer exist.

1.12. **Squall:** When squalls occur.

1.13. **Volcanic Eruption:** Eruption or volcanic ash cloud first noted.

2. Local Observations during manual observation mode (disseminated locally only).

2.1. Made only for a significant operational event or weather changes significant to local operations. This observation is disseminated to *base agencies only*. Criteria for taking a local observation are:

2.1.1. **Aircraft mishap** in local area.

2.1.2. **In flight and ground emergencies.** Record the IFE or GE and time on AF Form 3813 in Col 90.

3. METAR Code.

METAR KDAA 211755Z 25015G30KT 210V290 3SM R32/4000 BR OVC002 17/16 A2984 RMK AO2A SLP034 P0000 60001 70022 T01720163 10172 20146 51011	
METAR	Refers to a scheduled observation taken between 55-59 minutes past the hour (also referred to a routine ***hourly*** observation).
KDAA	The 4-character ICAO identifier that follows the report type is the location identifier
211755Z	The 7-character group following the identifier is the date and time of issuance. The first two digits are the date; the last four digits are the time (UTC). In this example, 21 is the date of the month, 1755 is the time of issuance, "Z" is the UTC designator.
25015G30KT	Wind direction to the nearest 10 degrees and speed in knots. Therefore, 250 degrees is the direction (true), 15 kts is the sustained wind speed and 30 kts is the gust.
210V290	A wind variability group will be reported, if the wind is variable by 60 degrees and the speed is greater than 6 knots. This remark will contain the extremes of the wind directions, separated by V.
3SM	Prevailing visibility. Prevailing visibility is the greatest horizontal visibility observed throughout at least half the horizon circle, and is not necessarily continuous.
R32/4000	Runway Visual Range follows the visibility and begins with the letter "R." The runway heading will follow the "R," and in this example, "32" represents runway 32. The last four digits report the visibility in FEET.
BR	If there is any precipitation or obstruction to visibility, it will be found in the group of data following the visibility. The absence of weather or an obscuration group indicates that neither phenomenon is occurring at the time of the observation. In this example, "BR" represents "Fog or Mist."
OVC002	Cloud height is always reported in hundreds of feet AGL. Add two zeros to the value given. In this example, 002 represents the value "200" feet AGL. Sky coverage (eighths): • SKC Sky clear • FEW < 2 • SCT 3-4

	• BKN 5-7 • OVC 8
17/16	The group following the sky condition will be the temperature and dew point information in degrees Celsius. In this example, the first two digits 17 are the temperature in degrees Celsius. The second two digits or 16 is the dew point in degrees Celsius. An "M" in the temperature field means "minus" or below zero.
A2984	The 5-character group beginning with the "A," following the temperature/dew point group, is the altimeter setting in inches and hundredths of an inch of mercury. In this example, A2984 represents 29.84 inches of mercury.
AO2A	AO2 = automated unit with no augmentation, AO2A = automated unit with manual augmentation
SLP034	RMK refers to the Remarks section. Remarks may be encoded or in plain language and will contain any supplementary data. In this example, the remark SLP is the sea level pressure in milibars (hectopascals) to the nearest tenth
P0000	Hourly precip in hundredths of an inch
60001	3 and 6 hourly precip amounts in tens, units, tenths, hundreths
70022	24 hour precip total
T01720163	Hourly Temp and Dewpoint
10172	6 hour MAX temp in tens, units and tenths
20146	6 hour MIN temp in tens, units and tenths
51011	3-hour pressure tendency

APPENDIX E – HURRICANE SERVICES

1. General. The National Hurricane Center (NHC) issues official hurricane forecasts and related information for tropical depressions, tropical storms and hurricane intensities. These forecasts are issued in the form of marine and public advisories. Official track forecasts are relayed verbatim to supported agencies. Hurricane wind forecasts are provided by the 15th OWS and FBWO relays this forecast to our customers for HURCON consideration. The 48 hour and 72 hour forecast position and wind forecast contain a high degree of uncertainty and are subject to change.

2. Hurricane Conditions (HURCON). HURCONs report the onset of winds of 50 knots or greater at specific time intervals. Table Drops below, increases to equal, or rises above:

HURCON	WINDS	TIME PERIOD
4	Winds greater than 50 knots are possible	Within 72 hours
3	Winds greater than 50 knots are possible	Within 48 hours
2	Winds greater than 50 knots are expected	Within 24 hours
1	Winds greater than 50 knots are expected	Within 12 hours

NOTE: HURCONS ARE SET BY THE AAOG COMMANDER

3. Dissemination of Tropical weather information. Whenever a tropical storm or hurricane is within 1000nm of Washington DC, FBWO will generate an e-mail advising customers of the location, intensity and movement of the system. Daily e-mails will continue during normal working hours or until the storm is no longer a threat. HURCON recommendations will be made to the DAAF Manager. Once the AAOG Commander has set a HURCON, airfield management and tenants will be briefed for potential aircraft evacuation.

