BY ORDER OF THE COMMANDER
MACDILL AIR FORCE BASE (AMC)

MACDILL AIR FORCE BASE
INSTRUCTION

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Weather

WEATHER SUPPORT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Weather Operations*. It establishes responsibilities, weather support procedures and provides general information for weather services, including weather observations and forecasts, weather watches, warnings, and advisories (WWAs), space weather data, information dissemination, and base-wide reciprocal support. This publication applies to units assigned to the 6th Air Refueling Wing (6 ARW) and units assigned, attached, or supported by MacDill Air Force Base (AFB). This instruction applies to the 927th Air Refueling Wing (927 ARW). This publication does not apply to the United States Space Force or Air National Guard. Ensure all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction (AFI) 33-322, *Records Management and Information Governance Program*, and are disposed in accordance with (IAW) the Air Force Records Disposition Schedule (RDS), which is located in the Air Force Records Information Management System (AFRIMS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all direct supplements must be routed to the OPR of this publication for coordination prior to certification and approval. Compliance with the attachments in this publication is mandatory. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See Department of the Air Force Manual (DAFMAN) 90-161, *Publishing Processes and Procedures*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of

command to the appropriate Tier waiver approval authority, or alternately, to the requestor's commander for non-tiered compliance items.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include: Added new operational hours and information. Revised **Chapter 2** to implement changes in weather observing procedures as directed by Air Force Manuel (AFMAN) 15-111, *Surface Weather Observations*, with regards to augmenting the Fixed Base Weather Observing System (FBWOS). Added Weather Flight (WF) Terminal Aerodrome Forecast (TAF) production. Added weather briefing productions by WF personnel for MacDill Air Force Base (MAFB)-assigned non-Integrated Flight Management (IFM) sorties. Revised new 5-day forecast template as part of the Wing Standup presentations. Revised the Tropical Weather Advisory product to include the new 5-day stoplight decision matrix. Revised the list of MAFB Weather Watches Warnings and Advisories. Removal of all support and references to the 310th Airlift Squadron, the National Oceanic & Atmospheric Administration (NOAA) hurricane hunters and all Aero Club activities.

Chapter 1

GENERAL INFORMATION

1.1. Introduction. The 6th Operations Support Squadron Weather Flight (6 OSS/OSW), the 618th Air Operations Center (AOC) Tanker Airlift Control Center (TACC) Weather Directorate (618 AOC/WXD) and the 26th Operational Weather Squadron (26 OWS), are the official weather information agencies for MAFB. These agencies provide weather information in support of the 6th Air Refueling Wing (6 ARW), the 927th Air Refueling Wing (927 ARW) and all other units assigned, attached, or supported by MAFB. 618 AOC/WXD is commonly referred to as TACC Weather throughout this document. The 6 OSS/OSW is commonly referred to as the Weather Flight (WF) and is the focal point for all weather-related issues for MAFB. This instruction is reviewed and revised no greater than biennially or IAW with host/parent unit procedures if the time is less than biennially.

1.1.1. Air Force publications outline the basic concepts and procedures for weather operations.

1.1.2. This MAFB Weather Support Plan (WSP) establishes local procedures to meet mission requirements.

1.2. Concept of Operations.

1.2.1. 6 OSS Commander (6 OSS/CC) retains administrative control (ADCON) (for example, command and Uniformed Code of Military Justice authority, and personnel actions), operational control (OPCON), and tactical control (TACON) of weather personnel and equipment unless otherwise directed by the appropriate authority consistent with Air Force and/or Joint publications.

1.2.2. The 26 OWS at Barksdale AFB, Louisiana, provides regional and operational-level weather products and information to Air Force and Army units in the southeast region of the Continental United States (CONUS).

1.2.3. The WF and TACC Weather are the primary source of tailored weather services in support of the 6 ARW, the 927 ARW, various headquarters elements, and visiting aircrews. The WF and TACC Weather make every effort to ensure that mission-limiting weather is anticipated and exploited, and that safety and resource protection (RP) are maintained.

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

1.3. Responsibilities. General responsibilities of the 26 OWS and WF are outlined in AFI 15-128, *Weather Force Structure*, para 2.3.3 and 2.3.4 respectively.

1.3.1. The 26 OWS will provide regional forecast model data, surface/upper air analysis, flight hazard charts, Special Weather Statements (SWS), tropical forecasts and web-based forecast worksheets. 26 OWS may also provide flight weather briefings to transient aircraft or other assets not controlled by the 6 ARW, Support Assistance Requests (SAR) for single point/operating area products such as TAFs and warnings for operations and exercise support

outside of MAFB. Also, 26 OWS will be the Continuity of Operations (COOP) for 6 OSS/OSW and will take over TAF and resource protection support during total emergency situations such as complete power outages.

1.3.2. The WF issues the KMCF Terminal Aerodrome Forecasts (TAFs) for MAFB.

1.3.3. The WF issues all MAFB advisories, warnings, and watches.

1.3.4. The WF provides staff weather briefings/Non-Standard WPs.

1.3.5. The WF creates Mission Weather Products (MWPs) that fuse theater scale products with local mission requirements to enable the direct inject of weather impacts into warfighter planning and/or execution. Upon request, the WF provides flight weather briefings for all 6 ARW and 927 ARW non-Integrated Flight Management (non-IFM) sorties through Global Decision Support System 2 (GDSS-2) and provide or arrange for walk-in requests from transient aircrews IAW WF duty priorities listed in **Table 1.1**.

1.3.6. TACC Weather provides flight weather briefings for all 6 ARW and 927 ARW IFM sorties through GDSS-2.

1.3.7. MacDill AFB Installation Data Page. The WF and 26 OWS coordinate on and maintain the MAFB Instillation Data Page (IDP). Data page details include TAF specification and amendment criteria, WWA thresholds, desired lead times, mission impacts, unit information, Joint Environmental Toolkit (JET) back-up contacts and local outage back-up information. **https://26ows.us.af.mil/tech_ref/idp/index.cfm?icao=KMCF**

1.3.8. Duty Priorities. All WF tasks cannot be accomplished simultaneously. Therefore, IAW AFMAN 15-129, *Air and Space Weather Operations*, the WF has established the duty priorities listed in **Table 1.1** based on their order of relative importance to mission accomplishment. Anticipation of all situations affecting MAFB operations is not possible. WF personnel will sound operational risk management principles to determine the need to recall additional personnel to assist with meeting surges in operations.

Table 1.1. 6 OSS/OSW Duty Priority Listing.

Priority	Duties
1	Wartime defense of the duty site/location
2	Perform Emergency War Order Tasks (e.g., Deploy Personnel)
3	Execute Evacuation / Continuity of Operations Plan
4	Issue/Disseminate Imminent Hazardous Weather Warnings
5	Respond to Aircraft/Ground Emergencies
6	Issue/Disseminate Imminent Weather Advisories
7	Respond to PMSV calls supplementation/backup
8	Disseminate weather observation
9	Disseminate Urgent PIREPs (UUAs)
10	Disseminate Terminal Aerodrome Forecasts
11	Provide Flight Weather Briefings

12	Collaborate WPs with Supported Units
13	METWATCH/Amend Weather Products
14	Respond to Support Assistance Request (SAR) or Request for Information
15	Provide Staff Briefings / Non-Standard WPs
16	Accomplish Weather Functional Training
17	Accomplish Administrative Tasks

1.4. Hours of Operation .

1.4.1. WF. Airfield and mission services are normally available on a 24/7 basis, with the exception of authorized airfield closures. Staff services are available Monday-Friday 0730L-1630L or as required.

1.4.1.1. Modified duty hours that do not conform with airfield operating hours must be based on sound risk management procedures that include criteria for recalling standby weather personnel for augmentation and resource protection support, as required. Modified duty hours will be documented in writing and signed/approved by no lower than the 6th Operations Group (6 OG/CC) or delegate.

1.4.1.1.1. IAW AFI 11-208, a Notice to Airmen (NOTAM) will be issued for changes in service hours that do not exceed 90 days. Changes in service hours anticipated to exceed 90 days will be reflected in the appropriate Flight Information Publication (FLIP).

1.4.1.1.2. The WF will maintain a forecaster on telephone standby during modified weather service hours. WF forecaster recall requirements are outlined in **para. 2.8.3**.

1.4.2. WF Leadership can implement the use of remote weather flight operations

1.4.3. 26 OWS and TACC Weather. Hours of operation are 24/7, 365 days a year.

1.4.4. A web-based aircrew briefing terminal is located in the Airfield Management flight planning room. This briefing terminal allows aircrews to self-brief or schedule a flight weather briefing from the 26 OWS when WF personnel are tending to other higher priority tasks.

1.5. Contact Information .

1.5.1. WF. (813) 828-4405/2854 / DSN 968-4405/2854

1.5.2. WF Alternate Operating Location (AOL). (813) 828-4237 / DSN 968-4237

1.5.3. PMSV. 225.05 MHz

1.5.4. TACC Weather. (618) 229-0353 / DSN 779-0353

1.5.5. 26 OWS. (318) 529-2652/2635/2633 / DSN 331-2652/2635/2633

1.6. Continuity of Operations Plan (COOP) . Continuity of support to the installation and flying operations is susceptible to equipment and communication outages at the 26 OWS, TACC, and WF. The WF participates in various wing, 26 OWS and Air Mobility Command (AMC) COOP exercises to maintain procedures for and proficiency at tasks necessary to ensure continuity of operations.

