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DAVIS-MONTHAN AIR FORCE BASE

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Weather

BASE WEATHER SUPPORT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Weather Operations*, with additional guidance from Air Force Instruction (AFI) 15-128, *Weather Force Structure* (and its accompanying Air Combat Command supplement); Air Force Manual (AFMAN) 15-129, *Air and Space Weather Operations*; AFMAN 15-111, *Surface Weather Observations*; AFMAN 15-124, *Meteorological Codes*; and Annex H, HQ ACC OPORD 84-00. It establishes responsibilities and weather support functions and provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather support services; dissemination of information; and reciprocal support. This publication applies to units assigned to the 355th Wing (355 WG), subordinate units and tenant units assigned to or supported by Davis-Monthan Air Force Base (DMAFB). This publication also applies to Air Force Command and Air National Guard units assigned to DMAFB. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional change of command. Request for waivers must be submitted to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW AFI 33-322, Records Management an Information Governance Program, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Contact supporting records managers as required.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Information published in other authoritative documents has been removed. Updates to this publication, including resource protection responsibilities and process, has been accomplished to reflect changes in AFMAN 15-129. Additional updates from the previous version reflect changes to duty priorities and alternate operating location; the transition of responsibility for terminal aerodrome forecasts and weather watches, warnings, and advisories from the 25th Operational Weather Squadron (25 OWS); and further changes and clarifications to existing procedures and agreements with supported units.

Chapter 1

GENERAL INFORMATION

1.1. General. The 355th Operations Support Squadron Weather Flight (355 OSS/OSW, referred throughout this document as the WF) is the official weather information agency at DMAFB and provides weather services to the 355 WG, its subordinate units, and tenant units located at DMAFB.

1.1.1. This instruction establishes requirements for weather support to DMAFB units and the WF's capability to meet those requirements. It also documents reciprocal support requirements and procedures between units and agencies providing support to the WF or receiving support from the WF, to eliminate the need to maintain separate letters of agreement.

1.1.2. This instruction covers daily operations to include exercise and contingency operations. Unless superseded by Emergency War Orders, this instruction will be followed during wartime operations. This instruction does not document emergency actions implemented during natural disasters; these are outlined within the Installation Emergency Management Plan (IEMP).

1.2. Concept of Operations. The WF serves as the single point of contact for weather information for DMAFB and will provide and arrange weather services for units assigned to DMAFB. The WF is responsible for monitoring the terrestrial and space environments surrounding the installation and integrating environmental intelligence into planning and execution processes. The WF will:

1.2.1. Monitor environmental conditions and disseminate surface weather observations.

1.2.2. Issue forecast and observed watches, warnings, and advisories (WWAs).

1.2.3. Produce and disseminate terminal aerodrome forecasts (TAFs).

1.2.4. Produce and disseminate mission weather products (MWPs) to supported units.

1.2.5. Provide mission weather support to transient aircrews upon request.

1.2.6. Provide staff weather services upon request.

1.2.7. Provide climatological weather information upon request.

1.2.8. Alert decision makers to environmental factors which may impact mission execution.

1.2.9. Respond to natural disasters, aircraft emergencies, and significant system outages.

1.3. Duty Priorities. In accordance with AFI 90-802, *Risk Management*, weather personnel will apply the principles of risk management while managing duties of varying levels of priority during periods of increased operations tempo. Weather personnel performing mission-essential tasks, such as observing, flight weather briefing support, or MISSIONWATCH functions, will remain in their work center or designated operating area (e.g., within flying squadrons) to maintain proper support to the installation and/or assets within their areas of responsibility. In accordance with AFMAN 15-129, *Air and Space Weather Operations,* the WF will prioritize weather support in accordance with the duty priorities outlined in Tables **1.1** and **1.2** below.

Table 1.1. 355 OSS/OSW Airfield Services Function (ASF) Duty Priorities

Priority	Duty
1	Perform wartime defense of the duty station.
2	Execute Emergency War Order taskings.
3	Execute evacuation and/or continuity of operations (COOP) plans.
4	Disseminate imminent weather advisories.
5	Respond to in-flight and/or ground emergencies, including aircraft mishaps.
6	Activate and coordinate Severe Weather Action Plan (SWAP) procedures.
7	Provide weather support to the National Airborne Operations Center (NAOC).
8	Provide support to real-world search and rescue (SAR) missions.
9	Respond to Pilot-to-Metro Service (PMSV) contacts.
10	Provide weather information to the Supervisor of Flying (SOF).
11	Disseminate routine and special weather observations.
12	Disseminate urgent pilot reports (PIREPs) and aircraft reports (AIREPs).
13	Disseminate routine PIREPs and AIREPs.
14	Issue, amend, and disseminate terminal aerodrome forecasts (TAFs).
15	Issue, amend, and disseminate other weather products.
16	Collaborate weather products with supported units.
17	Perform meteorological watch (METWATCH) and MISSIONWATCH activities.
18	Provide routine and unscheduled flight weather briefing support.
19	Provide staff weather briefings or non-standard weather products.
20	Accomplish weather functional training.
21	Accomplish administrative tasks.

Table 1.2. 355 OSS/OSW Mission Integration Function (MIF) Duty Priorities

Priority	Duty
1	Perform wartime defense of the duty station.
2	Execute Emergency War Order taskings.
3	Execute evacuation and/or COOP plans.
4	Respond to fighter squadron in-flight/ground emergencies, including aircraft mishaps.
5	Relay imminent weather advisories to fighter squadrons.
6	Relay urgent PIREPs from fighter squadrons to the ASF and 25 OWS.
7	Coordinate SWAP procedures.
8	Prepare mass briefs and/or pre-departure step briefs for supported fighter squadrons.
9	Provide support to real-world search and rescue (SAR) missions.
10	Respond to Pilot-to-Metro Service (PMSV) contacts.
11	Provide weather information to the Supervisor of Flying (SOF).
12	Collaborate weather products with supported units.
13	Perform MISSIONWATCH activities.
14	Provide routine and unscheduled flight weather briefing support.
15	Provide support to the ASF in accordance with ASF duty priorities.
16	Accomplish weather functional training.
17	Accomplish administrative tasks.

Chapter 2

WEATHER FLIGHT OPERATIONS

2.1. General. The WF provides weather support across three overarching functions—airfield services (ASF), mission integration (MIF), and staff integration. These functions are explained in further detail within their respective chapters (Chapters **4**, **5**, and **6**). The WF will provide and coordinate all weather services to supported units in accordance with AFI 15-128, *Weather Force Structure* and AFMAN 15-129, *Air and Space Weather Operations*.

2.2. Operating Locations. The primary operating location for the WF is in the Base Operations facility located at 4360 S. Phoenix St., Building 4820. Mission and staff integration functions may also provide embedded support at other units and/or agencies upon request and coordination with WF leadership.

2.3. Duty Hours and Contact Information. Weather personnel will operate during controlled airfield hours as prescribed in the Flight Information Publication (FLIP). Weather technicians are available at the WF 24 hours a day, 7 days a week. Refer to **Table 2.1** for WF telephone and e-mail contact information.

Table 2.1. WF Contact Information.

Weather Flight Commander	DSN 228-3536 (Commercial area code: 520)
Weather Flight Chief	DSN 228-6012
NCOIC, Airfield Weather Services	DSN 228-3954
NCOIC, Mission Weather Integration	DSN 228-3954
Airfield Support Function	DSN 228-6014 / 3254
Mission Integration Function	DSN 228-6016
Air Traffic Control (ATC) copper line	DSN 228-6011
WF E-mail Organizational Inbox	**355oss.osw-02@us.af.mil**
WF SharePoint	**https://usaf.dps.mil/sites/Davis-Monthan/355OG/355OSS/Weather/**

2.4. Release of Weather Information. The WF is the single point of contact regarding the release of weather information specific to DMAFB. Weather information will not be released to agencies outside the Department of Defense without authorization from the 355 WG Public Affairs or Judge Advocate offices, the 355 OG/CC or a designated representative. Furthermore, agencies must coordinate with WF leadership prior to coordinating the release of weather information.

2.5. Continuity of Operations (COOP). WF leadership will maintain and regularly review plans to continue operations at an alternate operating location (AOL) if unforeseen circumstances require the evacuation of the primary operating location. These procedures are further explained within **Chapter 10**.

2.6. Pilot-to-Metro Service (PMSV). The ASF duty forecaster will monitor the primary PMSV frequency (239.8 MHz) and will respond to airborne contacts in accordance with established duty priorities detailed in **Table 1.1**.

2.6.1. During short-term PMSV outages, pilots may relay requests through the Supervisor of Flying (SOF) on frequency 327.7 MHz or request a telephone patch to the WF through the 355 WG Command Post on frequency 381.3 MHz or via telephone at DSN 228-7400.

2.6.2. During extended PMSV outages, ATC personnel will refer all weather requests to Luke AFB on frequency 267.4 MHz The WF will coordinate with Airfield Management to update and disseminate a Notice to Air Missions (NOTAM) for this requirement.

2.7. Pilot Report (PIREP) Support. PIREPs provide weather personnel with crucial weather information which is necessary to create accurate weather products and ensure the safety of flight.

2.7.1. All supported flying squadron commanders should maintain an active PIREP program and encourage pilots to relay pertinent weather information to the WF. Likewise, the WF is responsible for requesting current weather information from pilots during PMSV contacts.

2.7.2. In accordance with FAA order JO 7110.65, *Air Traffic Control,* and established duty priorities, the SOF, Terminal Radar Approach Control (TRACON), and ATC personnel are responsible for relaying PIREPs to the WF within 5 minutes of receipt.

2.7.3. The WF will disseminate PIREPs in accordance with established duty priorities listed in **Table 1.1** WF will disseminate urgent reports locally, to the public, and will notify the 25th Operational Weather Squadron (25 OWS) by telephone (DSN: 228-6598 or 6599) or via e-mail (**25.OWS.SDO@us.af.mil**) when pilots report conditions that present an extreme hazard to flight. Urgent PIREP criteria are outlined in AFMAN 15-124, *Meteorological Codes.*

2.8. Post-Mission Analysis and Feedback. In accordance with AFMAN 15-129, units and agencies which regularly utilize the WF for weather support are encouraged to provide feedback. Detailed feedback ensures proper quality assurance and allows WF leadership to identify strengths and weaknesses in positional training programs. Units are encouraged to provide feedback using any of the following means:

2.8.1. E-mailing feedback to the WF Organizational Inbox. (**355oss.osw-02@us.af.mil**)

2.8.2. Contacting WF leadership via telephone. (DSN: 228-6012/3954)

2.8.3. Providing face-to-face feedback following a weather briefing.

2.8.4. SOF end-of-day reports.

Chapter 3

METEOROLOGICAL & COMMUNICATION EQUIPMENT

3.1. General. Weather technicians are available at the WF 24 hours a day, 7 days a week. The ASF duty forecaster is the primary point of contact for observation information. The WF uses a wide range of meteorological and communications equipment to collect and relay timely and accurate weather information to supported units.

3.2. Meteorological Equipment. The WF utilizes a wide range of equipment to determine the current state of the atmosphere and generate forecast products. This section describes the primary and back-up equipment used at DMAFB.

3.2.1. **AN/FMQ-19.** The AN/FMQ-19 system is an Air Force-certified fixed base weather observing system (FBWOS) which consists of an integrated system of meteorological sensors and data automation components which continuously measure environmental conditions. It is the primary system used by the WF to collect surface weather observations at DMAFB.

3.2.1.1. The **primary** system is situated at the southeastern end of the runway (30). This system consists of a full suite of sensors which can sense temperature, humidity, wind direction and speed, pressure, visibility, runway visual range, lightning, cloud heights and coverage, and precipitation.

3.2.1.2. The **secondary** (or *discontinuity*) system is situated at the northwestern end of the runway (12) and consists of a more limited suite of sensors which can only sense wind direction and speed, cloud heights and coverage, and visibility.