APPENDIX F - SPACE WEATHER ANALYSES, FORECAST, ALERTS, AND WARNINGS

Mission Area	AFWA Product	Description
High-Frequency (HF) Communications and other applications using over-the-horizon HF radio waves	Regional ionospheric analyses; issued four times daily on JAAWIN	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	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 upon request of customer/user	Identifies maximum and minimum useable 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 for selected global locations	Identifies areas where user-defined HF signals from a user-defined point location are most likely to have greatest strength
	Short Wave Fading Advisory; issued via AWN, fax, phone, and e-mail when a space weather disturbance suddenly degrades HF conditions	Identifies the HF frequency ranges and locations that are affected by an observed sudden disturbance and then forecasts the duration and magnitude of that degradation
	Polar Cap Absorption Advisory; issued via AWN, fax, phone, and e-mail when HF conditions have been severely degraded primarily at high latitudes due to a space weather disturbance	Identifies HF frequency ranges and locations affected by an observed sudden disturbance and forecasts duration and magnitude of that degradation
Ultra High Frequency Satellite Communications (UHF SATCOM)	Regional 6-hr ionospheric analyses; issued four times daily on JAAWIN	Identifies locations where space weather conditions may have caused degradation in UHF SATCOM
	Regional 6-hr ionospheric forecasts; issued four times daily on JAAWIN	Identifies locations where space weather conditions are expected to degrade UHF SATCOM

	Regional nowcasts of ionospheric conditions; issued for selected global regions every 30 minutes on JAAWIN	Identifies locations where space weather conditions are currently capable of degrading certain UHF SATCOM users
GPS Navigation	Regional nowcasts of single-frequency GPS accuracy; issued every hour on JAAWIN	Identifies estimates of current single-frequency GPS accuracy based on calculations that take into account the ionospheric-induced errors

Appendix G – CUSTOMER RESPONSE MATRIX

These impacts to Fort Belvoir aviation and non-aviation assets are generally aligned with standard weather warning/advisory criteria. Additional impacts can be found in Army Regulation 95-1 and Fort Belvoir Regulation (FBR) 115-1.

Weather Phenomena	Impact	Customer Action
Tornado	Personal injury / property / aircraft/equipment damage.	Seek shelter; recall/ground all aircraft--hangar high-priority aircraft, divert aircraft; man emergency control centers; warn populace; establish severe weather/disaster radio network; man disaster response teams.
Hail ≥ 1/2 inch	Personal injury / property / aircraft/equipment damage.	Seek shelter; recall/ground all aircraft--hangar high-priority aircraft, divert aircraft.
Surface Wind ≥ 45 knots	Personal injury / property / aircraft / equipment damage.	Recall/ground all aircraft--hangar/tie-down aircraft; secure loose equipment; limit outdoor high-risk activities.
Lightning within 5 NM	Lightning strike / static discharge damage--delay of operations.	Cease aviation refueling; Cease all ramp activities to protect personnel; backup generators.
Freezing Precipitation or Heavy Snow (≥ 2 inches w/i 12 hours)	Icing on roads--hazard to driving; icing on aircraft / equipment--delay or curtailment of operations.	Cease flying; hangar or protect aircraft; report runway conditions (runways/ taxiways/ ramps); sand/salt on overpasses and intersections, close roads—limit/restrict post driving.
Hail < 1/2 inch	Possible personal injury/property/ aircraft/equipment damage.	Seek shelter; hangar high-priority aircraft; divert aircraft--increase operational risk assessment.

Weather Phenomena	Impact	Customer Action
Heavy Rain (≥ 2 inches w/i 12 hours)	Flooding (flash flooding)	Restrict vehicle movement (off-road); avoid water crossings--increase operational risk assessment.
Surface Wind ≥ 35 but < 45 knots	Possible property / aircraft / equipment damage.	Consider hangar/tie-down aircraft; secure loose equipment; cease UH-60 start-up operations (45kts); limit outdoor high-risk activities--increase operational risk assessment.
Observed Lightning	Personal injury. Flight Hazard	Avoid thunderstorm areas; limit outdoor activities--increase operational risk assessment.
Low-level Wind Shear (below 2,000 feet)	Flight hazard	Exercise caution on takeoff/landing and low level flight--increase operational risk assessment.
Wind Chill Temperature =/< 26F (-04C)	Personal injury.	Advise post populace; limit outside activities--increase operational risk assessment

Appendix H – REFERENCES, TERMS, and ACRONYMS

1. References:

AFI 10-229	Responding to Severe Weather Events
AFMAN 15-111	Surface Weather Observations
AFMAN 15-124	Meteorological Codes
AFMAN 15-128	Aerospace Weather Operations – Roles and Responsibilities
AFMAN 15-129	Air and Space Weather Operations-Processes and Procedures
AFMAN 37-139	Records Distribution Schedule
AFI 13-204	Functional Management of Airfield Operations Vol. 3
AR 115-10, AFJI 15-157	Weather Support for the U.S. Army
FM 34-81	Weather Support for Army Tactical Operations
FM 34-81-1	Battlefield Weather Effects
Data Page	Between the 15th OWS and FBWO