1.6.1. WF COOP. In the event of a building evacuation, the WF relocates to the 6 OSS/OSK (Tactics) shop in building 48, room 119 (Comm (813) 828-4237 / DSN 968-4237).

1.6.2. 26 OWS COOP.

1.6.2.1. For short-term disruptions in 26 OWS support (up to 72 hours), the WF may assume flight weather briefing responsibility for transient aircraft or other assets not controlled by the 6 ARW. If the WF is unable to assume that responsibility, then it will be transferred to one of the other squadrons in the 1st Weather Group.

1.6.2.2. For long-term disruptions in 26 OWS support (greater than 72 hours), the 26 OWS plan is to resume all support from an alternate location.

1.6.3. TACC Weather COOP. IAW Air Mobility Command Instruction (AMCI) 15-101, *Weather Operations and Support*, if TACC Weather loses the capability to provide flight weather briefing services, the WF assumes responsibility for all MAFB IFM sorties. If the WF is unable to provide the required support, briefing responsibility is subsequently transferred to the 26 OWS.

Chapter 2

AIRFIELD WEATHER SERVICES

2.1. General. Airfield support includes those actions affecting the MAFB aerodrome, defined within a five (5) nautical mile (NM) radius of the airfield, or MAFB as a whole. These functions include, but may not be limited to, TAF generation, weather observing, meteorological watch, and resource protection.

2.2. Automated Observation. The FBWOS (FMQ-19) works in concert with the JET to evaluate, prepare, and transmit weather observations for MAFB. IAW AFMAN 15-111, automated systems at DoD-controlled airfields are to operate in a fully automated mode except under the conditions specified in paragraphs **2.2.7.2** and **2.2.7.4** The three basic types of observations provided are defined below in 2.2.1., 2.2.2., and 2.2.3.

2.2.1. Aviation Routine Weather Report (METAR). METAR is a routine scheduled observation disseminated locally and long-line between 55 and 59 minutes after each hour. METAR contains a complete report of wind, visibility, runway visual range, present weather and obstructions, sky condition, temperature, dew point, and altimeter setting. In addition, a METAR may contain encoded and/or plain language information that elaborates on data in the report.

2.2.2. Aviation Selected Special Weather Report (SPECI). SPECI is an unscheduled observation completed and transmitted when any of the MAFB special criteria listed in **Attachment 2** are observed or sensed. SPECI contains all data elements found in a METAR plus additional remarks that elaborate on data in the body of the report.

2.2.2.1. A SPECI is prepared and transmitted as soon as possible after the relevant criteria are observed.

2.2.2.2. Operators requiring an observation for a threshold not listed in **Attachment 2** should contact the WF at any of the numbers listed in **paragraph 1.5.1**.

2.2.2.3. **Attachment 4** contains an example SPECI weather observation.

2.2.3. Aviation Selected Local Weather Report (LOCAL). LOCAL is an unscheduled observation, not meeting SPECI criteria. When performing FMQ-19 augmentation, the WF takes a single-element LOCAL for altimeter setting, at an interval not to exceed 35 minutes, when there has been a change of 0.01 inches of mercury (iHg) or more since the last disseminated ALSTG value.

2.2.4. Point Of Observation. The official point where a weather observation is taken. On MAFB, the point of observation is where the FMQ-19 sensors are located. During periods of augmentation from the primary site, the point of observation is approximately 125 feet away from the west side of Hangar 3. When augmentation is required from the AOL, the point of observation is immediately west of building 48 at the beginning of the metal water drainage grate on the airfield.

2.2.5. Observing Location Limitations.

2.2.5.1. The FMQ-19 is properly sited, and no limitations are currently noted. However, the FMQ-19 does lie in an open, grassy field that makes it more suitable to fog development

in the winter months versus the rest of the base. Additionally, due to the high preponderance of birds at MAFB, preventative maintenance and cleaning often needs to be routinely conducted.

2.2.5.2. When augmenting observations at the primary site (Hangar 3), aircraft hangars block the observers view to the northeast through southeast. Additionally, taxiing, and parked aircraft near Hangar 3 may require WF personnel to deviate from the official observing location to avoid hazards or view their surroundings better.

2.2.5.3. When augmenting observations at the AOL, aircraft hangars block the observers view to the north through southeast. Additionally, taxiing, and parked aircraft nearby may require WF personnel to deviate from the official observing location to avoid hazards or view their surroundings better.

2.2.6. Automated FMQ-19 Observation. An automated observation is any observation evaluated, prepared, and transmitted by an observing system without human intervention. When operating in automated mode, the FMQ-19 determines sky condition based on an evaluation of sensor data gathered during the 30-minute period ending at the actual time of the observation. All other evaluated elements are based on sensor data that is within 10 minutes or less of the actual time of the observation.

2.2.7. FMQ-19 Augmentation. Augmentation is a method of having a position-qualified weather technician manually add or edit data to an observation generated by the FMQ-19. WF personnel do not augment the FMQ-19 when the airfield is closed except when tornadic activity is occurring or forecast to occur. The two augmentation processes used are supplementing and backup.

2.2.7.1. Supplementing. Supplementing is the process of manually adding meteorological information to an observation generated by the FMQ-19 that is beyond the system's capability to detect and/or report.

2.2.7.2. Supplementing procedures. WF personnel supplement observations when the airfield is open (controlled) and the weather conditions in **Table 2.1** are observed or are forecast to occur within 1 hour. Additionally, WF personnel are required to log on to an FBWOS and be prepared to supplement whenever a watch is valid, or warning has been issued for tornadic activity. Additionally, if conditions observed in **Table 2.1** are reported, then all applicable remarks are required as defined in **Table 2.2**.

Table 2.1. Mandatory Supplementary Weather Conditions.

Mandatory Supplementary Weather Conditions – Body of Report
A. Tornado (+**FC**) (Notes 1 & 2)
B. Waterspout (+**FC**) (Notes 1 & 2)
C. Funnel Cloud (**FC**) (Notes 1 & 2)
D. Freezing Precipitation (**FZDZ/FZRA**)
E. Ice Pellets (**PL**)
F. Hail (**GR**)
G. Volcanic Ash (**VA**)
H. Tower Visibility remark (Note 3)

Notes:
1. The immediate reporting of tornadic activity takes precedence over all other phenomena.
2. Be prepared to supplement whenever a tornado watch is valid or warning has been issued, regardless of airfield closure status.
3. Only required during controlled airfield hours.

Table 2.2. Mandatory Supplementary Weather Conditions – Remarks Section of Report.

Mandatory Supplementary Weather Conditions – Remarks Section of Report
A. Volcanic Eruption: (**Volcano name, direction, and distance from MAFB, date/time UTC of eruption, size description, approximate height, and direction of movement of the ash cloud and any other pertinent data**)
B. Tornadic Activity: **Tornadic activity_B/E(hh)mm_ LOC/DIR_(MOV)**
C. Augmented or Automated System (**AO2A**) or (**AO2**)
D. Tower Visibility (**TWR_VIS_vvvvv**) when surface and/or tower visibility is has decreased to less than, or if below, increased to equal or exceed 1, 2 or 3 statute mile (SM) and the control tower report differs from prevailing visibility.
E. Hailstone Size: (**GR_[size]_[Plain Language]**)
F. Snow Pellets: (**GS_[intensity]**)
G. Aircraft Mishap: (**ACFT_MSHP [Plain Language]**) Although this will be documented in-house on AF Form 3813, it will not be transmitted on any local or long-line observation report
H. Estimated Wind and/or Pressure: **WND DATA ESTMD** and/or **ALSTG/SLP ESTMD**
I. Snow Depth on Ground: (**4/sss)**
J. Corrections: (**COR hhmm**)

2.2.7.3. Backup. Backup is a method of manually providing meteorological data and/or dissemination of an FMQ-19 generated observation when the primary automated method is not operational or unavailable due to sensor and/or communication failure.

2.2.7.4. Backup Procedures. In the event of FMQ-19 malfunction or failure, back-up procedures are implemented during airfield operating hours and/or if tornadic activity is occurring or forecast to occur. WF personnel use manual techniques when performing back-up operations. When required, the WF encodes and disseminates METAR and SPECI observations IAW AFMAN 15-111. All element entries are observed within 15 minutes of the actual time of the observation with the exception of wind gusts and squalls, which are reported only if they are observed within 10 minutes of the time of the observation. When utilizing any form of pressure and/or wind backup equipment, pressure and/or wind values are estimated.

2.3. TAFs. MAFB TAFs are produced and disseminated by the WF IAW AFMAN 15-129, *Air and Space Weather Operations,* AFMAN 15-124, *Meteorological Codes*, and the MAFB IDP. TAFs are valid for 30 hours, apply to the area within 5NM of the MAFB airfield complex, and are issued at 0100, 0900, and 1700 Zulu time. **Attachment 3** lists forecast specification and amendment criteria. **Attachment 5** contains an example of a typical MAFB TAF.

2.4. Resource Protection (RP) Products. Tropical Weather Advisories (TWAs) and weather WWAs are special notices used to alert decision makers that hazardous weather is occurring or that there is a potential for hazardous weather to occur within the area of operations. A Customer Response Matrix for WWAs is listed in **Attachment 7**.