3.2.2. **Kestrel 4500/5500.** The Kestrel is a commercial, off-the-shelf handheld weather sensor which is used as a backup system whenever the AN/FMQ-19 system becomes partially or fully inoperable. The Kestrel can collect wind speed, temperature, humidity, and pressure data and can calculate dew point, altimeter, pressure altitude (PA), and density altitude (DA).

3.2.3. **AN/TMQ-53.** The AN/TMQ-53 is a portable system of tripod-mounted meteorological sensors which can be used in more austere environments. The AN/TMQ-53 system is used as a backup system whenever the AN/FMQ-19 system becomes partially or fully inoperable for more than 24 hours. The AN/TMQ-53 system can collect all the information that the primary system would otherwise collect, with the notable exception of runway visual range (RVR). This system is also referred to as the Tactical Meteorological Observing System (TMOS).

3.2.4. **Advanced Micro Weather Sensor (MWS-M625)** . The MWS is a tactical weather sensor that can be deployed in minutes; it has the ability to sense and report cloud height, temperature, pressure, humidity, wind speed, peak winds, wind direction, visibility, dust accumulation, compass reading, precipitation type and amount, lightning distance and lightning frequency.

3.2.5. **Radar software.** The WF uses radar software developed by Gibson Ridge Software, LLC. The software, which consists of two applications—GR2Analyst and GRLevel3—is used to interpret NEXRAD data. Weather personnel use this software to analyze complex radar signatures; obtain detailed data on the location, intensity, and movement of precipitation; and monitor the development and evolution of severe weather conditions such as thunderstorms,

outflow boundaries, tornadoes, and hail. Radar products are used extensively during severe weather events to monitor airfields, ranges, and military operating areas (MOAs).

3.2.6. **Satellite software.** The WF uses satellite imagery software developed by Lockheed Martin called MARK IVB. Weather personnel use this software to collect and analyze real-time imagery from various meteorological satellites, including the Geostationary Operational Environmental Satellite (GOES). MARK IVB is highly configurable and allows forecasters to enhance imagery to analyze detailed information about clouds and moisture in the atmosphere and overlay map data to greatly increase situational awareness in areas where observational data is sparse, such as the vast deserts and mountain ranges of southern Arizona.

3.2.7. **Lightning data.** The WF uses the Air Force Weather Webpage (AFW-WEBS) to collect real-time lightning data. This web portal, which can also be used to collect and analyze a wide range of observational and forecast data, is useful for monitoring thunderstorm activity in areas where observational data is sparse and radar data is limited or blocked by terrain.

3.3. Communications Equipment.

3.3.1. **Joint Environmental Toolkit (JET).** JET is an automated dissemination system (ADS) used by the WF to monitor real-time observational data from the FBWOS and disseminate surface weather observations, TAFs, WWAs, PIREPs, and MWPs. JET is the web interface for a system of communications networks and servers which is used to collect and store data from the FBWOS and disseminate it locally to ATC and TRACON personnel, to the public, and to external agencies.

3.3.2. **Pilot-to-Metro Service (PMSV).** The ASF duty forecaster continuously monitors the PMSV system for weather information relayed from pilots, ATCT (Air Traffic Control Tower), and TRACON personnel. Procedures for PMSV are covered in more detail in paragraphs **2.6** and **2.7**.

3.4. Equipment Limitations.

3.4.1. **AN/FMQ-19.** The AN/FMQ-19 system in use at DMAFB is incapable of automatically reporting all reportable visibility values identified as specification criteria for local landing and circling minima at the airfield. The system can only report visibility increments of **1/4 statute mile** from 0 to 1 3/4 statute miles and increments of **1/2 statute mile** from 2 to 3 statute miles.

3.4.2. **Meteorological Software.** Radar and software used by the WF, along with lightning detections services, require a continuous and stable internet connection. If the primary base network becomes inoperable, the WF will utilize a backup commercial internet connection to access these services.

3.4.3. **JET.** The JET web portal depends on a continuous and stable internet connection and reliable connection to the JET server managed by the 25 OWS. If the 25 OWS server becomes inoperable, the 25 OWS will activate continuation of operations (COOP) measures and transfer operations to another OWS server.

3.5. Equipment Maintenance. Organizations which are responsible for performing preventative maintenance and are responsible for repairing issues with meteorological and communications equipment at DMAFB are identified in **Table 3.1**.

Table 3.1. Meteorological and Communications Equipment Maintenance Contacts

Equipment or System	Responsible Agency/Organization
AN/FMQ-19	355 OSS/OSAM (RAWS)
AN/TMQ-53	355 OSS/OSW; Haight Bey and Associates
JET Automated Dissemination System (ADS)	Raytheon Corporation
JET Sensor Collection Application (SCA)	355 OSS/OSAM (RAWS)
PMSV	355 OSS/OSAM (RAWS)
Base Network and Telephones	355th Communications Squadron
MARK IVB	Lockheed Martin
AFW-WEBS	557th Weather Wing Data Center Operations

3.6. Building Power. The Base Operations facility (Building 4820) is equipped with a backup generator which will automatically activate in the event of a power outage. This allows the WF to continue providing weather services to supported units without significant interruption. In case of a catastrophic power outage which renders the backup generator inoperable, the WF will evacuate to the respective ASF or MIF alternate operation locations (AOLs) in accordance with **Chapter 9**.

Chapter 4

AIRFIELD SUPPORT FUNCTION

4.1. General. The Airfield Support Function (ASF) performs weather-related functions which directly support the airfield. These functions primarily include the dissemination of routine and special weather observations; the production and dissemination of the terminal aerodrome forecast (TAF); and the issuance of forecast and observed watches, warnings, and advisories (WWAs). The ASF is responsible for supporting the aerodrome, which is defined as an area contained within a 5 nautical-mile radius from the center of the runway.

4.2. Meteorological Watch (METWATCH). METWATCH provides the ASF duty forecaster with an organized approach to maintain situational awareness of environmental conditions within the aerodrome with a primary focus on unforecasted changes to prevailing weather conditions. The ASF duty forecaster performs continuous METWATCH for DMAFB. Changes in environmental conditions may require the ASF duty forecaster to disseminate updated observations and forecast products. The ASF is responsible for ensuring that supported units are aware of these updates.

4.3. Weather Observations. Surface weather observations provide critical weather information which cannot be gleaned from the analysis of satellite or radar imagery products alone. The ASF duty forecaster is responsible for recording and disseminating routine and special observations in accordance with AFMAN 15-111, *Surface Weather Observations*.

4.3.1. **Automated Observations.** Under normal circumstances, routine and special weather observations are automatically recorded and disseminated by the AN/FMQ-19 system. The ASF duty forecaster is responsible for performing quality assurance on the observations that the automated system is producing and augment the information as required.

4.3.2. **Augmented Observations.** Whenever the AN/FMQ-19 system becomes inoperable or certain weather conditions occur which the system is incapable of sensing, the ASF duty forecaster is responsible for augmenting surface weather observations with the missing data. There are two types of augmentation—*backup* and *supplementation*.

4.3.2.1. **Backing Up Observations.** When one or more of the sensors on the AN/FMQ-19 system become inoperable or are suspected of producing erroneous data, the ASF duty forecaster is responsible for logging the system outage and reporting it to Radar, Airfield, and Weather Systems (RAWS) technicians. The ASF duty forecaster will then collect the missing meteorological data using backup observing equipment and report it in surface weather observations.

4.3.2.2. **Supplementing Observations.** The AN/FMQ-19 is incapable of sensing certain weather conditions, such as hail, dust storms, and funnel clouds. The ASF duty forecaster will continuously monitor for any occurrence of these conditions and will supplement the surface weather observations with the necessary information such conditions are no longer occurring.

4.3.2.3. **Augmentation Observing Site.** When performing augmentation procedures, the ASF duty forecaster will collect the missing weather information from designated official observation points located on the northeast and southwest side of the Base Operations facility (Building 4820). The official observing point on the southwest side of the building

has the following limitations which affect surface observation quality (and necessitates the designation of the northeast side of the building as a secondary observation point):

4.3.2.3.1. Aircraft sunshades obscure the horizon from the west through the northwest.

4.3.2.3.2. Building 4820 obstructs vision and the horizon from the northwest through the northeast and the personnel recovery building partially obscures vision from the east.

4.3.3. **Dissemination.** Because surface weather observations are primarily focused on the needs of the flying community, the WF uses the Joint Environmental Toolkit (JET) as its primary dissemination tool. If JET is inoperable, the ASF duty forecaster will first disseminate the observation locally via telephone to ATC, SOF, and Airfield Management. Afterwards, the forecaster will disseminate the observation longline through AFW-WEBS. The forecaster may also request for off-station WFs to disseminate the observation if network communications at DMAFB are inoperable.

4.4. Terminal Aerodrome Forecast (TAF). TAFs provide official meteorological information for flight planning and command and control (C2) activities for a specific aerodrome. The TAF consists of a 30-hour forecast which specifies the time of occurrence to the nearest hour, the duration, and the intensity (if applicable) of weather conditions expected to occur. TAFs are formatted and disseminated in accordance with AFMAN 15-124, *Meteorological Codes*.

4.4.1. **TAF Production.** The ASF duty forecaster will produce and issue the TAF every 8 hours—at 1300Z (0600L), 2100Z (1400L), and 0500Z (2200L). The TAF is valid for a 30-hour forecast period and will be amended when unforecasted changes to prevailing weather conditions occur. Prevailing conditions are defined as those which persist for at least 30 consecutive minutes.

4.4.2. **Dissemination.** The ASF duty forecaster will disseminate the TAF through the Joint Environmental Toolkit (JET). The TAF will be disseminated no later than 15 minutes after the top of the valid start hour of the forecast (e.g., the 1300Z TAF will be disseminated no later than 1315Z). If JET is inoperable, the forecaster will use backup dissemination systems, such as AFW-WEBS.

4.5. Airfield Mission Weather Product (AMWP). AMWPs provide an hour-by-hour forecast of expected weather conditions at the DMAFB airfield. The AMWP is used by the SOF, the Top 3, the MIF and ASF forecasters, and other supported units for DMAFB takeoff and landing weather data. The AMWP will be produced for local specification criteria which is specific to the 355 WG but not covered by the TAF.

4.5.1. **AMWP Production.** The ASF duty forecaster will produce and issue the AMWF in conjunction with the TAF—at 1300Z (0600L), 2100Z (1400L), and 0500Z (2200L). The AMWP is valid for a 24-hour forecast period and will be amended when unforecasted changes to prevailing weather conditions occur.

4.5.2. **Dissemination.** The ASF duty forecaster will disseminate the completed AMWP via the WF SharePoint: **https://usaf.dps.mil/sites/Davis-Monthan/355OG/355OSS/Weather**. The AWMP will be uploaded no later than fifteen minutes prior to the top of the valid start hour of the forecast (e.g., the 1300Z AWMP will be uploaded no later than 1245Z).

4.6. Specification and Amendment Criteria. The WF will disseminate weather products based on specification and amendment criteria specified in AFMAN 15-129, *Air and Space Weather Operations*, local airfield minima listed in FLIPs, and in accordance with the DMAFB Installation Data Page (IDP).

4.7. Cooperative Weather Watch (CWW). The WF will establish a cooperative weather watch program with ATC personnel in accordance with AFMAN 15-111, *Surface Weather Observations*. This program will encompass the reporting of certain weather information which could affect flight safety or resource protection. This agreement ensures that the WF receives the most up-to-date weather information from ATC and enables the WF to relay this information to the appropriate agencies to support ground and flying operations.

4.7.1. ATC Leadership will:

4.7.1.1. Coordinate with WF leadership to certify controllers to evaluate tower prevailing visibility in accordance with AFMAN 13-204, Volume 3, *Air Traffic Control* and AFMAN 15-111, *Surface Weather Observations*.