2. Terms Explained:

2.1. **Joint Environmental Toolkit (JET).** Computer systems used to acquire, process, display, and disseminate weather information. JET receives graphic and alphanumeric weather data over the NIPERnet. Weather data is fed to a central processor located at the weather station. JET is the primary tool used by forecasters to display and manipulate graphic and alphanumeric products, transmit and receive weather observations and forecasts, and disseminate local weather watches, warnings, and advisories. The central processor is linked, via NIPERnet, to the 15TH OWS, the Air Force Weather Agency (AFWA) and the Automated Weather Network (AWN) at Offutt AFB, NE, and to data display terminals located in the ATC Tower, and GCA enabling these agencies access to weather information critical to flying operations.

2.2. **Local and Long line Dissemination.** Weather information is disseminated both locally and longline. Local dissemination is to those airfield customers that have the JET software. Longline dissemination of weather data is via the internet to the Automated Data Network (AWN) in Offutt AFB, Nebraska. Other installations or agencies worldwide, access FBWO weather data via Internet.

2.3. **Meteorological Watch (METWATCH).** The process of monitoring the weather and informing supported agencies when certain established weather conditions that could affect their operations or pose a hazard to property or life are occurring or are expected to occur.

2.4. **Mission Watch (MISSIONWATCH).** The process of continuously monitoring missions, areas, and installations for significant forecast changes. Focus on parent/host unit defined mission-limiting weather thresholds for specific missions. Monitor the weather and inform supported agencies when established weather conditions that could affect operations or pose a hazard to property or life are occurring or are expected to occur.

2.5. **15th Operational Weather Squadron (OWS).** The 15th OWS mission is to provide weather operations and training to fuse accurate, timely, and relevant weather intelligence into every aspect of war-fighter mission planning and execution to ensure effective, safe, and efficient regional and global military operations. Some of the products are as follows: weather watches, warnings, and advisories; Terminal Aerodrome Forecast (TAF); regional and operational-level weather products; mission execution weather products; MISSIONWATCH and flight weather briefings. 15th OWS is organized, trained, and equipped to conduct weather operations and provide weather products and information for Air Force and Army operations in the NE CONUS AOR.

2.6. **Fort Belvoir Weather Operations (FBWO).** The Fort Belvoir mission is to produce fine-scale tailored weather forecast products. Our mission is to conduct timely, accurate, and relevant sortie/mission execution forecast's, MISSIONWATCH, local airfield observing and reporting, and act as "eyes forward" for the OWS. The FBWO is organized, trained, and equipped to conduct weather operations and provide weather products and information to DOD operators and associated agencies at Fort Belvoir.

2.7. **Eyes Forward.** The FBWO technicians will train and conduct as "eyes forward" for OWS forecasters and encourage passing of relevant weather intelligence that may assist in making local forecasts more representative and accurate. Eyes forward yields meaningful meteorological information not contained in coded observations to the servicing OWS and is an integral part of the meteorological watch for an installation or contingency operating location.

3. Acronyms.

AAOG	Army Air Operations Group
ADA	Air Defense Artillery
AFMAN	Air Force Manual
AFWA	Air Force Weather Agency
AHP	Army Heliport
AMIS	Advanced Meteorological Information System
ASB	Aviation Support Battalion
ASG	Area Support Group
ATC	Air Traffic Control
AWW	Area Weather Warning
BOC	Brigade Operations Center
BSB	Base Support Battalion

BWW	Basic Weather Watch
CMTC	Combat Maneuver Training Center
DLT	Desired Lead Time
EWO	Emergency War Order
GPS	Global Positioning System
FALOP	Forward Area Limited Observing Program
FBWO	Fort Belvoir Weather Operations
FLIP	Flight Information Publication
ICAO	International Civil Aviation Organization
JAAWIN	Joint Air Force Army Weather Information Network
MEDEVAC	Medical Evacuation
MEF	Mission Execution Forecast
MEFP	Mission Execution Forecast Process
METAR	Aviation Routine Weather Report
NCWO	NCOIC, Combat Weather Operations
NOTAM	Notice to Airmen
OPREP	Operational Report
OWS	Operational Weather Squadron
PIREP	Pilot Report
PMCS	Preventative Maintenance Checks and Services
PMSV	Pilot-to-Metro Service
SPECI	Non-routine (Special) Aviation Weather Report
SSSC	Self Service Supply Center
SWAP	Severe Weather Action Plan
SWAT	Severe Weather Action Team
SWO	Staff Weather Officer
TAF	Terminal Aerodrome Forecast
TAWS	Target Acquisition Weather Software
TOC	Tactical Operations Center
USAFE	United States Air Forces Europe
USAGFB	United States Army Garrison Fort Belvoir
WA	Weather Advisory
WW	Weather Warning
WATCH	Weather Watch
WF	Weather Flight

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