2.4.1. TWA. A notice issued by the WF to assist with RP decisions. TWAs relay observed and forecasted information about a tropical cyclone, which threatens to impact MAFB. TWAs are first issued via email to base leadership when a tropical cyclone is projected to be within 300nm of MAFB or develops within 300nm. A TWA may be issued earlier if instructed by base leadership. TWAs will then be sent within one hour of the 0500 local and 1700L of a National Hurricane Center (NHC) updated advisory and continue until WF leadership determines it is no longer necessary.

2.4.2. Weather Watch. A watch is a special notice to notify installation personnel and supported units of a potential for environmental conditions of such intensity as to pose a hazard to life or property. Watches are issued for the criteria defined in **Table 2.3** and are valid for a 5NM radius from the center of the MAFB runway complex.

2.4.2.1. Watches are standalone products based upon potential and are unaffected by warnings or advisories for the same phenomena.

2.4.2.2. Multiple watches may be in effect at the same time.

Table 2.3. Weather Watches.

Criteria	Description	DLT	Issued By
Tornado	Potential exists for tornado or funnel cloud	APW	WF
Severe Thunderstorm	Potential exists for winds greater than or equal to 50 knots and/or hail greater than or equal to ¾ inch associated with thunderstorms	APW	WF
Damaging Winds	Potential exists for surface winds greater than or equal to 50 knots not associated with thunderstorms	APW	WF
Freezing Precipitation	Potential exists for freezing precipitation (any intensity)	APW	WF
Heavy Rain	Potential exists for accumulation of rain greater than or equal to 2 inches within 12 hours	APW	WF
Lightning	Potential exists for lightning	30 Minutes	WF

2.4.3. Forecast Weather Warning. A special notice to inform installation personnel when an established weather condition of such intensity as to pose a hazard to life or property is occurring or is expected to occur. Warnings are issued for criteria defined in **Table 2.4** and are valid for a 5NM radius from the center of the MAFB runway complex.

2.4.3.1. Only one forecast warning can be in effect at any given time for the same criteria.

2.4.3.2. Warnings provide concise information outlining environmental threats. If a warning is issued for one weather criterion and it becomes necessary to warn for another weather criterion, a new warning with a new number is issued.

2.4.4. Observed Weather Warnings. Lightning warnings are the only observed warning issued for MAFB. Lightning warnings are issued when lightning is observed within 5NM, either

visually or via the automated sensor display. Lightning warnings are cancelled when lightning has not been observed within the past 15 minutes and radar indicates thunderstorms are no longer occurring within 5NM.

Table 2.4. Weather Warnings.

Criteria	Description	DLT	Issued By
Tornado	Tornado or funnel cloud (detected by radar or visually observed) is occurring or is forecast to occur	15 Minutes	WF
Severe Thunderstorm	Damaging winds greater than or equal to 50 knots and/or hail greater than or equal to ¾ inch associated with thunderstorms is occurring or is forecast to occur	60 Minutes	WF
Moderate Thunderstorm	Strong winds greater than or equal to 35 knots but less than 50 knots and/or hail greater than or equal to ¼ inch but less than ¾ inch associated with thunderstorms is occurring or is forecast to occur	60 Minutes	WF
Damaging Winds	Damaging winds greater than or equal to 50 knots not associated with thunderstorms is occurring or is forecast to occur	60 Minutes	WF
Strong Winds	Strong winds greater than or equal to 35 knots but less than 50 knots not associated with thunderstorms is occurring or is forecast to occur	60 Minutes	WF
Freezing Precipitation	Freezing precipitation (any intensity) is occurring or is forecast to occur	60 Minutes	WF
Heavy Rain	Rain greater than or equal to 2 inches within 12 hours is occurring or is forecast to occur	60 Minutes	WF
Lightning	Lightning within 5NM is occurring	Observed	WF

2.4.5. Weather Advisories. A notice to inform end users when an established environmental condition effecting operations is occurring or is expected to occur at MAFB. Observed weather advisory criteria are defined in **Table 2.5** There are not any forecast weather advisories issued for MAFB.

Table 2.5.

Criteria	Description	DLT	Issued By
Crosswind ≥ 15 Knots	Crosswind ≥ 15 knots are observed	Observed	WF
Crosswind ≥ 25 Knots	Crosswind ≥ 25 knots are observed	Observed	WF
Crosswind ≥ 35 Knots	Crosswind ≥ 35 knots are observed	Observed	WF
Winds ≥ 25 Knots	Winds greater than or equal to 25 knots are observed	Observed	WF
Moderate or Greater Turbulence (Category II) below 10,000’	Moderate or greater turbulence (Category II) below 10,000’ is observed	Observed	WF
Moderate or Greater Icing below 10,000’	Moderate or greater icing below 10,000’ is observed	Observed	WF

Low-Level Wind Shear (LLWS)	Low-level wind shear not associated with thunderstorms from the surface to 2,000 feet above ground level is observed	Observed	WF
Note: Crosswinds are calculated based on the maximum observed wind gust or sustained speed if no gusts are occurring and worst case observed magnetic direction including variability.			

2.4.6. WWA Numbering Scheme. Watches, warnings, and advisories are numbered consecutively by identifying the type of weather message (watch, warning, or advisory) followed by a five-digit number. The first two numbers indicate the current month while the second three numbers indicate the sequence number. For example, the message "Weather Warning 02-005" means the month is February (02) and this is the fifth (005) warning issued in the month. The message "Weather Advisory 12-013" means the month is December (12) and this is the thirteenth (013) advisory issued in the month. An example of an observed weather advisory is contained in **Attachment 6**.

2.4.7. WWA Upgrades/Downgrades. An upgrade is a change to an active WWA resulting from adding additional WWA phenomenon or an increase in phenomenon intensity that crosses to a higher threshold (e.g., winds increase from 35 knots to 50 knots). A downgrade is a change to an active WWA resulting from removing WWA phenomenon or a decrease in phenomenon intensity that crosses to a lower threshold (e.g., hail decreases from 3/4 inch to 1/4 inch).

2.4.8. WWA Amendments. Amendments are issued when an active WWA no longer adequately describes a phenomenon's expected occurrence. All amendments are issued with a new WWA number and should clearly state what affect the new WWA has on any previously issued notices.

2.4.9. WWA Extensions. Extensions are issued when a phenomenon's occurrence is expected to last longer than originally forecast. Extensions are issued prior to the expiration of the original WWA utilizing the same WWA number. Extensions should clearly state what effect they have on any previously issued notices.

2.4.10. WWA Cancellation. WWA are canceled when the weather phenomena are no longer occurring or expected to occur. WWAs not extended or canceled automatically expire at the end of the valid period. Observed advisories are canceled when the criteria have not occurred in the last 30 minutes. See **paragraph 2.4.4** for cancellation of observed lightning warnings.

2.5. Dissemination Process.

2.5.1. Observations. Observations taken by either the FMQ-19 or the weather technician are disseminated via the JET software. When JET is non-operational, the WF relays observations to the following organizations in order of priority listed in **Table 2.6**.

Table 2.6.

Observation Notification Priority .

Agency	Contact Info
1. 6 OSS/OSAT (Air Traffic Control)	DSN 968-4492
2. 6 ARW/CP (Command Post)	DSN 968-4361

2.5.2. TAFs. The WF disseminates TAFs via JET. If JET is non-operational, the WF relays TAFs to the following organizations in order of priority listed in **Table 2.7**.

Table 2.7.

Agency	Contact Info
1. 6 OSS/OSAT (Air Traffic Control)	DSN 968-4492
2. 6 ARW/CP (Command Post)	DSN 968-4361

2.5.3. TWAs. WF delivers TWAs to a base leadership email distribution list.

2.5.4. WWAs. The 26 OWS or the WF enters WWAs into JET for dissemination to Air Traffic Control (ATC), 6 ARW/CP and Airfield Management Operations (AMOPS). If JET is non-operational, the WF relays WWAs to the following organizations in order of priority listed in **Table 2.8** Upon notification, 6 ARW/CP will further disseminate these WWAs to additional base customers via email or AtHoC based off their own internal procedures.

Table 2.8.

Agency	Contact Info
1. 6 OSS/OSAT (Air Traffic Control)	DSN 968-4492
2. 6 ARW/CP (Command Post)	DSN 968-4361
3. 6 OSS/OSAM (AMOPS)	DSN 968-0002

2.5.4.1. Lightning Warnings. All lightning warnings are disseminated by the 6 ARW/CP to the base populace via the Base Public Address Warning System (BPAWS).

2.5.4.2. Tornado Warnings. When a tornado is occurring and/or imminent, the WF will immediately call 6 ARW/CP, who will in-turn broadcast a 3-to-5-minute steady tone over the base loudspeakers. Next, WF personnel will disseminate the warning via JET.

2.6. Cooperative Weather Watch (CWW). The WF and ATC have established a CWW IAW AFMAN 15-111. The agreement outlines each unit's responsibilities when specific meteorological phenomena are observed. Of primary concern is the report of tower visibility differing from the prevailing surface visibility, local PIREPs**,** and any occurrence of previously unreported weather conditions that could affect flight safety or be critical to the safety or efficiency of other local operations and resources. WF technicians and ATC personnel should thoroughly understand and be able to execute the CWW agreement. Specifically:

2.6.1. MAFB ATC personnel will notify the weather technician when:

2.6.1.1. The observed tower prevailing visibility decreases to less than or increases to equal or exceed 4SM and is different than the surface prevailing visibility.