4.7.2. ATC will report or relay the following information to the ASF duty forecaster:

4.7.2.1. Changes in the tower prevailing visibility whenever the tower visibility is lower than 4 statute miles (6,000 meters) and differs from the surface prevailing visibility by one or more reportable values. Reportable values are defined in Table 8.1 in AFMAN 15-111, *Surface Weather Observations.*

4.7.2.2. Local PIREPs within 5 minutes of receipt from pilots whenever practical.

4.7.2.3. Changes to the active runway.

4.7.2.4. The occurrence of previously unreported weather conditions which could affect flight safety or be critical to the safety or efficiency of other local operations and resources. Such conditions include but are not limited to tornadoes or funnel clouds, the beginning and ending of hail, and the occurrence of thunder and/or lightning.

4.7.2.5. The absence of one or more of the following weather parameters from the local or longline weather observation: wind direction, wind speed, visibility, runway visual range (RVR) when required, sky condition (including ceilings), temperature, dew point, altimeter setting, and pressure and density altitude (on local observations only). **NOTE:** The RVR system requires runway lights to be operating to work properly. Because the DMAFB airfield is open 24/7, the runway lights are continuously in operation. If the airfield is closed for any reason, then the runway lights will not be in operation and thus RVR will not be reported in observations.

4.7.2.6. The absence of one or more of the following occurrences: the beginning and end of precipitation, the beginning and end of thunderstorms, the occurrence and intensity of dust storms, and the location and movement of fog banks.

4.7.3. The WF will:

4.7.3.1. Reevaluate weather conditions whenever ATC reports weather conditions which differ from the most recent disseminated observation. If the AN/FMQ-19 is determined to be inoperable, then the ASF duty forecaster will assume backup observing procedures as established in **paragraph 4.3.2**.

4.7.3.2. Notify ATC personnel when the AN/FMQ-19 system is inoperable and backup observing procedures are in use. The ASF duty forecaster is responsible for ensuring that ATC is aware whenever wind, altimeter setting, and/or sea-level pressure (SLP) values are estimated.

Chapter 5

MISSION INTEGRATION FUNCTION

5.1. General. The Mission Integration Function (MIF) provides weather-related functions which directly support flight planning and target acquisition activities of supported flying units. MIF duty forecasters use a combination of mission weather products (MWPs) and in-person flight weather briefing services to provide mission planners and aircrews with timely, accurate, and relevant weather information for flying operations.

5.2. Weather Support to Flying Squadrons. The WF provides mission weather integration for all flying units assigned to DMAFB, as well as transient aircrews departing from DMAFB. The flying units which are most frequently supported by the WF are detailed in **Table 5.1** below.

Table 5.1. Flying Units Supported by the DMAFB WF

Group	Squadron Supported
355th Operations Group	354th Fighter Squadron
	357th Fighter Squadron
563d Rescue Group	55th Rescue Squadron
	79th Rescue Squadron
55th Electronic Combat Group	41st Electronic Combat Squadron
	42d Electronic Combat Squadron
	43d Electronic Combat Squadron
924th Fighter Group	47th Fighter Squadron
943d Rescue Group	305th Fighter Squadron
53d Test and Evaluation Group	Detachment 1, 88th Test and Evaluation Squadron
162d Wing	Alert Detachment (Tucson Air National Guard Base)

5.2.1. **General Support Requirements.** To receive adequate weather services from the WF, all flying squadrons assigned to or supported by DMAFB (including the 162 FW/ADET at Tucson Air National Guard Base) must adhere to these requirements. Requirements for specific flying squadrons are explained in further detail within subsequent sections of this chapter.

5.2.1.1. All flying squadrons will:

5.2.1.1.1. Provide the WF with the following parameters for each mission requesting weather support: times for takeoff, landing, and airspace entry and exit (i.e., military operating areas, air refueling tracks, orbit tracks, and/or drop zones); flight levels for all legs of the mission; alternate locations and times (if applicable); times for the desired receipt of MWPs; and times and locations for in-person briefings (if requested). Each squadron will provide this information to the WF in person or via JET, Patriot Excalibur (PEX), e-mail, or telephone.

5.2.1.1.2. Provide sufficient lead time for requested weather briefings and MWPs. Submit requests for in-person presentation-style briefings no later than 24 hours prior to departure, and requests for electronic MWPs no later than 2 hours prior to departure. Short-notice mission requests or changes to mission profiles may be delivered as verbal briefings by the MIF duty forecaster.

5.2.1.1.3. Specify the preferred media for the briefing, such as a DD Form 175-1 or a PowerPoint presentation. If an in-person briefing is requested, squadrons will provide audio-visual equipment (if required).

5.2.1.1.4. Upon mission completion, provide constructive customer feedback through face-to-face debriefs with the MIF duty forecaster or using post-mission debrief forms. This feedback will be used for WF technical meteorological evaluation, and to compile metrics reports. These reports can be delivered to flying squadron commanders upon request to advise customers on the status and quality of weather products and services and identify opportunities for improvement.

5.2.1.1.5. Relay PIREPs to the ASF duty forecaster via the SOF or Top 3. If a PIREP cannot be relayed in flight, relay pertinent weather information to the WF upon landing. The SOF will relay information to the WF no later than 5 minutes after receipt.

5.2.1.2. The WF will:

5.2.1.2.1. Integrate weather information into all phases of the customers' continuous operations cycle, including assessment, planning, and execution.

5.2.1.2.2. Provide forecasting and observing support as outlined in **Chapter 4**.

5.2.1.2.3. Provide briefing support and MWPs upon request.

5.2.1.2.4. Transmit all local PIREPs via JET to provide accurate observed local flying weather to aircrews.

5.2.1.2.5. Assist in troubleshooting weather communications equipment and provide an alternate means of disseminating weather information if the equipment must be removed for repair.

5.2.1.2.6. Refer weather briefing requests for AMC, USAFE, and PACAF missions to the appropriate weather support agency in accordance with AFI 15-128, *Weather Force Structure*. The WF will provide access to meteorological satellite imagery, takeoff data, and other perishable weather information for Integrated Flight Management (IFM) missions but will refer the aircrew to their supporting IFM weather organization for weather updates to the actual mission package.

5.2.2. **Fighter Squadron Support.** These requirements apply to flying squadrons assigned to the 355 OG (354 FS and 357 FS) and the 924 FG (47 FS):

5.2.2.1. Each squadron will:

5.2.2.1.1. Ensure that a complete flying schedule is entered into PEX. If PEX is inoperable, deliver schedules to the WF's e-mail organizational inbox.

5.2.2.1.2. Inform the MIF duty forecaster of any changes to mass briefing times during the week, preferably no later than the day prior to the briefing.

5.2.2.1.3. Inform the MIF duty forecaster of conditions observed within target areas upon mission completion. Relay information verbally or using standard debrief forms.

5.2.2.1.4. Relay PIREPs to the ASF duty forecaster via the SOF or Top 3.

5.2.2.1.5. Request weather support for deployments or other special needs at least three days prior to when the weather support is required.

5.2.2.1.6. Notify the WF at least 24 hours in advance of any requests for special tactical decision aids (TDAs).

5.2.2.1.7. Communicate any short-notice changes to mission details (e.g., mission times or locations) to the MIF duty forecaster and relay any further requests for weather information pertaining to these changes.

5.2.2.2. The WF will:

5.2.2.2.1. Provide planning weather information as required or requested.

5.2.2.2.2. Provide MWPs for all mass briefings—in PowerPoint format—to include requested space weather information and target acquisition weather data. The MIF duty forecaster will upload the completed briefing to the WF SharePoint and will notify the Top 3 via telephone.

5.2.2.2.3. Collect target acquisition weather information and provide it to mission planners in the form of tactical decision aids (TDAs). These TDAs will be included in the MWP provided at the mass briefing.

5.2.2.2.4. Perform MISSIONWATCH procedures for all briefed missions. The MIF duty forecaster will inform the SOF and/or the Top 3 of changes to weather conditions which cross mission-limiting thresholds.

5.2.2.2.5. Provide in-person mass briefings, pre-takeoff step weather updates, and/or embedded weather support when requested or required, as manning allows. (i.e., Embed a forecaster at the operations desk during monsoon season during flying hours)

5.2.3. **Electronic Combat Squadron Support.** These requirements apply to flying squadrons assigned to the 55 ECG (41 ECS, 42 ECS, and 43 ECS):

5.2.3.1. Each squadron will:

5.2.3.1.1. Provide a complete request for weather support via JET, telephone, or e-mail no later than two hours prior to the mission. Short-notice mission requests or changes to mission profiles may be delivered as verbal briefings by the MIF duty forecaster.

5.2.3.1.2. Request weather support for deployments and other special needs. Requests for in-person briefings (to include tail swap planning briefings) must be submitted to the WF no later than 48 hours in advance of the requested briefing time. A request form for tail swap planning briefings can be found on the WF SharePoint.

5.2.3.1.3. Relay PIREPs to the ASF duty forecaster via the SOF or the Top 3.

5.2.3.1.4. Inform the MIF duty forecaster of conditions observed within target areas upon mission completion. Relay information verbally or using standard debrief forms

via WF SharePoint: **https://usaf.dps.mil/sites/Davis-Monthan/355OG/355OSS/Weather/Forms/SitePages/Home.aspx**

5.2.3.2. The WF will:

5.2.3.2.1. Provide planning weather information as required or requested.

5.2.3.2.2. Provide MWPs for all requested missions using DD Form 175-1. The MIF duty forecaster will disseminate MWPs to the requesting POC via e-mail prior to the requested time.

5.2.3.2.3. Perform MISSIONWATCH procedures for all briefed missions. The MIF duty forecaster will inform the SOF and/or the Top 3 of changes to weather conditions which cross mission-limiting thresholds.

5.2.4. **Rescue Squadron Support.** These requirements apply to flying squadrons assigned to the 563 RQG (55 RQS and 79 RQS).

5.2.4.1. Each squadron will:

5.2.4.1.1. Provide a complete request for weather support via JET, telephone, or e-mail no later than two hours prior to the mission. Short-notice mission requests or changes to mission profiles may be delivered as verbal briefings by the MIF duty forecaster.

5.2.4.1.2. Relay PIREPs to the ASF duty forecaster via the SOF or Top 3.

5.2.4.1.3. Request weather support for deployments or other special needs at least three days prior to when the weather support is required.

5.2.4.2. The WF will:

5.2.4.2.1. Provide planning weather information as required or requested.

5.2.4.2.2. Provide MWPs for all requested missions using DD Form 175-1. The MIF duty forecaster will disseminate MWPs to the requesting POC via e-mail prior to the requested time.

5.2.4.2.3. Perform MISSIONWATCH procedures for all briefed missions. The MIF duty forecaster will inform the SOF and/or the Top 3 of changes to weather conditions which cross mission-limiting thresholds.

5.3. Weather Support to Pararescue Operations. The WF provides mission integration weather support to pararescue training and operations conducted by non-flying rescue squadrons assigned to DMAFB. The units which are most frequently supported by the WF are detailed in **Table 5.2** below.

Table 5.2. Non-Flying Rescue Squadrons Supported by the DMAFB WF

Group	Squadron Supported
563d Rescue Group	48th Rescue Squadron
	68th Rescue Squadron
943d Rescue Group	306th Rescue Squadron

5.3.1. **Pararescue Support.** These requirements apply to non-flying squadrons assigned to the 563 RQG (48 RQS and 68 RQS).

5.3.1.1. Each squadron will:

5.3.1.1.1. Provide a complete request for weather support via telephone, e-mail, or in person no later than two hours prior to the mission. Short-notice mission requests or changes to mission profiles may be delivered as verbal briefings by the MIF duty forecaster.

5.3.1.1.2. Request weather support for deployments or other special needs at least three days prior to when the weather support is required.

5.3.1.2. The WF will:

5.3.1.2.1. Provide planning weather information as required or requested.

5.3.1.2.2. Provide MWPs for all requested missions using the local HALO JM Report format. The MIF duty forecaster will disseminate MWPs to the requesting POC via e-mail prior to the requested time and will deliver the briefing in-person if requested.

5.3.1.2.3. Perform MISSIONWATCH procedures for all briefed missions. The MIF duty forecaster will inform the SOF and/or the Top 3 of changes to weather conditions which cross mission-limiting thresholds.

5.3.2. **943d Rescue Group Support.** These requirements apply to flying squadrons assigned to the 943 RQG (306 FS).

5.3.2.1. The WF will:

5.3.2.1.1. Ensure that the AMWP is disseminated and uploaded to the WF SharePoint.

5.4. Space Weather Support. The nature of the space environment should be a planning factor for agencies dealing with satellite communications (SATCOM), high frequency (HF) point-to-point communications, or ground-based radar systems. Upon request, the WF will provide and arrange space weather services to supported units and agencies using products retrieved from the 25 OWS web portal or AFW-WEBS.

Chapter 6

STAFF INTEGRATION FUNCTION

6.1. General. The Staff Integration Function (SIF) consists of and refers to the WF leadership (i.e., the flight commander and flight chief) and the NCOICs of Airfield Weather Services and Mission Weather Integration. In addition to providing administrative management of the WF, these members also function as a direct interface for supported units and agencies to provide direct support to command, control, and planning functions.

6.1.1. It is the duty of the SIF to understand the missions and tactics of their supported units.

6.1.2. Primary functions of the SIF include but are not limited to 355 WG stand-up weather briefings; squadron staff meetings; Instrument Refresher Course (IRC) briefings; SOF briefings; pre-deployment briefings; exercise planning, execution, and support; Crisis Action Team (CAT) support; Emergency Operations Center (EOC) support; and tropical cyclone and severe weather support. WF leadership may delegate these functions to qualified personnel within the flight.

6.1.3. The SIF is available Monday through Friday from 0730 to 1630L but will remain flexible and tailored to meet the staff weather needs of the 355 WG as arranged in advance by squadron, group, or wing leadership. SIF members will also remain on standby to support Severe Weather Action Plan (SWAP) procedures as dictated by the WF duty schedule.

6.2. Desert Lightning Team (DLT) Sync. WF leadership will provide a trained and qualified representative to the 355 WG's DLT Sync whenever requested. The DLT Sync is normally held on the second and fourth Tuesdays of the month at 0800L in the 355 WG conference room in Building 2300. The representative will provide a briefing on current and forecast weather for DMAFB and the surrounding AOR as requested by the 355 WG/CC.

6.3. Commander's Update Brief (CUB). WF leadership will provide a trained and qualified representative to provide weather information to the 355 WG CUB when requested by the 355 WG/CC or designated representative. These briefings differ from the DLT Sync, as the weather information usually pertains to a specific contingency, deployment, or exercise.

6.4. Crisis Action Team (CAT). The WF is identified as a Tier II member of the 355 WG Crisis Action Team. Whenever the CAT is activated and the presence of Tier II members is required, WF leadership will provide a trained and qualified representative. The representative will assist the CAT with weather-related issues and ensure that the CAT director is aware of pertinent meteorological conditions which may affect mission execution.

6.5. Emergency Operations Center (EOC). WF leadership will provide trained and qualified weather technicians to support the 355 WG Emergency Operations Center whenever it is activated to respond to an incident. The weather technicians will assist the EOC with weather-related issues and ensure that the EOC commander is aware of pertinent meteorological conditions which may affect the Wing's response to the incident.

6.6. Deployment and Concept Briefing. The WF will provide mass weather briefings prior to a mass deployment of personnel and/or aircraft from or through DMAFB. The format of the briefing will be tailored to the mission and will include forecast and climatological weather information for the duration of the mission or deployment as applicable. The WF will also develop similar briefings

for exercises (i.e., concept briefings). The 355 WG Plans and Programs office (355 WG/XP) will provide the WF with sufficient advance notice so that weather technicians can collect as much relevant information as necessary prior to the briefing.

6.7. Instrument Refresher Course (IRC) Briefing. The WF will supplement the Instrument Refresher Course with weather information in accordance with AFMAN 11-210, *Instrument Refresher Program*. Upon request, the WF will present a weather briefing which includes such items as weather station operations, weather services, climatology, typical weather patterns, flight weather hazards, space weather, current weather issues, and so forth. IRC schedulers will provide the WF with sufficient notice so that weather technicians can adequately prepare the briefing.

6.8. Supervisor of Flying (SOF) Briefing. The WF will provide seasonal weather briefings at semi-annual SOF meetings as coordinated by the 355 OG/OGV or 924 FG/FGV. In addition to any requested information, these briefings will cover climatology for the upcoming six months, including typical seasonal weather patterns, forecast challenges, flight weather hazards, and operational issues pertaining to the interaction between the SOF and the WF in support of the 355 WG mission. The SOF briefing scheduler will provide the WF with sufficient notice so that weather technicians can adequately prepare the briefing.

6.9. Quarterly Safety Meeting Briefings. The WF will provide seasonal weather briefings at quarterly flight safety meetings as coordinated by the 355 WG Safety Office (355 WG/SE). In addition to any requested information, these briefings will cover climatology for the upcoming quarter, including typical seasonal weather patterns, forecast challenges, and flight weather hazards. The safety meeting scheduler will provide the WF with sufficient notice to that weather technicians can adequately prepare the briefing.

6.10. Squadron Staff Meeting. The WF will attend squadron staff meetings as directed by the 355 OSS/CC or 355 OSS/DO. These meetings are normally held every Wednesday at 0900L in the 355 OSS conference room in Building 4413. Times and locations for this meeting are subject to change and will be disseminated by the squadron CSS personnel. The WF will provide operations and administrative updates based on the pre-established topic for the meeting.

6.11. Wing Inspection Team (WIT). WIT members are designated throughout the 355 WG to ensure that Commander's Inspection Program compliance is achieved and maintained in accordance with AFI 90-201, *The Air Force Inspection System*. The WF is required to designate a primary and alternate representative to support inspections, evaluations, and provide staff support during local exercises. Required support will be coordinated by the DMAFB WIT (355 WG/IGI).

6.12. Investigation Boards. In accordance with Department of the Air Force Instruction (DAFI) 91-204, *Safety Investigations and Boards*, the WF will provide weather information related to aircraft mishaps or incident investigations to the 355 WG Safety Office (355 WG/SE). WF leadership will provide a qualified weather officer or a minimum 7-level weather SNCO for safety investigation boards (SIBs) upon request in accordance with Department of the Air Force Manual (DAFMAN) 91-223, *Aviation Safety Investigations and Reports*.

6.13. Exercise Planning. WF leadership will maintain a primary and alternate Wing Inspection Team (WIT) member who will participate in exercise planning and evaluation as directed by the 355 WG Inspector General office (355 WG/IG). Upon request, the WF will also provide real-world or simulated weather information for exercise scenarios. In accordance with AFMAN 15-129, *Air*

and Space Weather Operations, the WF should encourage commanders to include weather forces in operational exercises.

6.13.1. The WF will coordinate and participate in severe weather or natural disaster exercises as required by 355 WG/IG. The WF will provide a realistic weather scenario and support for the exercise. These exercises should include, at a minimum, the 25 OWS, Command Post, and Emergency Management personnel. The purpose of these exercises is to evaluate on-base and off-base agencies' timeliness in notifying personnel of impending severe weather and respond to the impacts of severe weather events on installation resources. The lessons learned from these exercises help agencies validate their severe weather response plans.

6.14. Tropical Cyclone Weather Support. The National Hurricane Center (NHC) in Miami is the governing authority for all tropical cyclone forecasts and warnings in the northern Atlantic and eastern Pacific Ocean basins. While direct impacts from tropical cyclones are rare in southern Arizona, the region may experience indirect impacts from tropical cyclones which make landfall and degenerate into post-tropical cyclones over the Baja California peninsula or the mountainous terrain of northwestern Mexico. Additionally, DMAFB assets may occasionally travel to areas prone to tropical cyclone impacts and some units may receive aircraft during coastal evacuations from installations impacted by tropical cyclones.

6.14.1. Tropical Cyclone Threat Assessment Product (TC-TAP). The 26 OWS located at Barksdale AFB, Louisiana will produce and disseminate a TC-TAP forecast for installations which are expected to be in the path of an incoming tropical cyclone.

6.14.1.1. The TC-TAP forecast is valid for a minimum of 96 hours and is updated as new information is received from the NHC. The TC-TAP defines wind and rainfall impacts to the installations in the path of the tropical cyclone. The WF will use this information to tailor airfield and mission weather products.

6.14.1.2. In accordance with AFMAN 15-129, *Air and Space Weather Operations*, the WF will not deviate from the timing and intensity of winds and rainfall as depicted within the TC-TAP forecast. Airfield and mission weather products will not be amended if prevailing wind and rainfall conditions differ from those depicted in the TC-TAP forecast.

6.14.1.3. If the 26 OWS is unable to produce the TC-TAP product, the 17 OWS at Joint Base Pearl Harbor-Hickam, Hawaii will be the backup issuance authority.

6.14.2. WF leadership will:

6.14.2.1. Keep installation leadership informed of the situation as it evolves.

6.14.2.2. Provide installation leadership with the latest NHC forecast track graphics for all tropical cyclones which are expected to impact the region. WF leadership will also provide relevant graphical products produced by the NHC, 25 OWS, and the 26 OWS.

6.14.2.3. Ensure that customers understand that 48-hour and 72-hour outlooks contain a high degree of uncertainty, are subject to frequent change, and will be used for planning purposes only. WF leadership will ensure that installation leadership is provided information regarding average tropical cyclone forecast track errors.

6.14.3. The MIF duty forecaster will:

6.14.3.1. Integrate tropical cyclone information into MWPs for all aircraft departing DMAFB if the mission's flight path is expected to be close to the tropical cyclone.

6.14.3.2. Provide or arrange for weather support for all transient aircrews evacuated to DMAFB. The transient aircrew's servicing WF should contact the DMAFB WF prior to the evacuation of the aircraft. If this is not possible, the MIF duty forecaster will contact the aircrew's home station WF prior to providing weather support.

6.15. Flight Information Publications (FLIPs). The WF is responsible for ensuring that weather information contained within the installation's FLIP is current and accurate. The WF will ensure that any changes in airfield weather minima are incorporated into WF processes and procedures. Changes or updates to weather data will be coordinated with DMAFB Airfield Management (355 OSS/OSAA) personnel. Weather technicians will review each new publication to ensure data accuracy and incorporate any changes into local forecast products.

6.15.1. Information in the FLIP will include but not be limited to operating hours, PMSV frequencies, WF contact information, automated weather observing equipment, and limitations hindering unobstructed visibility restrictions.

6.15.2. The FLIP will also contain a brief description of Cooperative Weather Watch (CWW) procedures as described in **paragraph 4.7**.

6.16. Climatology Support. The WF SIF will provide specialized climatology information upon request from on-base agencies for operational or research purposes. Most requests can be filled within three duty days, but processing time may vary depending on the complexity and output format of the data requested. Climatology requests for off-base agencies will not be released without approval from the 355 WG Public Affairs or Judge Advocate offices, the 355 OG/CC or a designated representative.

6.17. Unit Radar Committee (URC). In accordance with Federal Meteorological Handbook (FMH) Number 11, *WSR-88D Meteorological Observations* and AFMAN 15-129, *Air and Space Weather Operations*, the WF is designated as the Air Force representative and voting member of the Unit Radar Committee for the National Weather Service (NWS) Next-Generation Radar (NEXRAD) site located in the Santa Rita Foothills southeast of Tucson, AZ.