2.6.1.2. There are operationally significant changes to the tower prevailing visibility and the tower visibility is different than the currently reported surface prevailing visibility.

2.6.1.3. PIREPs are received of previously unreported weather conditions that could affect flight safety or be critical to the safety or efficiency of other local operations and resources. PIREP information should be relayed to weather personnel no later than 5 minutes after receipt.

2.6.1.4. Tower personnel detect significant weather phenomena (i.e., lightning, precipitation, low ceilings, etc.) and the phenomena is not reflected in the current surface weather observation.

2.6.2. MAFB weather technicians will:

2.6.2.1. Re-evaluate the surface weather observation when tower personnel report significant weather phenomena not reflected in the current observation.

2.6.2.2. Re-evaluate the surface prevailing visibility, as soon as practicable, upon notification that the control tower prevailing visibility is different than the surface prevailing visibility and either the surface visibility or tower visibility is less than 4 miles.

2.6.2.2.1. Use control tower values of prevailing visibility as a guide in determining the surface visibility when the view of portions of the horizon is obstructed by buildings, aircraft, etc.

2.6.2.2.2. Include a tower visibility remark in the next METAR or SPECI when either the surface prevailing visibility or the control tower prevailing visibility is less than 4SM and they differ by one or more reportable values.

2.6.3. ATC Limited Observation Training. The WF oversees the MAFB Limited Observation Training Program. ATC personnel requiring training should contact the WF NCOIC at DSN 968-2374/Commercial (813) 828-2374 to schedule an appointment.

2.7. PMSV Support. Weather information is available via PMSV during duty hours on Ultra High Frequency (UHF) 225.05 MHz. The duty forecaster monitors PMSV traffic for all aircraft contacts. Additionally, Patrick AFB monitors the same frequency so it is possible they may answer calls outside the range of the MAFB WF. Lastly, the WF can provide PMSV support through a phone patch through the 6 ARW/CP (DSN 968-4361/Commercial (813) 828-4361). PMSV outages are discussed in **paragraph 5.3.2**.

2.8. Emergency Actions Response.

2.8.1. Aircraft Mishap. When notified on an aircraft mishap, the WF initiates a save of applicable data used in the development of any weather products provided. Archived weather data is available to investigating agencies upon request.

2.8.1.1. If the WF provided the MWP, the WF notifies the 26 OWS Operations Floor Production Supervisor of all aircraft mishaps as soon as possible after notification of the event. The WF coordinates with the 26 OWS to save all applicable data and products. If products from other OWSs were used, the WF coordinates with all applicable OWSs to ensure the correct data is saved. OWSs save sufficient data in order to fully reconstruct environmental conditions before and after the mishap.

2.8.1.2. If an OWS, TACC Weather, or another WF provided the MWP, they are responsible for conducting the data save in coordination with any other Air Force Weather units involved.

2.8.2. SWAP. The SWAP ensures sufficient manpower is available to meet the increased demand for timely weather information during significant weather events. During normal duty hours, the WF duty forecaster initiates the SWAP when any of the criteria in **Table 2.9** are

forecast to occur. Upon notification from the 26 OWS, the WF standby forecaster initiates the SWAP.

Table 2.9. SWAP Activation Criteria.

SWAP Activation Criteria	Regulation
Tornado Watch	AFMAN 15-129
Tornado Warning	AFMAN 15-129
Severe Thunderstorm Warning	AFMAN 15-129
Damaging Wind Warning	AFMAN 15-129
Heavy Snow Warning	AFMAN 15-129
Freezing Precipitation Warning	AFMAN 15-129

2.8.3. WF Forecaster Recall Requirements. The WF standby forecaster will return to work under the following circumstances:

2.8.3.1. When the airfield is closed, and standby is authorized:

2.8.3.1.1. To provide MWPs to 6 ARW and 927 ARW aircraft performing non-IFM sorties regardless of their location. WF personnel will publish all MWPs at least 4 hours prior to takeoff.

2.8.3.2. When the airfield is open (controlled):

2.8.3.2.1. Upon notification of an Aircraft Mishap.

2.8.3.2.2. The 26 OWS and/or ATC notifies the standby forecaster when FBWOS sensor display data is unavailable and/or not representative of current conditions.

2.8.3.2.3. ATC notifies the standby forecaster when the tower prevailing visibility is less than 4 miles and differs from the currently reported surface prevailing visibility.

2.8.3.2.4. To provide MWPs to 6 ARW and 927 ARW aircraft performing non-IFM sorties regardless of their location. WF personnel will publish all MWPs at least 4 hours prior to takeoff.

2.8.3.2.5. For resumption of an airfield opening, WF personnel will be present at least 1 hour prior to any scheduled launch or landing and remain at work at least 30 minutes after any scheduled takeoff before resuming standby if the airfield is scheduled to close once more.

2.8.4. Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive (CBRNE) Response. The WF works closely with Emergency Management (EM) to ensure supported commanders receive the relevant information needed to obtain a timely and accurate picture of the environmental situation. Upon request, the WF provides EM:

2.8.4.1. Surface observations and/or alphanumeric forecasts representative of the location and time of the CBRNE event.

2.8.4.2. The appropriate Chemical Downwind Messages (CDM) and/or Effective Downwind Messages (EDM).

Chapter 3

MISSION SERVICES

3.1. General. The WF, 26 OWS, and TACC Weather support the MAFB flying and non-flying missions. This chapter identifies the flying and non-flying missions and the weather support provided.

3.2. Flying Missions. The WF and TACC Weather provide weather support to the flying units listed in **Attachment 8.**

3.3. MWP. MWPs fuse theater-scale products with local mission requirements enabling the direct inject of weather impacts into warfighter planning and/or execution. The result is a product designed to provide timely, accurate, and relevant environmental information for planning and execution. MWPs should be horizontally consistent with (but not necessarily mirror) products issued by any OWS and 557th Weather Wing.

3.3.1. GDSS-2 Weather Briefings. GDSS-2 is the primary command and control (C2) system used by AMC-owned/gained flying units to obtain weather briefings. GDSS-2 provides a unique product that incorporates the requirements of all MAFB-based flying units into a common format. Updates can be obtained by calling TACC Weather at DSN 576-0353/ Commercial (618) 229-0353, or by contacting the WF at DSN 968-4405/Commercial (813) 828-4405.

3.3.2. 6 OSS/OSW Mission Execution Forecast (MEF). The 6 OSS/OSW uses a DD Form 175-1, *Flight Weather Briefing*, to provide MWPs to all non-AMC-owned/gained missions briefed by the WF. In the event of a GDSS-2 outage, the WF will complete a DD Form 175-1 (commonly referred to as a 175-1 or simply a "Dash 1") for non-IFM missions. An example 175-1 is in **Attachment 9**.

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

3.4.1. WF Briefed Sorties. The WF utilizes a continuous MISSIONWATCH process to validate that MWPs accurately reflect environmental conditions. When MWPs differ from observed conditions to the extent that it has the potential to impact operations, the WF coordinates MWP amendments/updates with the appropriate local customers. Additionally, when previously unforecasted weather conditions expose a mission to potential risk, the WF directly updates the 6 ARW/CP. The 6 ARW/CP retains responsibility for relaying updated weather information to the aircrew.

3.4.2. TACC/WXD Briefed Sorties. TACC Weather performs MISSIONWATCH and weather risk assessment for all TACC-briefed sorties. TACC uses the Weather Threat Assessment (WTA) to relay information on missions considered "at risk" based on the Operational Risk Management Thresholds identified in AMCI 15-101. Users can access the WTA at **https://tacc.us.af.mil/?action=WTAMain**.

3.4.2.1. The 6 ARW/CP automatically receives WTA notifications for wing-specific missions through a subscription service. Upon receipt of weather threat notification, the 6 ARW/CP notifies appropriate Squadron Operations Centers/aircrews to pass along weather threats and instruct the aircrew to contact TACC Weather to mitigate the threat.

3.4.2.2. The WF performs a continuous MISSIONWATCH on all non-IFM MAFB sorties. Additionally, the WF monitors GDSS-2 for situational awareness on IFM missions involving 6 ARW and 927 ARW assets. The WF coordinates with TACC Weather whenever observed weather conditions deviate significantly from the published WTA.

3.5. Post-Mission Analysis/Feedback. Aircrews should contact TACC Weather or the WF with post-mission information and/or follow-up support. TACC Weather and the WF utilize customer feedback to improve internal processes and enhance training, forecast proficiency, and product accuracy. Formal/informal feedback methods include:

3.5.1. Completion of 6 OSS/OSW feedback worksheet or TACC Weather feedback solicitation email.

3.5.2. Phone call or an e-mail to TACC Weather or the WF.

3.5.3. Face-to-face feedback after briefing and/or mission completion.

3.6. Transient Aircrew Support. Transient aircrews may submit a request for flight weather briefings (175-1s) in person or via phone using the contact information listed in **paragraph 1.5** If the WF workload is such that they are unable to support transient crew requests (see **Table 1.1** for WF duty priorities), the WF may direct aircrews to contact the 26 OWS briefing cell for flight weather information. The 26 OWS briefing cell can be reached at DSN 331-2651/2652, commercial (318) 529-2651/2652, or via web access from the aircrew briefing terminal located in the AMOPS flight planning room. **https://owsjet26.us.af.mil/portal/public/Guest/**

3.7. Non-Flying Missions. The WF and 26 OWS support various non-flying missions that are identified in **Chapter 4**. Specialized weather information can be provided to support any non-flying mission upon request. Non-governmental agencies should request weather information and support through 6 ARW Public Affairs.