6.18. Weather Training. In accordance with AFI 15-127, *Weather Training*, the WF will train 3-level weather Airmen as they transition to their first duty assignment from the initial skills course at Keesler AFB, Mississippi. Airmen will be enrolled in upgrade training upon arrival to the WF. Airmen will have 9 months to complete upgrade training requirements and will work directly with their supervisor or designated trainer to annotate training progress.

6.19. ATC Orientation and Certification. In accordance with AFMAN 15-129, *Air and Space Weather Operations* and AFMAN 13-204, Volume 3, *Air Traffic Control*, all ATC personnel must be certified by a designated weather examiner to evaluate tower prevailing visibility as required by the CWW program outlined in **paragraph 4.7** The WF will provide this training to ATC upon request.

6.20. Installation Data Pages (IDPs). The IDP is an agreement between the WF and the 25 OWS as to what weather support will be provided to the installation. WF leadership is responsible for reviewing the IDP within 90 days of initial assignment and annually to ensure consistency with

supported unit requirements. If updates are needed to the DMAFB IDP, WF leadership will inform the 25 OWS.

6.20.1. The IDP details contact information for the WF and the 25 OWS, defines desired lead times and thresholds for WWAs, identifies specification criteria for weather observations and amendment criteria for the TAF, and outlines backup and local outage procedures and contacts.

6.20.2. The DMAFB IDP is maintained on the 25 OWS webpage, which can be accessed here: **https://25ows.us.af.mil/ows_unique/25data/moa/Davis_Monthan_AFB_Data_Page.pdf**

Chapter 7

RESOURCE PROTECTION

7.1. General. The WF provides weather support to protect vital base resources from hazardous weather conditions and to provide maximum flight safety. The WF issues all forecast and observed watches, warnings, and advisories (WWAs) for DMAFB and the 309th Aerospace Maintenance and Regeneration Group (AMARG). Each WWA is assigned a numerical designation following the two-digit number representing the current month (e.g., 06-001 represents the first advisory issued during the month of June, while 09-013 represents the thirteenth advisory issued during the month of September). Specific rules governing the format, issuance, amendment, extension, and cancellation of WWAs are outlined in AFMAN 15-129, *Air and Space Weather Operations*.

7.2. Watches, Warnings, and Advisories (WWAs).

7.2.1. **Watch.** A weather watch is a special notice provided to supported agencies alerting them to the *potential* for weather conditions of a certain intensity which may pose a hazard to personnel or resources. Weather watches indicate to supported units that they should be considering plans to take required protective actions in case a weather warning is issued. Watches are issued for an area encompassing a 5 nautical-mile radius around the center of the DMAFB (or AMARG) airfield based on criteria outlined in **Attachment 2**.

7.2.2. **Warning.** A weather warning is a special notice provided to supported agencies alerting them that weather conditions of a certain intensity which may pose a hazard to personnel or resources are *observed* or *expected to occur*. The issuance of a weather warning should prompt supported units to begin taking required protective actions ahead of imminent hazardous conditions. Warnings are issued for an area encompassing a 5 nautical-mile radius around the center of the DMAFB (or AMARG) airfield based on criteria outlined in **Attachment 2**.

7.2.2.1. The ASF duty forecaster will issue an observed lightning warning when lightning is first observed within 5 nautical miles of the airfield. When lightning cannot be observed, a warning may be issued when thunder is heard by the forecaster or if hail is observed when the local noise level is such that thunder cannot be heard.

7.2.2.2. In accordance with AFMAN 15-129, *Air and Space Weather Operations*, lightning warnings will be cancelled when fifteen minutes have elapsed since the last occurrence of these criteria. The ASF forecaster will not keep a lightning warning out for longer than necessary but may keep it out until the imminent threat of lightning has passed.

7.2.3. **Advisory.** A weather advisory is a special notice provided to supported agencies alerting them that weather conditions which may limit ground or flying operations are *observed* or *expected to occur* and supported agencies require a specific amount of advance notice (also known as *desired lead time*). Advisories are issued for an area encompassing a 5 nautical-mile radius around the center of the DMAFB (or AMARG) airfield based on criteria outlined in **Attachment 2**.

7.2.3.1. An advisory may be issued when lightning is observed within 10 nautical miles of the airfield. The ASF forecaster will use the same procedures for determining whether a thunderstorm is occurring that are used for the observed lightning warning.

7.3. WWA Dissemination. The primary dissemination system used by the WF to issue WWAs is Integrated Weather Warning Capability (IWWC) in the Joint Environmental Toolkit (JET). If JET or the local network become inoperable, the ASF forecaster will disseminate WWAs over the telephone and will record acknowledgements using AF Form 3806, *Weather Watch Advisory Log* and AF Form 3807, *Watch/Warning Notification and Verification*. WWAs will be disseminated to organizations based on the dissemination tree depicted in **Attachment 3**.

7.3.1. **Cancellation of Extension of WWAs.** The ASF duty forecaster will perform hourly verification to ensure that the WWA criterion is still occurring or forecast to occur. Watches will be cancelled when the potential for hazardous weather no longer exists. Warnings and advisories will be cancelled when weather conditions are no longer occurring or no longer forecasted to occur. The ASF duty forecaster may extend WWAs if conditions are expected to continue for longer than the original valid period.

7.4. WWA Desired Lead Time. Desired lead times (DLTs) are defined as the amount of advance notice that a supported agency requires prior to the onset of a particular weather phenomenon to take protective actions. DLTs for warnings and advisories issued for DMAFB are established in accordance with AFMAN 15-129, *Air and Space Weather Observations* and with input from customer requirements and are outlined in **Attachment 2**. Neither watches nor observed warnings or advisories have designated DLTs.

7.5. Severe Weather Action Plan (SWAP). The Severe Weather Action Plan (SWAP) outlines procedures to recall Severe Weather Action Team (SWAT) personnel in the event of severe weather or any other emergency which requires weather support. Because the WF maintains 24/7 operations, the SWAP is continuously in effect. Duty positions and priorities are shifted to cover SWAP responsibilities for the entire duration of the severe weather event or emergency.

7.5.1. **WF Responsibilities.**

7.5.1.1. WF leadership will perform a monthly check of the 355 OSS recall roster and ensure that it is updated with the most recent contact information for all potential SWAT personnel.

7.5.1.2. When the potential for severe weather exists, the ASF duty forecaster will confer with WF leadership on meteorological conditions, manning requirements, and the recall of additional personnel. The SWAT leader will remain on standby if the potential for severe weather exists.

7.5.1.3. During normal staff duty hours (0730 to 1630L), the ASF duty forecaster will activate SWAP procedures by notifying WF leadership. Outside these hours, the forecaster will contact the designated SWAT leader as identified on the WF duty schedule. In either case, the ASF duty forecaster will initiate SWAP procedures when a watch or warning has been issued for one or more of the following criteria:

7.5.1.3.1. Tornado.

7.5.1.3.2. Damaging winds (greater than or equal to 50 knots).

7.5.1.3.3. Damaging hail (greater than or equal to 3/4 inch).

7.5.1.3.4. Freezing precipitation.

7.5.1.3.5. Heavy snow (greater than 2 inches within 12 hours).

7.5.1.3.6. Heavy rain (greater than 2 inches within 12 hours).

7.5.1.4. The ASF duty forecaster may also initiate SWAP procedures for mission-limiting non-weather occurrences such as communications failures or critical equipment outages at the WF, or if an unforeseen circumstance necessitates the evacuation weather personnel from the Base Operations facility.

7.5.1.5. The WF may document severe weather events for training purposes or for further investigation if needed.

7.6. Mishap Procedures. Upon notification of an aircraft or ground mishap, the WF will ensure the collection of applicable weather data, products, and services in order to facilitate the mishap investigation.

Chapter 8

RECIPROCAL SUPPORT

8.1. General. The WF requires support from several other agencies to accomplish its mission. This chapter outlines the support requirements which are not already directed by Air Force or other local instructions or directives.

8.2. 355th Wing Commander. The 355 WG/CC may chair meetings throughout the year to review installation severe weather preparedness, capabilities, requirements, and procedures conducted by the WF.

8.3. 355th Wing Command Post (355 WG/CP).

8.3.1. The WF will:

8.3.1.1. Report any weather-related damage on DMAFB which requires an OPREP-3 or a Commander's SITREP in accordance with AFMAN 10-206, *Operational Reporting*.

8.3.1.2. Disseminate WWAs to CP via the JET dissemination system and confirm receipt.

8.3.1.3. Assist in troubleshooting weather communications equipment and provide an alternate means of disseminating weather information if the equipment must be removed to repair.

8.3.2. The 355 WG/CP will:

8.3.2.1. Coordinate with the WF regarding any weather-related damage on DMAFB which requires an OPREP-3 or Commander's SITREP. NOTE: SITREPs are used to notify MAJCOM leadership. OPREP-3s are used to notify HAF/DoD leadership. The CP will not notify the 25 OWS because the WF provides weather support for base and wing support functions.

8.3.2.2. Disseminate WWAs in accordance with **Attachment 3**.

8.3.2.3. Notify the WF when the 355 WG/CC or 355 MSG/CC have initiated a recall or have activated the Crisis Action Team (CAT) and/or Emergency Operations Center (EOC) in response to a weather-related event.

8.3.2.4. Activate the Emergency Mass Notification System (EMNS) (e.g., the Network Alerting System, Telephone Alerting System, and the Giant Voice system) for all natural disasters (to include tornado warnings) as required in accordance with AFMAN 10-206, *Operational Reporting.*

8.3.2.5. Disseminate Frostbite Risk Level (FRL) information provided by the 355th Aerospace Medicine Squadron Bioenvironmental Engineering Flight (355 AMDS/SPGB, hereafter BEF) using base communications networks as needed to notify workplace supervisors to implement protective measures as listed in Table A2.5 in DAFI 48-151, *Thermal Injury Prevention Program*.

8.4. 355th Wing Flight Safety (355 WG/SEF).

8.4.1. The WF will:

8.4.1.1. Provide weather information related to aircraft mishap or incident investigations to the 355 WG/SEF upon request in accordance with Department of the Air Force Instruction (DAFI) 91-204, *Safety Investigations and Reports*.

8.4.1.2. Provide a qualified weather officer or a minimum 7-level weather SNCO for safety investigation boards (SIBs) upon request in accordance with Department of the Air Force Manual (DAFMAN) 91-223, *Aviation Safety Investigations and Reports*.

8.4.1.3. Provide seasonal briefings on weather-related aviation hazards at aircrew flight safety meetings upon request.

8.4.2. The 355 WG/SEF will:

8.4.2.1. Notify the WF of all known aircraft mishaps and incidents in which weather or meteorological service issues are suspected factors in the mishap as soon as possible.

8.4.2.2. Provide the WF at least one week in advance for any requests for Wing-level weather safety briefings not related to aircraft mishap or incident investigations.

8.5. 355th Civil Engineer Squadron Operations Flight (355 CES/CEO).

8.5.1. The 355 CES/CEO will:

8.5.1.1. Provide emergency backup power for weather station operations in Building 4820.

8.5.1.2. Provide the WF at least 15 minutes advance notice before switching over from commercial to backup power (or vice versa). The 355 CES/CEO will postpone generator testing during periods of inclement weather.

8.6. 355th Civil Engineer Squadron Readiness & Emergency Flight (355 CES/CEX).

8.6.1. The WF will:

8.6.1.1. Provide chemical downwind messages (CDMs) to the Chemical, Biological, Radiological and Nuclear (CBRN) Cell during exercises and real-world wartime contingencies upon request in accordance with DAFI 10-2501, *Emergency Management Program* and AFMAN 15-129, *Air and Space Weather Operations*.

8.6.1.2. Provide weather data required for chemical spills, emergencies, or disasters upon request.

8.7. 355th Communications Squadron (355 CS).

8.7.1. The WF will report issues with the Sensor Collection Appliance (SCA) to CS personnel if a restart is required.

8.7.2. The 355 CS will:

8.7.2.1. Provide an emergency restart of the SCA upon request.

8.7.2.2. Assist the JET Help Desk in troubleshooting the SCA upon request.

8.8. 355th Operations Support Squadron Airfield Operations Flight (355 OSS/OSA).

8.8.1. The 355 OSS Airfield Operations Flight is comprised of three sections—**Air Traffic Control** (OSAT, hereafter ATC); **Airfield Management** (OSAA, hereafter AM); and **Radar, Airfield, and Weather Systems** (OSAM, hereafter RAWS).

8.8.2. The WF will:

8.8.2.1. Maintain a CWW program with ATC as defined in **paragraph 4.7**.

8.8.2.2. Notify ATC and AM of all WWAs.

8.8.2.3. Assist ATC with the preparation of charts or the identification of suitable markers for determining tower visibility.

8.8.2.4. Notify ATC and AM of all PMSV radio outages and restoration to service.

8.8.2.5. Provide weather orientation and certification for ATC controllers upon request.

8.8.2.6. Assist in troubleshooting weather communications equipment and provide an alternate means of disseminating weather information if the equipment must be logged out.

8.8.2.7. Notify RAWS of all issues or outages pertaining to weather equipment.

8.8.3. AM will:

8.8.3.1. Notify the WF of aircraft emergencies and mishaps.

8.8.3.2. Monitor the JET automated notification system and acknowledge receipt of WWAs from the WF.

8.8.3.3. Disseminate WWAs in accordance with **Attachment 3**.

8.8.3.4. Enter weather information into Flight Information Publications (FLIPs) and/or Notices to Air Missions (NOTAMs).

8.8.3.5. Notify the WF of future National Airborne Operations Center (NAOC) arrivals and departures using its declassified mission identifier.

8.8.4. ATC will:

8.8.4.1. Maintain a CWW program with the WF as defined in **paragraph 4.7**.

8.8.4.2. When duty priorities permit, notify the WF when one or more of the following weather parameters are missing from the official observation: visibility; ceiling; the occurrence of thunderstorms, lightning, or dust storms; the occurrence of tornadic activity (including funnel clouds); the occurrence of hail; the occurrence of volcanic ash; the beginning and end of precipitation; the location and movement of fog banks; and any occurrence of previously unreported weather information that could affect flight safety or be critical to the safety or efficiency of other local operations and resources.

8.8.4.3. Notify the WF when tower visibility is less than 4 statute miles (6000 meters) and differs from the surface prevailing visibility by one or more reportable values.

8.8.4.4. Relay all weather-related PIREPs to the WF no later than 5 minutes after receipt.

8.8.4.5. Conduct daily operational checks of the PMSV radio.

8.8.4.6. Inform airborne contacts of the closest alternate PMSV location and frequency during extended PMSV outages or, if mission allows, facilitate a telephone patch with the WF through the 355 WG/CP in accordance with **paragraph 2.6.2**.

8.8.4.7. Notify the WF of all changes to the active runway.

8.8.4.8. Log into and out of weather communications equipment by calling the WF.

8.8.4.9. Notify the WF of weather communications equipment outages to arrange for an alternate method of weather information dissemination.

8.8.4.10. Operate the runway switch for the AN/FMQ-19 system.

8.8.4.11. When duty priorities permit, notify the WF when evacuating the Tower.

8.8.4.12. Monitor the JET Air Force Automation System (AFAS) interface for the official notification and acknowledgement for WWAs. If AFAS is inoperable, ATC will use the JET ATC Portal as their official backup notification and acknowledgement interface for WWAs. ATC personnel will ensure that audio notifications are turned on for WWAs. The JET ATC Portal can be accessed here:

8.8.4.13. Provide WF leadership at least 48 hours prior notice when scheduling weather certification tests.

8.8.5. RAWS will:

8.8.5.1. Provide routine and emergency maintenance for weather observing and weather-related communications equipment on DMAFB.

8.8.5.2. Receive permission from the WF before taking down equipment for maintenance.

8.9. Scheduling and Training Flights (DET 3/TRSS, 563 OSS/OSO, 355 OSS/OSO).

8.9.1. The WF will:

8.9.1.1. Provide the SOF with weather indoctrination training upon request.

8.9.1.2. Provide a briefer for the Instrument Refresher Course (IRC) upon request.

8.9.1.3. Provide any other pertinent weather briefings upon request.

8.9.2. DET 3/TRSS, 563 OSS/OSO, and 355 OSS/OSO will:

8.9.2.1. Inform the WF of the date, time, and location of all IRCs in advance.

8.9.2.2. Inform the WF of the date, time, mission commander, and other pertinent mission information for verification planning meetings and deployment missions in advance.

8.10. DMAFB Bioenvironmental Engineering Flight (355 OMRS/SGXB or BEF).

8.10.1. The WF will:

8.10.1.1. Calculate the Fighter Index of Thermal Stress (FITS) when requested.

8.10.1.2. Issue observed advisories when temperatures are less than or equal to 45°F (7°C), greater than or equal to 95°F (35°C), and/or greater than or equal to 113°F (45°C).

8.10.2. The BEF will:

8.10.2.1. Measure and provide Wet Bulb Globe Thermometer (WBGT) indices during the hot weather season and as required by DAFI 48-151, *Thermal Injury Prevention Program*.

8.10.2.2. Obtain the outside ground temperature and wind speed from the WF and determine the Wind Chill Temperature and Frostbite Risk Level (FRL) using Tables 3.3 and 3.4 in DAFI 48-151, *Thermal Injury Prevention Program*.

8.10.2.3. Notify 355 WG/CP of FRL calculations.

8.10.2.4. Ensure that WBGT index information is available throughout normal duty hours during the duty week by posting and reporting information via telephone to 355 WG/CP and AMARG Job Control.

8.11. 25th Operational Weather Squadron (25 OWS). Most reciprocal support requirements between the WF and an OWS are outlined within AFMAN 15-129, *Air and Space Weather Operations*. The requirements below are specific to support for DMAFB and its associated units.

8.11.1. The WF will:

8.11.1.1. Act as primary liaison for the 25 OWS to determine and validate weather support requirements for the 355th Wing and its associated units.

8.11.1.2. Provide tactical-level mission planning and execution weather support for the 355th Wing and its associated units.

8.11.1.3. Coordinate wartime, contingency, exercise, and other special weather support requirements with the 25 OWS at least 72 hours prior to the start of operating.

8.11.1.4. Produce, disseminate, and continuously maintain the DMAFB TAF with the appropriate specification and amendment criteria in accordance with AFMAN 15-124, *Meteorological Codes* and AFMAN 15-129, *Air and Space Weather Operations*. Maintain categorical consistency between the TAF and any issued WWAs.

8.11.1.5. Provide or arrange for mission weather products or updates to existing products in accordance with duty priorities outlined in Tables **1.1** and **1.2**.

8.11.1.6. Produce, disseminate, and continuously monitor surface weather observations for DMAFB. Automated observations will be augmented (i.e., supplemented or backed up) in accordance with AFMAN 15-111, *Surface Weather Observations,* and local procedures.

8.11.1.7. Provide feedback to the 25 OWS on the accuracy, timeliness, and relevance of its weather services and products.

8.11.1.8. Maintain a current list of environmental impacts to the 355th Wing and supported base agencies.

8.11.1.9. Notify the 25 OWS of significant operational limitations, to include evacuations of the WF's primary operating location and equipment and communications outages. During significant outages, the WF will reach out to the 25 OWS for initial COOP support regarding TAFs, WWAs, and 175-1s.

8.11.1.10. Notify the 25 OWS of changes to the published WF hours of operation. These changes will also be reflected in an update to the DMAFB IDP, which is maintained on the 25 OWS web portal.

8.11.1.11. Disseminate PIREPs in accordance with established duty priorities listed in **Table 1.1** WF will disseminate urgent reports locally and longline and will notify the 25 OWS when pilots report conditions that present an extreme hazard to flight. Urgent PIREP criteria are outlined in AFMAN 15-124, *Meteorological Codes.*

8.11.1.12. Participate with 25 OWS in weather discussions which result in products which categorize weather threats to DMAFB and its associated military operating areas (e.g.,

Threat Based Operations, Threat Tracking Database, and Special Weather Statement discussions). Meteorological conferences (METCONs) will be conducted as requested.

8.11.1.13. Produce and disseminate MWPs. Continuously perform MISSIONWATCH procedures for flight routes, military operating areas (MOAs), air refueling routes, orbit tracks, and drop zones used by supported units each day.

8.11.1.14. Continuously perform METWATCH procedures for DMAFB for conditions which necessitate amendments or updates to existing airfield and mission weather products. Notify the 25 OWS when hazardous conditions are observed or expected to occur at DMAFB.

8.11.1.15. Notify the 25 OWS when OWS products are, or may become, unrepresentative when compared to current or expected weather conditions.

8.11.1.16. Notify the 25 OWS of any immediate or interim changes made to the unit weather support plan or document and other applicable local support agreements when the changes affect 25 OWS operations.

8.11.1.17. Provide PMSV support to aircrews as requested.

8.11.1.18. Notify the 25 OWS of all in-flight/ground emergencies and mishaps reported by the 355th Wing and request a data save. The WF will combine the information compiled by the 25 OWS as outlined in **paragraph 8.11.2.2** with mission weather products provided to aircrews involved with the emergency or mishap.

8.11.1.19. Develop and maintain SWAP procedures and ensure that sufficient personnel are available during potential or actual severe weather events in accordance with AFMAN 15-129, *Air and Space Weather Operations*.

8.11.1.20. Use 25 OWS products as much as possible to support the mission.

8.11.1.21. Provide an eyes-forward role for the OWS for the justification and verification of WWAs, including information from non-standard sources such as police and local media.

8.11.1.22. Cross-feed MWP reviews, forecast study results, and lessons learned to the 25 OWS.

8.11.1.23. Provide NAOC weather support in accordance with **paragraph 8.12**.

8.11.1.24. Issue WWAs in accordance with **Attachment 2**.

8.11.1.25. Coordinate visits with the 25 OWS.

8.11.2. 25 OWS will:

8.11.2.1. Ensure that OWS and WF leadership emphasize the importance of teamwork, maintaining open lines of communication, and providing constructive feedback between the 25 OWS and the WF.

8.11.2.2. Perform data save procedures when notified of an in-flight/ground emergency or mishap in accordance with AFMAN 15-129, *Air and Space Weather Operations* and 355 WG Mishap Response Plan 91. The OWS will compile, at a minimum, satellite and radar imagery, upper air analysis charts, aviation hazards charts, surface weather observations,

TAFs, WWAs, PIREPs, AIREPs, and upper-air soundings. Compiled data and products will be valid from 12 hours prior to the event to 6 hours following the event.

8.11.2.3. Develop and maintain the OWS web sites as the primary means to disseminate theater weather products and information.

8.11.2.4. Initiate and conduct METCONs with the WF, when required. The 25 OWS will encourage and ensure WF participation in weather discussions which result in products which categorize weather threats to DMAFB and its associated military operating areas (e.g., TBO, TTDB, and SWS).

8.11.2.5. Produce, disseminate, and maintain Military Operation Area Forecasts (MOAFs) and Joint Operational Area Forecasts (JOAFs), and Combined Operational Area Forecasts (COAFs) in accordance with AFMAN 15-129, *Air and Space Weather Operations*.

8.11.2.6. Notify the WF of significant changes in OWS operations which affect support.

8.11.2.7. When resources permit, assume WWA and MWP responsibility for the DMAFB WF upon request. (**NOTE:** At the time of this publication, the DMAFB and Luke Air Force Base WF are working through the initial stages of coordinating a long-term COOP support agreement.)