3.8. Space Weather Impacts. MAFB has a wide variety of operations affected by various space weather parameters (High Frequency and Ultra High Frequency communication, radar, Global Positioning System communications, etc.). The WF and TACC Weather provide space impacts on their MWPs. More detailed space environmental situational awareness products are available at **https://26ows.us.af.mil/product/space_weather/**.

Chapter 4

STAFF SERVICES

4.1. General. Staff services are typically accomplished by WF leadership and include meteorological functions (briefings), ensuring the WF is trained and equipped for day-to-day operations, and cultivating relationships with base agencies to ensure WF support is optimal.

4.2. Staff Meteorological Functions . Staff meteorological functions aid leadership in identifying and understanding specific weather and environmental impacts. The WF is available to assist commanders in determining weather support requirements and impacts to operations. Examples of staff meteorological functions provided are:

4.2.1. 6 ARW Staff Briefings. Staff weather briefings for 6 ARW (Ops/Mxs Wing Standup) are provided as required (typically Mon, Wed and Fri). Standard information includes satellite imagery, local radar, and a 5-day MAFB weather outlook with a focus on any affected wing events and/or missions. During hurricane season, a tropical weather outlook is also provided for both the Atlantic and eastern Pacific Oceans.

4.2.2. Crisis Action Team (CAT) Briefings. The WF provides weather support as required for CAT briefings. This includes real-world emergency, exercise, and deployment briefings. Each briefing is tailored to provide the appropriate weather intelligence required by the 6 ARW and/or 927 ARW leadership.

4.2.3. Emergency Operations Center (EOC) Briefings. The WF provides weather support as required for EOC briefings. This includes real-world emergency and exercise briefings, each tailored to provide the appropriate weather intelligence required by Emergency Managers.

4.2.4. 6 ARW/XP & 927 ARW/XP. The WF provides Assumption of Alert (AoAs) and Daily Alert Briefs for Part-Task Trainers (PTTs) and other wing exercises.

4.2.5. Instrument Refresher Course (IRC) Briefings. IAW AFMAN 11-210, *Instrument Refresher Program (IRP)*, the Instrument Refresher Course (IRC) is part one of the IRP and is a classroom-based training requirement for all pilots. Weather and local-related hazards are required to be briefed. Additionally, a focus will be put on climatology for the upcoming season, WF capabilities and RP. When requested by 6 OG/OGT, preferably two weeks in advance of the brief date, WF personnel will develop and conduct the briefing.

4.2.6. Pre-Deployment Planning Briefings. The WF provides pre-deployment weather briefings as requested. Briefing content is tailored to meet customer requirements. For example, an aviation unit receives weather impacts at the deployed location on their flying mission, in addition to the standard surface weather information usually presented to ground units. A ground-based unit receives a briefing on surface temperatures, wind speed, potential for blowing sand and dust, and precipitation. Additionally, 6 LRS/LGRDX may request pre-deployment planning weather for personnel IAW OPLAN requirements.

4.2.7. Climatology Services. The WF can provide a wide variety of climatology products upon request. Example products include but are not limited to historical surface observations, long-range outlooks, global cloud cover, tropical weather, and upper-level wind climatology.

4.3. Staff Integration Functions. WF leadership ensures to the best of their ability that their unit is adequately resourced to meet both operational and staff requirements. In addition to leadership

and management of unit activities, these unit members also function as a direct interface with the supported unit commander and staff and provide direct support to C2 and planning functions. Specific integration with base agencies is outlined below.

4.3.1. 6 ARW Inspector General (IG). The WF assists in various exercises tailored to the wing's missions and may be asked to play a larger role in National Disaster Response Exercises (NDREs) such as Hurricane Exercises (HURREXs). Additionally, at least one member of the weather flight will be certified as a Wing Inspection Team (WIT) member to assist 6 ARW/IG in exercise/inspection development, execution, and grading.

4.3.2. 6 ARW Command Post (CP). The WF notifies the CP whenever the WF primary facility is evacuated and/or the AOL is activated.

4.3.3. 6 ARW Public Affairs. The WF provides tours of the WF facility for community groups and others when coordinated by Public Affairs.

4.3.4. 6 OSS Airfield Management (OSAA).

4.3.4.1. The WF provides notification of all forecasted and observed weather watches, warnings, and advisories via Integrated Weather Warnings Capability (IWWC), telephone, e-mail, or in-person during airfield hours of operations.

4.3.4.2. The WF notifies the OSAA whenever the WF primary facility is evacuated and/or the AOL is activated.

4.3.4.3. WF leadership participates as a member of the Airfield Operations Board (AOB) as directed in AFMAN 13-204V3.

4.3.5. 6 OSS Air Traffic Control Tower (OSAT).

4.3.5.1. The WF provides notification of weather WWAs via IWWC/telephone/or e-mail.

4.3.5.2. The WF notifies the OSAT whenever the WF primary facility is evacuated and/or the AOL is activated.

4.3.5.3. The WF notifies the OSAT of all outages prior to contacting any maintenance agency.

4.3.6. 6 Civil Engineering Squadron (CES). The WF provides climatology reports, as requested.

4.3.7. All Supported Flying Units (91 Air Refueling Squadron (ARS), 50 ARS, and 63 ARS). The WF provides services as outlined throughout this publication.

4.4. Reciprocal Support.

4.4.1. 6 ARW/CP.

4.4.1.1. Ensure dissemination of all WWAs to the base populace via email, AtHoc or giant voice, as defined by internal processes.

4.4.1.2. Immediately notify the WF forecaster-on-duty of any aircraft or ground mishaps (weather-related or not) requiring OPREP-3 reporting or local reporting requirements IAW AFMAN 10-206.

4.4.1.3. Subscribe to and monitor the WTA notifications for 6 ARW and 927 ARW missions.

4.4.1.4. Upon notification by either the WF of the potential for severe weather, utilize applicable Quick Reaction Checklists (QRCs) to alert wing leadership and various base agencies.

4.4.2. 6 ARW/PA. Coordinate requests for weather information from non-DoD agencies and tours of WF facilities with the WF chief or NCOIC.

4.4.3. 6 OSS/OSAA. Notify WF personnel of in-flight, ground emergencies, or mishaps and termination via the secondary crash network.

4.4.4. 6 OSS/OSAT.

4.4.4.1. Participate in and follow the procedures outlined in the CWW program.

4.4.4.2. Notify the WF of all changes in active runway.

4.4.4.3. Notify the WF of any light setting changes on the high-intensity runway lights, as required.

4.4.4.4. Provide control tower orientation training for weather personnel, as requested by WF chief or NCOIC.

4.4.4.5. Initiate radio checks to ensure proper PMSV operation, as requested by WF.

4.4.5. 6 OSS Radar Airfield Weather Systems (OSAM).

4.4.5.1. Maintain Precision Measurement Equipment Laboratory (PMEL) account for tactical meteorological aneroid barometer and ensure calibrations are conducted/documented every two years.

4.4.5.2. Perform FMQ-19 maintenance and repair of meteorological sensing equipment, and arrange for the installation, maintenance, and repair of meteorological sensing equipment maintained by contract.

4.4.5.3. Coordinate with the weather technician prior to performing maintenance on weather equipment. Ensure routine maintenance does not degrade METWATCH and/or MISSIONWATCH performed by the WF during periods of inclement weather.

4.4.5.4. Utilize the restoration priorities for meteorological sensing equipment outlined in this document.

4.4.5.5. Notify the responsible service agents for meteorological sensing equipment outages.

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

4.4.5.7. Ensure weather data are assigned repair priorities.

4.4.5.8. Ensure established maintenance response times are met.

4.4.5.9. Ensure a 24-hour point of contact for reporting outages and assigning job control numbers is available.

4.4.5.10. Fund and sustain PMSV radio capability.

4.4.6. 6 ARW Safety (SE). Request a WF briefer for seasonal weather briefings, as required, and provide 2 weeks advance notice when possible.

4.4.7. 6 Communications Squadron (CS).

4.4.7.1. Provide, coordinate, or arrange for the installation, maintenance, and repair of weather communication equipment except for the communication equipment maintained by contract. Ensure actions are performed IAW the 6 OSS and 6 CS JET Sensor Collection Appliance (SCA) Service Level Agreement (SLA) which will be reviewed annually.

4.4.7.2. Coordinate with the weather technician prior to performing maintenance on communications equipment. Ensure routine maintenance does not degrade METWATCH and/or MISSIONWATCH performed by the WF during periods of inclement weather.

4.4.7.3. Utilize the restoration priorities for weather communications equipment outlined in this document.

4.4.7.4. Notify the responsible service agents for weather communications equipment outages.

4.4.7.5. Coordinate with off-base agencies to repair off base lines.

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

4.4.7.7. Ensure telephone circuits are assigned repair priorities.

4.4.7.8. Ensure established maintenance response times are met IAW **Table 5.2** below.

4.4.7.9. Ensure a 24-hour point of contact for reporting outages and assigning job control numbers is available.

4.4.7.10. Respond to established maintenance response times IAW **Table 5.2** below.

4.4.7.11. In cooperation with WF, verify frequency assignment requirements, validate existing frequency assignment parameters, and submit appropriate modifications, renewal, or deletion actions through the appropriate MAJCOM. WF will maintain a copy of frequency authorizations received from the Installation Spectrum Manager (ISM).

4.4.7.11.1. RWest AW400 RF Modems operating on frequency 413.4 MHz for data communication between the TMQ-53 sensor on the airfield and WF office are renewed every five years. The WF or 6 OSS Unit Spectrum point of contacts will engage with the ISM yearly to ensure that the renewal is completed on-time**.**

4.4.8. 6 CES. Contact the WF Chief or NCOIC to request climatological data and specialized support for projects on MAFB.

4.4.9. 6 Security Forces Squadron (SFS). Promptly inform the WF of any hazardous weather reported by Security Forces personnel (e.g., tornado, hail, etc.).

4.4.10. All Supported Flying Units (91 ARS, 50 ARS and 63 ARS)

4.4.10.1. Notify the WF of current and planned weather alternates and any special considerations affecting the duration of the mission (i.e., weather categories, exercise/deployment considerations, etc.).

4.4.10.2. Notify the WF of required additional support as soon as it becomes known to include monitoring of alternate observations/forecast and tracking of weather conditions affecting local flying operations.

4.4.10.3. Provide timely notification of changes to scheduled operations affecting weather support requirements as soon as the change is identified.

4.4.10.4. Provide PIREPS either directly to the WF through the PMSV, phone patch or via ATC controllers.

4.4.10.5. Provide feedback on weather briefings via e-mail or survey to the WF or TACC Weather.

4.4.10.6. Provide the WF a minimum of 2 weeks advanced notification of any requirement for training conducted by the WF or any changes in requirements to previously scheduled weather training.

4.4.11. AMOPS FLIP Manager. Submit FLIP updates provided by the WF to Air Force Flight Standards Agency/Operating Location-D (AFFSA)/OL-D.

4.4.12. 6 MDG/BEE (Bioenvironmental Flight). Provide the base populace with the Wet Bulb Globe Temperature (WBGT) as required.

4.4.13. All Weather Support Recipients. Notify the WF when new weather support requirements are identified or when changes to current weather support is deemed necessary.

Chapter 5

WEATHER EQUIPMENT

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

5.2. Meteorological Equipment. The WF uses the FMQ-19 FBWOS and Gibson Ridge weather radar to determine the current state of the atmosphere. These critical systems provide customers the most timely, accurate, and relevant weather intelligence possible.

5.2.1. FMQ-19. The FMQ-19 samples, measures, and reports: temperature, wind speed and direction, visibility, cloud base height and amount of coverage, pressure, liquid equivalent precipitation accumulation, and ice accretion during freezing precipitation. These measurements are processed to create properly formatted, fully automated observations that comply with applicable reporting standards and protocols defined by the World Meteorological Organization (WMO), Federal Aviation Administration (FAA) and military reporting standards.

5.2.2. Gibson Ridge Software (GRS). The WF utilizes the GRS applications including GRLevel2 for viewing Level II radar data and GRLevel3 for viewing Level III data from WSR-88D radars. Both viewers feature high-speed, high-quality radar displays with an intuitive user interface. Weather technicians make use of the software to analyze complex radar signatures and obtain detailed information on storm intensity, movement, internal circulation, and general wind flow. Weather technicians routinely incorporate the latest radar information into all mission execution forecasts and RP products.

5.3. Communications Equipment. The following systems are the backbone of the WF communications network:

5.3.1. JET. As discussed in **para 2.5** of this instruction, JET is the primary system for disseminating forecast, observations, warnings, watches, and advisories. Telephones are used as a backup for key aircraft controlling agencies.

5.3.2. PMSV Radio. The PMSV Radio (225.05 MHz frequency) allows the WF to communicate with aircrews both on the ground and in the air. When the MAFB PMSV is out-of-service or during a WF closure, the Patrick AFB WF monitors 225.05 MHz and responds to all MAFB PMSV contacts within their range. Aircrews may also obtain weather information via phone patch from the WF, TACC Weather or the 26 OWS.

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

5.3.4. Local Area Network (LAN). The WF relies heavily on the LAN to improve the timeliness and accuracy of weather intelligence to our customers.

5.3.5. WSR-88D (Weather Surveillance Radar). The WF relies heavily on the use of radar for timeliness and accuracy of precipitation and severe weather forecasts to include tornadoes. The WF uses the TBW radar, which is an asset belonging to the National Weather Service in Ruskin.

5.3.5.1. The WF will attend semiannual Unit Radar Committee meetings held by the National Weather Service held in May and November as a voting member.

5.4. Maintenance.

5.4.1. Organizations providing preventive maintenance and repair of weather and communications equipment are listed in **Table 5.1**.

Table 5.1. Equipment Maintenance List.

Equipment	Organization
FMQ-19	6 OSS/OSAM
TMQ-53	6 OSS/OSAM
JET	557th Weather Wing
Phones/Hotlines LAN/Internet Connectivity	6 CS/SCOIL

5.4.2. Restoral Priorities. Priorities for restoring critical systems exist in the event of natural disasters or any other anomaly, simultaneously impacting systems base-wide. *Significant* indicates a situation where the equipment is completely inoperative, while *minimal* means the equipment is in limited operation. Response times for weather equipment are listed in **Table 5.2** below (priorities may be adjusted based on forecasted weather).

Table 5.2. Equipment Restoral Priorities.

Equipment	Organization	Response Times Significant/Minimal
PMSV Radio	6 OSS/OSAM	Immediate/24 hours
FMQ-19	6 OSS/OSAM	Immediate/24 hours
Phones/Hotlines LAN/Internet Connectivity	6 CS/SCOIL	Immediate/12 hours
JET	557th Weather Wing	Immediate/12 hours

5.5. Building Power . In the event of a commercial power interruption, Hangar 3 automatically switches to generator backup power.

ADAM D. BINGHAM, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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AFI 15-127, *Weather Training*, 27 Jan 2021

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

AFMAN 10-206, *Operational Reporting (OPREP)*, 18 Jun 2018

AFMAN 10-2502, *Air Force Incident Management System (AFIMS) Standards and Procedures*, 13 Sep 2018

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AFMAN 15-129, *Air and Space Weather Operations*, 9 July 2020, IC 16 Jun 2021

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AMCI 15-101, *Weather Operations and Support*, 22 Jan 2020

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MACDILLAFBI 13-201, *Airfield Operations*, 6 Sep 2018

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

DD Form 175-1*, Flight Weather Briefing*

Abbreviations and Acronyms

A3AW—Weather Operations and Plans Branch

AFB—Air Force Base

AFFSA—Air Force Flight Standards Agency

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AGL—Above Ground Level

AMC—Air Mobility Command

AMCI—Air Mobility Command Instruction

AMOPS—Airfield Management Operations

AOL—Alternate Operating Location

AOR—Area of Responsibility

ARS—Air Refueling Squadron

ARW—Air Refueling Wing

ATC—Air Traffic Control

BPAWS—Base Public Address Warning System

CAT—Crisis Action Team

CB—Cumulonimbus

CBRNE—Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive

CC—Commander

CES—Civil Engineering Squadron

CONUS—Continental United States

COOP—Continuity of Operations Plan

CP—Command Post

CS—Communications Squadron

CWW—Cooperative Weather Watch

DA—Density Altitude

DLT—Desired Lead Time

EM—Emergency Management

ESTMD—Estimated

EWO—Emergency War Orders

FBWOS—Fixed Base Weather Observing System

FLIP—Flight Information Publication

FMQ-19—Automatic Meteorological Station

GDSS-2—Global Decision Support System

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IDP—Installation Data Page

IFM—Integrated Flight Management

IG—Inspector General

IRC—Instrument Refresher Course

IRP—Instrument Refresher Program

ISM—Installation Spectrum Manager

IWWC—Integrated Weather Warnings Capability

JET—Joint Environmental Toolkit

KT—Knots

LAN—Local Area Network

LOCAL—Aviation Selected Local Weather Report

LTG—Lightning

LWR—Lower

MAFB—MacDill Air Force Base

METAR—Meteorological Terminal Aviation Routine Report

METWATCH—Meteorological Watch

MOV—Moving

MOVD—Moved

MWP—Mission Weather Product

NM—Nautical Mile

NOAA—National Oceanic & Atmospheric Administration

NOTAM—Notice to Airmen

OG—Operations Group

OHD—Overhead

OL-D—Operating Location-D

OPR—Office of Primary Responsibility

OSAA—Airfield Management

OSAM—Radar Airfield Weather Systems

OSAT—Air Traffic Control Tower

OSS—Operations Support Squadron

OWS—Operational Weather Squadron

PA—Pressure Altitude

PIREP—Pilot Report

PK WND—Peak Wind

PMSV—Pilot-to-Metro Service

RDS—Records Disposition Schedule

RP—Resource Protection

RVR—Runway Visual Range

RWY—Runway

SCA—Sensor Collection Appliance

SE—Safety Office

SFS—Security Forces Squadron

SM—Statute Mile

SOP—Standard Operating Procedure

SPECI—Special Weather Report

SPINS—Special Instructions

SWAP—Severe Weather Action Plan

SWS—Special Weather Statement

TACC—Tanker Airlift Control Center

TAF—Terminal Aerodrome Forecast

TCU—Towering Cumulus

TMQ-53—Tactical Meteorological Observing System

TWA—Tropical Weather Advisory

TWR—Tower

UHF—Ultra High Frequency

UNKN—Unknown

UTC—Unit Type Code

VIS—Visibility

WF—Weather Flight

WSHFT—Wind Shift

WSR-88D—Weather Surveillance Radar, 1988 Doppler

WWA—Watches, Warnings and Advisories

Terms

None

Attachment 2

SPECIAL WEATHER OBSERVATION CRITERIA

A2.1. SPECIs are taken and disseminated for the following criteria:.