8.11.2.8. Conduct wartime, contingency, and exercise weather operations.

8.11.2.9. Provide special support as requested as capabilities and resources permit.

8.11.2.10. Work with the WF to develop and maintain forecast reference materials (FRMs) and cross-feed applicable technical and training information. The WF will review OWS FRMs and IDPs annually and relay any newly created documents to them as appropriate.

8.12. National Airborne Operations Center (NAOC).

8.12.1. The 89th Operations Support Squadron Weather Flight (89 OSS/OSW) at Joint Base Andrews is the LWU for NAOC support. The 89 OSS/OSW can be contacted via telephone (DSN: 858-2840) or e-mail (**89oss.oswop@us.af.mil**).

8.12.2. The 89 OSS/OSW will:

8.12.2.1. Supply primary weather support to NAOC operations.

8.12.3. The WF will:

8.12.3.1. Provide updates to NAOC-specific weather briefings upon request.

8.12.3.2. Provide NAOC-specific WWA support IAW Attachments **2** and **3.**

8.12.3.3. Provide solar and lunar data to the NAOC Operations Team upon request.

8.12.3.4. Inform the 25 OWS Senior Duty Officer (SDO) of NAOC arrival and departure via telephone (DSN: 228-7655) or e-mail (**25.ows.sdo@us.af.mil**) using the declassified mission identifier.

8.13. President of the United States (POTUS).

8.13.1. The White House Military Office (WHMO), Presidential Weather Operations (PWO), is the LWU for POTUS support. The WHMO PWO can be contacted via telephone COMM: (202) 757-1060 or e-mail at: **weather@whmo.mil**.

8.13.2. The WF will:

8.13.2.1. Provide aircrew environmental data upon request.

8.13.2.2. Coordinate with the forecaster at the WHMO PWO for actual briefing support.

8.14. 309th Aerospace Maintenance and Regeneration Group (AMARG).

8.14.1. The WF will notify AMARG Job Control of all local and AMARG-specific WWAs in accordance with Attachments **2** and **3**.

8.15. 355th Maintenance Group (355 MXG).

8.15.1. During monsoon season (15 July to 30 September), the WF will:

8.15.1.1. Generate and disseminate a 3-day forecast to the 355 MXG Maintenance Operations Control Center (MOCC) Monday through Friday. The WF will upload the briefing to the WF SharePoint and e-mail a link to the MOCC Organizational Inbox.

8.15.1.2. Provide an in-person briefing to the 355 MXG/CC upon request or whenever severe weather is forecasted.

8.15.2. Outside monsoon season (1 October to 14 July), the WF will:

8.15.2.1. Generate and disseminate a 3-day forecast to the 355 MXG Maintenance Operations Control Center (MOCC) on Monday, Wednesday, and Friday. The WF will upload the briefing to the WF SharePoint and e-mail a link to the MOCC Organizational Inbox.

8.15.2.2. Provide an in-person briefing to the 355 MXG/CC upon request or whenever a hard freeze advisory is forecasted.

8.15.3. The 355 MXG will:

8.15.3.1. Provide the WF a minimum of one-hour advance notice for additional requests for 3-day forecasts or in-person weather briefings.

8.15.3.2. Provide the WF a minimum of one-hour advance notice for any changes to in-person briefing times or locations.

8.16. RED FLAG RESCUE.

8.16.1. The WF is the LWU for all iterations of Exercise RED FLAG Rescue.

8.16.2. The WF will:

8.16.2.1. Participate in exercise planning when requested.

8.16.2.2. Provide weather support as needed in accordance with AFMAN 15-129, *Air and Space Weather Observations*.

Chapter 9

BACKUP AND EVACUATION PROCEDURES

9.1. General. In the event of a communications outage or if unforeseen circumstances necessitate the evacuation of weather personnel from the Base Operations facility, the WF will continue to provide tailored weather support to DMAFB units and agencies as outlined in this chapter in accordance with AFMAN 15-111, *Surface Weather Observations* and AFMAN 15-129, *Air and Space Weather Operations*.

9.2. Communication Outages. The WF uses JET as its primary dissemination tool for surface weather observations and WWAs. If JET becomes inoperable, the ASF duty forecaster will use alternate means of disseminating each of these products.

9.2.1. **Observations.** The ASF duty forecaster will first disseminate the observation locally by contacting the ATC, SOF, and Airfield Management via telephone. Afterwards, the forecaster will disseminate the observation via AFW-WEBS. If both systems are inoperable due to a base network outage, the forecaster will utilize the backup commercial internet to access these tools and disseminate the observation. As a last resort, the forecaster may contact off-base WFs to disseminate observations.

9.2.2. **WWAs.** The ASF duty forecaster will disseminate WWAs via telephone to the required contacts identified in **Attachment 3**. These agencies will, in turn, notify other customers requiring notification in accordance with **Attachment 3**. The ASF duty forecaster will document the manual dissemination of each WWA using AF Form 3806, *Weather Watch Advisory Log* and AF Form 3807, *Watch/Warning Notification and Verification*.

9.3. Power Outages. The Base Operations facility (Building 4820) is equipped with a backup generator which will automatically activate in the event of a power outage. This allows the WF to continue providing weather services to supported units without significant interruption. In case of a catastrophic power outage which renders the backup generator inoperable, the WF will evacuate to the respective ASF or MIF alternate operation locations (AOLs).

9.4. Alternate Operating Locations (AOLs).

9.4.1. If unforeseen circumstances (e.g., a fire or weather-related damage to the building) necessitate the evacuation of weather personnel from the Base Operations facility, the WF will resume operations from one of its two AOLs:

9.4.1.1. **ASF.** Transient Alert, Building 4826 (DSN: 228-4292).

9.4.1.2. **MIF.** 354th Fighter Squadron, Building 4800 (DSN: 228-4788).

9.4.2. Upon arrival to the AOL, the forecaster will notify ATC, SOF, Command Post, Airfield Management, MOCC, and the 25 OWS of the evacuation and will resume operations in accordance with AFMAN 15-111, *Surface Weather Observations*; AFMAN 15-129, *Air and Space Weather Operations* and local standard operating procedures (SOPs).

9.4.3. Because the PMSV radio will be unavailable during the evacuation, ATC will relay weather requests from aircrews to the Luke AFB WF on frequency 267.4 MHz

9.4.4. The WF will monitor weather information from the AN/FMQ-19, when accessible, using the evacuation laptop and the base network. If automated observations are unavailable, the ASF duty forecaster will employ backup observing procedures using the Kestrel.

9.4.5. Forecasters will notify required agencies when it is deemed to be safe to return to the primary operating location.

9.5. Catastrophic Failure. If circumstances arise that prevent the WF from being able to provide weather services to supported units and agencies, the 25 OWS will assume responsibility for WWAs and MWPs. (**NOTE:** At the time of this publication, the DMAFB and Luke Air Force Base WF are working through the initial stages of coordinating a long-term COOP support agreement.)

SCOTT C. MILLS, Colonel, USAF
Commander, 355th Wing

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 15-1, *Weather Operations*, 13 November 2019

DAFI 10-2501, *Emergency Management Program*, 10 March 2020

DAFI 91-204, *Safety Investigations and Reports*, 9 March 2021

AFI 10-208, *Continuity of Operations (COOP) Program*, 9 October 2018

AFI 15-127, *Weather Training*, 26 January 2021

AFI 15-128, *Weather Force Structure*, 20 June 2019

DAFI 48-151, *Thermal Injury Prevention Program*, 1 May 2022

AFI 90-201, *The Air Force Inspection Program*, 19 November 2018

AFI 90-802, *Risk Management*, 31 March 2019

DAFMAN 91-223, *Aviation Safety Investigations and Reports*, 13 Sep 2018

AFMAN 10-206, *Operational Reporting (OPREP)*, 17 June 2018

AFMAN 11-210, *Instrument Refresher Program*, 20 December 2021

AFMAN 13-204, Volume 2, *Airfield Management*, 21 July 2020

AFMAN 13-204, Volume 3, *Air Traffic Control*, 21 July 2020

AFMAN 15-111, *Surface Weather Observations*, 11 March 2019

AFMAN 15-124, *Meteorological Codes*, 15 January 2019

AFMAN 15-129, *Air and Space Weather Observations*, 8 July 2020

Installation Data Page, 25 OWS with DMAFB WF (355 OSS/OSW), 3 September 2021

Annex H, 355 WG POTUS Visit Plan, 17 January 2014

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

ADS—Automated Dissemination System

AFAS—Air Force Automation System

AFW-WEBS—Air Force Weather Web Services

AGL—Above Ground Level

AIREP—Aircraft Report

AMARG—Aerospace Maintenance and Regeneration Group

AMWP—Airfield Mission Weather Product

AOL—Alternate Observing Location

AOR—Area of Responsibility

ASF—Airfield Services Function

ATC—Air Traffic Control

BEF—Bioenvironmental Engineering Flight

C2—Command and Control

CAT—Crisis Action Team

CBRN—Chemical, Biological, Radiological, and Nuclear

CDM—Chemical Downwind Message

COAF—Combined Operations Area Forecast

COOP—Continuity of Operations

CUB—Commander's Update Brief

CWW—Cooperative Weather Watch

DA—Density Altitude

DLT—Desired Lead Time, Desert Lightning Team

DMAFB—Davis-Monthan Air Force Base

DSN—Defense Switched Network

EOC—Emergency Operations Center

EMNS—Emergency Mass Notification System

EWO—Emergency War Order

F—Fahrenheit

FBWOS—Fixed Base Weather Observing System

FITS—Fighter Index of Thermal Stress

FLIP—Flight Information Publication

FRL—Frostbite Risk Level

FRM—Forecast Reference Material

GOES—Geostationary Operational Environmental Satellite

HF—High Frequency

ICAO—International Civil Aviation Organization

IDP—Installation Data Page

IRC—Instrument Refresher Course

IWWC—Integrated Weather Warning Capability

JET—Joint Environmental Toolkit

JOAF—Joint Operation Area Forecast

KDMA—Davis-Monthan Air Force Base's four-letter ICAO identifier

L—Local time

LWU—Lead Weather Unit

METCON—Meteorological Conference

METWATCH—Meteorological Watch

MIF—Mission Integration Element

MISSIONWATCH—Mission Meteorological Watch

MOA—Military Operating Area

MOAF—Military Operation Area Forecast

MOCC—Maintenance Operations Control Center

MSL—Mean Sea Level

MWP—Mission Weather Product

MX—Maintenance

NAOC—National Airborne Operations Center

NEXRAD—Next-Generation Radar

NHC—National Hurricane Center

NOTAM—Notice to Air Missions

NWS—National Weather Service

OPREP—Operational Report

OWS—Operational Weather Squadron

PA—Pressure Altitude

PEX—Patriot Excalibur

PIREP—Pilot Report

PMSV—Pilot-to-Metro-Service

POTUS—President of the United States

TRACON—Terminal Radar Approach Control

RAWS—Radar, Airfield, and Weather Systems

RVR—Runway Visual Range

SAR—Search and Rescue

SATCOM—Satellite Communications

SCA—Sensor Collection Appliance

SDO—Senior Duty Officer

SIB—Safety Investigation Board

SIF—Staff Integration Function

SLP—Sea Level Pressure

SM—Statute Miles

SOF—Supervisor of Flying

SOP—Standard Operating Procedures

SWAP—Severe Weather Action Procedures

SWAT—Severe Weather Action Team

TAF—Terminal Aerodrome Forecast

TC-TAP—Tropical Cyclone Threat Assessment Product

TDA—Tactical Decision Aid

TMOS—Tactical Meteorological Observing System

URC—Unit Radar Committee

WA—Weather Advisory

WBGT—Wet Bulb Globe Temperature

WF—Weather Flight

WIT—Wing Inspection Team

WW—Weather Warning

WWAs—Watches, Warnings, and Advisories

WX—Weather

Z—Zulu time

Attachment 2

WATCHES, WARNINGS, AND ADVISORIES

Table A2.1. Watch Criteria and Desired Lead Times for DMAFB

Watch Type	Criteria	DLT
Tornado	The potential for Tornado or Funnel Cloud exists	As potential warrants
Damaging Winds	The potential for Damaging Winds ≥ 50 knots exists	As potential warrants
Damaging Hail	The potential for Damaging Hail ≥ 3/4 inches exists	As potential warrants
Freezing Precip	The potential for Freezing Precipitation exists	As potential warrants
Heavy Snow	The potential for Heavy Snow ≥ 2 inches in 12 hours exists	As potential warrants
Heavy Rain	The potential for Heavy Rain ≥ 2 inches in 12 hours exists	As potential warrants
Lightning	The potential for Lightning within 5 nautical miles exists	30 minutes
Lightning (1)	The potential for Lightning within 5nm of AMARG exists.	30 minutes
(1) The lightning watch for AMARG is listed in IWWC under 'AZ111 AMARG'		