A2.1.1. Visibility**.** When the prevailing visibility decreases below or, if below, increases to equal or exceeds any of the thresholds listed in **Table A2.1**.

Table A2.1. Visibility Thresholds.

Visibility	*Source*
3 SM	AFMAN 15-111, FLIP
2 SM	AFMAN 15-111, FLIP
1 1/2 SM	AFMAN 15-111, FLIP
1 3/8 SM	FLIP
1 1/4 SM	FLIP
1 1/8 SM	FLIP
1 SM	AFMAN 15-111, FLIP
7/8 SM	FLIP
3/4 SM	AFMAN 15-111, FLIP
1/2 SM	AFMAN 15-111, FLIP
1/4 SM	AFMAN 15-111

A2.1.2. Ceiling. When the ceiling goes below or, if below, increases to equal or exceeds any of the thresholds in **Table A2.2**.

Table A2.2.

Ceiling Height	*Source*
3,000 FT	AFMAN 15-111
2,000 FT	AFMAN 15-111
1,500 FT	AFMAN 15-111
1,100 FT	FLIP
1,000 FT	AFMAN 15-111
800 FT	AFMAN 15-111
700 FT	AFMAN 15-111
600 FT	FLIP
500 FT	AFMAN 15-111, FLIP
400 FT	FLIP
300 FT	AFMAN 15-111, FLIP
200 FT	AFMAN 15-111
100 FT	AFMAN 15-111

A2.1.3. Sky Condition. A layer of clouds or obscuring phenomena aloft below 1,100 FT when no layer aloft was reported below 1,100 FT in previous METAR or SPECI.

A2.1.4. Wind.

A2.1.4.1. Shifts. A directional change of 45 degrees or more in less than 15 minutes with sustained winds of 10 knots or more throughout the wind shift.

A2.1.4.2. Squall. A strong wind characterized by a sudden onset in wind speed increasing at least 16 knots and sustained at 22 knots or more for at least 1 minute.

A2.1.5. Volcanic Eruption. Eruption or volcanic ash cloud first noted.

A2.1.6. Thunderstorm.

A2.1.6.1. Begins (**Note:** A SPECI is not required to report the beginning of a new thunderstorm if one is currently reported as in progress at the airfield).

A2.1.6.2. Ends (**Note:** 15 minutes after the last occurrence of criteria for a thunderstorm; an audible sound of thunder, lightning within five (5) NM of the airfield, etc.)

A2.1.7. Precipitation.

A2.1.7.1. Hail begins or ends.

A2.1.7.2. Freezing precipitation begins, ends, or changes intensity.

A2.1.7.3. Ice pellets begin, end, or change in intensity.

A2.1.7.4. Any other type of precipitation begins or ends. **Note:** Except for freezing rain, freezing drizzle, hail, and ice pellets, a SPECI is not required for changes in type (e.g., drizzle changing to snow grains) or the beginning or ending of one type while another is in progress (e.g., snow changing to rain and snow).

A2.1.8. Tornado, Funnel Cloud, or Waterspout. When a tornado, funnel cloud, or waterspout is first observed, disappears from sight, or ends.

A2.1.9. Runway Visual Range (RVR). The WF provides RVR output when the visibility for the active runway is < 1 mile/1600 meters, and the RVR value is observed to decrease to less than or, if below, increases to equal or exceed any of the values listed below in **Table A2.3**.

Table A2.3. RVR Reporting.

RVR	***RVR***
6,000 FT	AFMAN 15-111, FLIP
5,500 FT	FLIP
5,000 FT	AFMAN 15-111, FLIP
4,500 FT	FLIP
4,000 FT	AFMAN 15-111, FLIP
2,400 FT	AFMAN 15-111, FLIP
2,000 FT	AFMAN 15-111
1,600 FT	AFMAN 15-111
1,200 FT	AFMAN 15-111
1,000 FT	AFMAN 15-111
600 FT	AFMAN 15-111

A2.1.10. Tower Visibility. When notified by ATC that the tower prevailing visibility has decreased to less than, or if below, increased to equal or exceed 1, 2, or 3 statute miles and the tower prevailing visibility differs from the surface prevailing visibility.

A2.1.11. Upon Resumption of Observing Services. Take, disseminate, and record a SPECI within 15 minutes after returning to duty following a break in hourly coverage, if a METAR was not filed as scheduled during the 15-minute period.

A2.1.12. Alert Observations. Only during augmentation, the WF will take and record a SPECI for any criteria significant to local installation operations or as requested 6 ARW/CP or 6 ARW/XP.

A2.1.13. Aircraft Mishap. When notified of an aircraft mishap, the WF checks the latest AN/FMQ-19 observation (i.e., METAR/SPECI/OMO (one minute observation) and performs augmentation, if required. When operating in a back-up mode, the WF immediately takes a SPECI observation IAW AFMAN 15-111.

A2.1.14. Miscellaneous. Any other meteorological situation that, in the weather technician's opinion, is critical.

Attachment 3

FORECAST SPECIFICATION AND AMENDMENT CRITERIA

A3.1. TAFs specify the onset, duration, and intensity for the criteria listed below. TAFs are amended when forecast/observed conditions do not match conditions specified in the TAF.

A3.1.1. Ceiling and/or Visibility. Forecast to decrease to less than; if below, is forecast to increase to equal or exceed the thresholds listed in **Table A3.1**.

Table A3.1. Ceiling and Visibility Specification and Amendment Criteria.

Category	*Ceiling*	*Visibility*
A	< 300 FT	< 1/2 SM
B	< 800 FT	< 2 SM
C	< 1,000 FT	< 2 SM
D	< 2,000 FT	< 3 SM
E	≥ 2,000 FT	≥ 3 SM

A3.1.2. Surface Winds.

A3.1.2.1. Wind Speed: The difference between the predominant wind speed and the forecast speed is ≥ 10 knots.

A3.1.2.2. Wind Gusts: The difference between the observed gusts and the forecast gusts is ≥ 10 knots.

A3.1.2.3. Wind Direction: A change of > 30 degrees when the predominant wind speed or gusts are forecast to be ≥ 15 knots

A3.1.3. Icing. Not associated with thunderstorms, from the surface to 10,000ft above ground level (AGL).

A3.1.3.1. When the beginning or ending of icing first meets, exceeds, or decreases to less than moderate or greater thresholds and was not specified in the forecast.

A3.1.4. Turbulence. For category II aircraft, not associated with thunderstorms, from the surface to 10,000ft AGL.

A3.1.4.1. When the beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.

A3.1.5. Weather Warning Criteria.

A3.1.5.1. When it occurs or is expected to occur during the forecast period but was not specified in the forecast.

A3.1.5.2. When forecasted but is no longer expected to occur during the forecast period.

A3.1.6. Altimeter Setting.

A3.1.6.1. If below, increases to meet or exceed 31.00 INS and was not specified during the forecast period.

A3.1.6.2. If above, decreases to less than 31.00 INS and was not specified during the forecast period.

A3.1.6.3. If above, decreases to less than 28.00 INS and was not specified during the forecast period.

A3.1.6.4. If below, increases to equal or exceed 28.00 INS and was not specified during the forecast period.

A3.1.7. Forecast Weather Advisory Criteria.

A3.1.7.1. Occurs or is expected to occur during the forecast period but was not specified in the forecast.

A3.1.7.2. Specified in the forecast but is no longer expected to occur during the forecast period.

A3.1.8. Thunderstorms. Incorrect forecasts start or end time.

A3.1.9. Specification of Temporary Conditions.

A3.1.9.1. When forecast conditions specified as temporary become predominant conditions.

A3.1.9.2. When forecast conditions specified as temporary do not occur during the cardinal hour as forecast.

A3.1.9.3. When forecast conditions specified as temporary are no longer expected to occur.

A3.1.10. Changes to Predominant Conditions.

A3.1.10.1. Forecasted change in conditions occurs before the beginning of the specified period of change and are expected to persist.

A3.1.10.2. Forecasted change in conditions does not occur within 30 minutes after the specified time.

A3.1.10.3. Forecasted change in conditions is no longer expected to occur.

A3.1.11. Representative Conditions. Forecast conditions are not considered representative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to an in-flight aircraft.

Table A3.2. Sample Weather Observations.

1	2	3	4	5	6	7	8	9	10
SPECI KMCF **1506Z** AUTO **17013G22KT** 2 1/2 **RVRNO** TSRA **BKN015CB OVC030** 26/25									
ALSTG 29.99 RMK AO2 TS OHD MOV NE									
11			12						

Body of Report - Consists of 11 Groups		
Group	Reference	Brief Description
Type of Report	A4.1	Indicates type of report.
Station Identifier	A4.2	A four-character group used to identify the observing location.
Date and Time of Report	A4.3	Date and time of the report.