Table A2.2. Warning Criteria and Desired Lead Times for DMAFB

Watch Type	Criteria	DLT
Tornado	Forecasted Tornado or Funnel Cloud	30 minutes
Damaging Winds	Forecasted Damaging Winds ≥ 50 knots	60 minutes
Strong Winds	Forecasted Strong Winds ≥ 35 knots but < 50 knots	60 minutes
Damaging Hail	Forecasted Damaging Hail ≥ 3/4 inches	60 minutes
Large Hail	Forecasted Large Hail ≥ 1/2 inches but < 3/4 inches	60 minutes
Freezing Precip	Forecasted Freezing Precipitation	90 minutes
Heavy Snow	Forecasted Heavy Snow ≥ 2 inches in 12 hours	90 minutes

Heavy Rain	Forecasted Heavy Rain ≥ 2 inches in 12 hours	90 minutes
Lightning	Observed Lightning within 5 nautical miles	As observed
Lightning (1)	Observed Lightning within 5nm of AMARG	As observed
(1) The observed lightning warning for AMARG is listed in IWWC under 'AZ111 AMARG'		

A2.1. Blizzard. While AFMAN 15-129 defines a blizzard as a standardized warning; it is not required by local customers due to the exceedingly low potential for occurrence. Blizzard conditions are defined as meeting the following criteria:

A2.1.1. Surface visibility must be less than or equal to 1/4 statute miles (400 meters).

A2.1.2. Falling or blowing snow must be present.

A2.1.3. Winds (sustained or gusts) must be greater than or equal to 30 knots.

A2.1.4. The storm must last for greater than or equal to 3 hours.

A2.2. Sandstorm. While AFMAN 15-129 defines a sandstorm as a standardized warning; it is not required by local customers due to the exceedingly low potential for occurrence.

Table A2.3. Advisory Criteria and Desired Lead Times for DMAFB

Watch Type	Criteria	DLT
Crosswinds	Forecasted Crosswinds > 25 knots	30 minutes
Hard Freeze	Forecasted Hard Freeze Temperatures are expected to reach less than 32°F within the next 24 hours and last ≥ 8 hours	480 minutes
Turbulence	Forecasted Moderate or Greater Turbulence not associated with thunderstorms for DMAFB, Flying Ranges, and the LFA < 15,000 feet.	60 minutes
Icing	Forecasted Moderate or Greater Icing not associated with thunderstorms for DMAFB, Flying Ranges, and the LFA < 15,000 feet.	60 minutes
Lightning	Observed Lightning within 10 nautical miles	As observed
NWS Flood Forecast	Observed NWS Flood Forecast is issued within 10 nautical miles of DMAFB	As observed
Temperature	Observed Temperature ≤ 45°F	As observed
Temperature	Observed Temperature ≥ 95°F	As observed
Temperature	Observed Temperature ≥ 113°F	As observed
Sustained Wind	Observed Sustained Wind ≥ 14 knots	As observed

Peak Wind	Observed Peak Wind ≥ 20 knots	As observed
Peak Wind	Observed Peak Wind ≥ 30 knots	As observed
Peak Wind	Observed Peak Wind ≥ 35 knots	As observed
Peak Wind	Observed Peak Wind ≥ 40 knots	As observed
Crosswinds	Observed Crosswinds > 25 knots	As observed
Crosswinds	Observed Crosswinds > 35 knots	As observed
SE Tailwind	Observed Southeast Tailwind > 20 knots	As observed
LLWS	Observed Low-Level Wind Shear below 2,000 feet AGL	As observed
Induction Icing	Observed Induction Icing conditions (temperature between 19°F and 45°F with a dew point depression ≤ 9°F or observed mist, fog, or precipitation)	As observed
Icing	Observed Moderate or Greater Icing from the surface to 15,000 feet MSL	As observed
Turbulence	Observed Severe or Greater Turbulence from the surface to 15,000 feet MSL	As observed

Table A2.4. Advisory Criteria and Desired Lead Times for DMAFB (Special Support)

Watch Type	Criteria	DLT
Hail (1)	Forecasted Hail < 1/2 inches	30 minutes
Winds (1)	Forecasted Surface Winds ≥ 25 knots but < 35 knots	30 minutes
Lighting (1)	Observed Lightning within 25 nautical miles	As observed
Lighting (1)	Observed Lightning within 50 nautical miles	As observed
Crosswinds (1)	Observed Crosswinds ≥ 20 knots	As observed
Icing (1)	Observed Moderate or Greater Icing below 10,000 feet within 50 nautical miles for Category II aircraft not associated with thunderstorms	As observed
Turbulence (1)	Observed Moderate or Greater Turbulence below 10,000 feet within 50 nautical miles for Category II aircraft not associated with thunderstorms	As observed
Ceiling (1) (2)	Observed Ceiling < 300 feet AGL or visibility < 1 statute mile	As observed
Temperature (2)	Observed Temperature ≤ 32°F with precipitation or standing water	As observed

Sustained Wind (2)	Observed Sustained Wind ≥ 35 knots	As observed

NOTES:

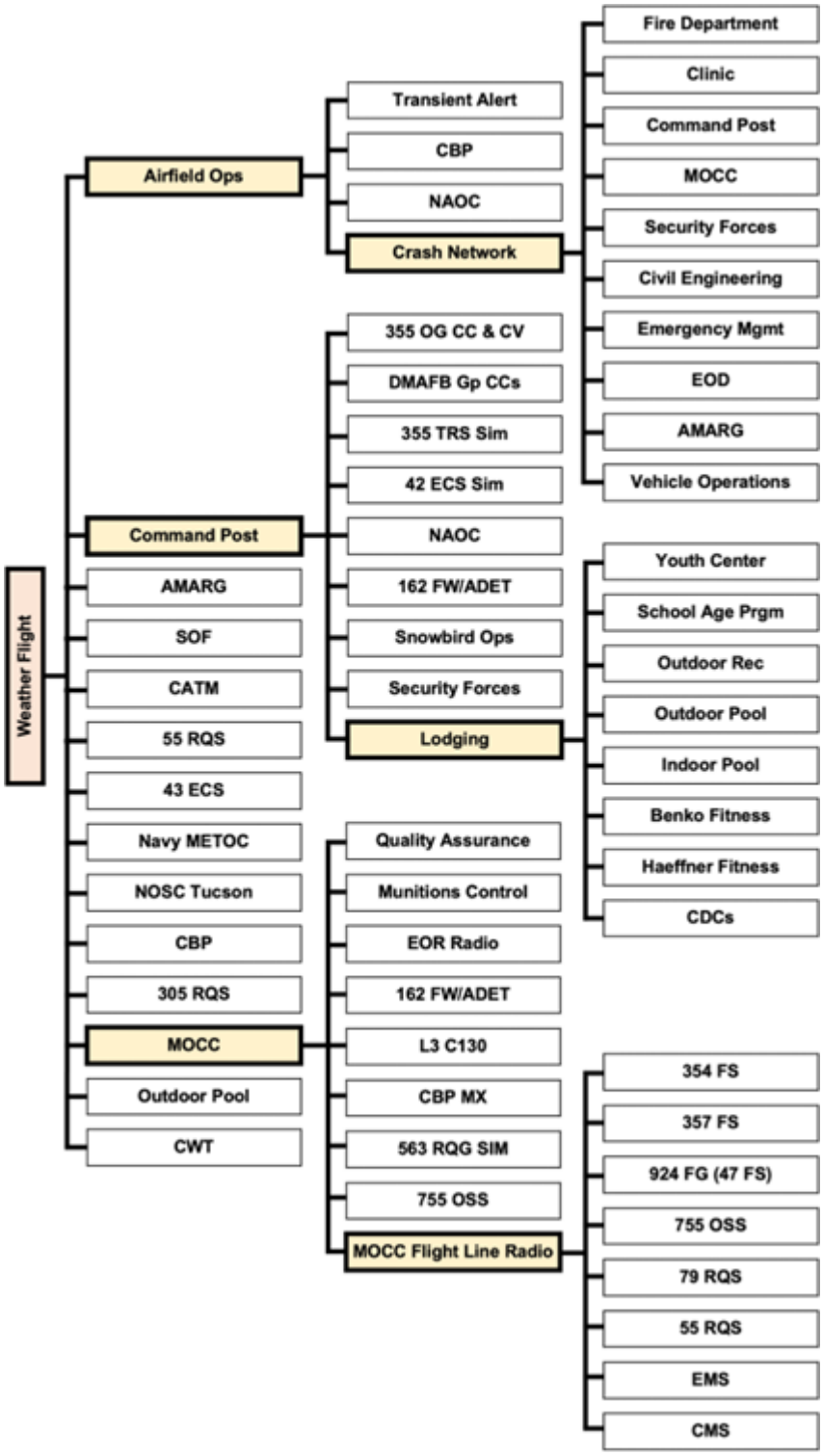
(1) These advisories are issued only when NAOC is present at DMAFB. The WF and CP are responsible for disseminating these advisories to the NAOC POC. These advisories are listed in IWWC under 'SSS6 DMAFB Special Support'.

(2) These advisories are issued in support of the 162nd Fighter Wing ADET operations. The WF and CP are responsible for disseminating these advisories to the 162 FW/ADET POC. These advisories are listed in IWWC under 'SSS7 DMAFB 162 FW/ADET'.

Attachment 3

WWA DISSEMINATION TREE

Figure A3.1. Weather Watch, Warning, and Advisory Dissemination Tree.



A3.1. Dissemination to ATC and SOF. JET will not automatically disseminate WWAs to ATC or SOF. ATC will be notified of the issuance of WWAs via the JET/AFAS interface. The ASF duty forecaster will call the SOF and notify them of the issuance of WWAs in accordance with local procedures.

A3.2. Dissemination via Secondary Crash Net. In accordance with AFMAN 13-204, Volume 2, *Airfield Management*, Airfield Management maintains and operates the secondary crash net, which is used to disseminate emergency information to selected agencies. In relation to weather services, Airfield Management will only activate this network to disseminate forecast or observed warnings:

A3.2.1. **Tornado or funnel cloud.**

A3.2.2. **Damaging winds** (greater than or equal to 50 knots).

A3.2.3. **Strong winds** (greater than or equal to 35 knots but less than 50 knots).

A3.2.4. **Damaging hail** (greater than or equal to 3/4 inch).

A3.2.5. **Large hail** (greater than or equal to 1/2 inch but less than 3/4 inch).

A3.2.6. **Freezing precipitation.**

A3.2.7. **Heavy snow** (greater than or equal to 2 inches within 12 hours).

A3.2.8. **Heavy rain** (greater than or equal to 2 inches within 12 hours).

A3.2.9. **Observed lightning within 5 nautical miles.**