Report Modifier	A4.4	A report modifier **(COR**) identifying report as a correction, or **AUTO** indicating the weather observation is a fully automated report with no human intervention. Gusts are appended if available.
Wind	A4.5	Indicates wind direction and speed.
Visibility	A4.6	Provides prevailing visibility from the designated point of observation in statute miles or meters.
Runway Visual Range	A4.7	10-minute RVR or varying RVR in hundreds of feet or meters.
Present Weather	A4.8	Any weather occurring at the observing location, obscurations to vision, or other phenomena.
Sky Condition	A4.9	State of the sky in terms of sky cover, layers and heights, ceilings, and obscurations.
Temperature and Dew Point	A4.10	Measure of hotness/coldness of ambient air. Dew point measures saturation point
Altimeter	A4.11	Indicates altitude above MSL of an aircraft on the ground.
Remarks	A4.12	Remarks generally elaborate on parameters reported in the body of the report and are included in all METAR and SPECI observations.

A4.1. Type of Report . METAR or SPECI.

A4.2. Station Identifier . Also known as an ICAO, this code identifies the location of the observation.

A4.3. Date and Time of Report . This is in Zulu (GMT) of the last element taken of the observation.

A4.4. Report Modifier . The report modifier can be either of the following two elements:

A4.4.1. COR is entered into the report modifier group when a corrected METAR or SPECI is transmitted.

A4.4.2. AUTO identifies the report as a fully automated report with no human intervention.

A4.4.2.1. AUTO is automatically included in reports when the weather technician signs off the FBWOS indicating the observations are no longer being augmented.

A4.4.2.2. AUTO and COR are not seen in the same observation. If the term COR is used, the observation cannot be reported as AUTO, since a weather technician is manually correcting the observation.

A4.5. Wind . The true direction the wind is blowing from is encoded in tens of degrees using three figures. Directions less than 100 degrees are preceded with a "0." The wind speed is entered as a two- or three-digit group immediately following the wind direction.

A4.5.1. Gust. The wind gust is encoded in two or three digits immediately following the wind speed. The wind gust is encoded in whole knots using the units and tens digits and, if required, the hundreds digit.

A4.5.2. Variable Wind Direction (speeds 6 knots or less). Variable wind direction with wind speed 6 knots or less may be encoded as VRB in place of the direction.

A4.5.3. Variable Wind Direction (speeds greater than 6 knots). Wind direction varying 60 degrees or more with wind speed greater than 6 knots are encoded as variable. The variable wind direction group is immediately following the wind group. The directional variability is encoded in a clockwise direction. For example, if the wind is variable from 180 degrees to 240 degrees at 10 knots, it would be encoded 21010KT 180V240.

A4.5.4. Calm Wind. Calm wind is encoded as 00000KT.

A4.6. Visibility . The furthest predominant distance (at least 50% of the aerodrome) seen from the airfield reported in statute miles. The most common visibility reported is 7 miles.

A4.7. Runway Visual Range .

A4.8. Present Weather . Any weather phenomenon occurring on the airfield. This is mandatory anytime the visibility is less than 7 miles. **Table A5.2** lists the present weather codes:

Table A4.2.

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

A4.9. Sky Condition and Cloud Height . Describes the amount of clouds present at the airfield and the base of each cloud deck. They fall into the following categories:

A4.9.1. SKC – Sky Clear.

A4.9.2. FEW – Few; 1/8 to 2/8 coverage.

A4.9.3. SCT – Scattered; 3/8 to 4/8 coverage.

A4.9.4. BKN – Broken; 5/8 to 7/8 coverage.

A4.9.5. OVC – Overcast; 8/8 coverage.

A4.9.6. VV – Vertical visibility; normally used during heavy fog, indicates the distance that can be seen vertically into the fog.

A4.9.7. FEW000 – Surface-based obscuration.

A4.9.8. Cloud Height. Three-digit number provides the height of the base of the cloud in hundreds of feet (e.g., 015 equals 1,500 feet). The cumulonimbus (CB) and towering cumulus (TCU) descriptors may be appended to the cloud height, if applicable.

A4.10. Temperature and Dew Point . Both are reported using two digits each in degrees Celsius. Temperature precedes the solidus, while the dew point follows the solidus.

A4.11. Altimeter Setting . The current value aircraft altimeters must be set at to read an elevation of zero. The altimeter is measured in inches (INS) of mercury.

A4.12. Remarks . Table A4.3 contains some of the most commonly seen remarks in observations:

Table A4.3.

AO2—Automated Sensor Indicator
CB—Cumulonimbus
DSNT—Distant
ESTMD—Estimated
FROPA—Frontal Passage
LTG—Lightning
LWR—Lower
MOV—Moving
MOVD—Moved
OHD—Overhead
PK WND—Peak Wind
PRESFR—Pressure Falling Rapidly
PRESRR—Pressure Rapidly Rising
RWY—Runway
TCU—Towering Cumulus
TWR—Tower
UNKN—Unknown
VIS—Visibility
WSHFT—Wind Shift
PA—Pressure Altitude
DA—Density Altitude

Attachment 5

SAMPLE WEATHER PRODUCT DISSEMINATION FORMAT/INTERPRETATION TAF

A5.1. TAF .

Table A5.1.

TAF KMCF 0317/0423 14006KT 9999 BKN040 OVC100 QNH2996INS BECMG 0318/0319 20010G15KT 9999 BKN040 620406 QNH2993INS BECMG 0320/0321 19015G20KT 8000 -SHRA FEW025 OVC040 610901 QNH2991INS TEMPO 0323/0403 VRB10G20KT 3200 -TSRA BKN015CB BKN035 BECMG 0404/0405 21007KT 9000 -RA FEW025 BKN060 620604 QNH2992INS BECMG 0417/0418 21012KT 9999 NSW FEW030 BKN050 620505 QNH2997INS TX28/0320Z TN12/0410Z

A5.1.1. The forecast follows the same general format as the observation with the following exceptions noted:

A5.1.1.1. Valid Date/Time. Forecasts are valid for a 30-hour period. In this example, the forecast is valid from the third at 1600Z until the fourth at 2200Z.

A5.1.1.2. BECMG – This is a code to indicate the predominant conditions are going to change to (or become) the conditions listed in the line of the forecast. The conditions are changing during the time period following the BECMG code (1800 to 1900Z in the example above).

A5.1.1.3. TEMPO – This code means the conditions listed on the line may occur for periods of an hour or less (1 hour and 15 minutes or less for thunderstorms) anytime between the time frame following the TEMPO code (2300Z to 0300Z in this example).

A5.1.1.4. Max Temp/Min Temp. TX28 indicates a maximum temperature of 28° Celsius to occur at 20Z. TN12 indicates a minimum temperature of 12° Celsius to occur at 10Z (**Note:** M indicates a minus sign in front of the number: M05 = -5° Celsius).

Attachment 6

SAMPLE WEATHER PRODUCT DISSEMINATION FORMAT/INTERPRETATION WWA

A6.1. WWA.

Table A6.1. Sample WWAs.

OBSERVED WEATHER WARNING

MACDILL AFB WEATHER WARNING 05-001

VALID 17/1921Z (17/1521L) TO UFN

LIGHTNING IS OBSERVED WITHIN 5NM 08/RS

FORECAST WEATHER WARNING

MACDILL AFB WEATHER WARNING 11-011

VALID 10/1500Z(10/1000L) TO 10/2200Z(10/1700L)

WINDS ASSOCIATED WITH MODERATE THUNDERSTORMS ARE FORECAST TO BE 35-49 KNOTS AT MACDILL AFB. MAXIMUM GUST EXPECTED: 41 KNOTS 18/THB

WEATHER WATCH

MACDILL AFB WEATHER WATCH 05-015

VALID 15/1858Z (15/1458L) TO 15/2100Z (15/1700L)

A LIGHTNING WATCH IS NOW IN EFFECT FOR MACDILL AFB UNTIL 1700L. A WARNING WILL BE ISSUED LATER IF REQUIRED.

58/GO

OBSERVED WEATHER ADVISORY

MACDILL AFB WEATHER ADVISORY 06-014
VALID 08/1408Z (08/1008L) TO UFN
CROSSWINDS OBSERVED TO BE EQUAL TO OR GREATER THAN 25KTS 44/ST

Attachment 7

CUSTOMER RESPONSE MATRIX

Table A7.1.

Weather Phenomena	*Lead Time*	*Impact*	*Customer Action*
Tornado	15 min	Personal injury/death Equipment damage	Seek shelter
Hail (3/4" or more)	60 min	Personal injury/death Equipment damage	Seek shelter; hangar or divert aircraft
Freezing Precipitation	60 min	Delay or cease operations	Cease flying; hangar or protect aircraft
Surface winds ≥ 50 knots	60 min	Flight hazard Equipment damage	Cease unnecessary flying; secure or hangar aircraft; secure light objects outside
Surface winds 35-49 knots	60 min	Flight hazard Equipment damage	Cease unnecessary flying; secure or hangar aircraft
Surface winds 25-34kts	Observed	Flight hazard	Cease wing-walking on aircraft
Lightning w/in 5 NM of MAFB	Observed	Personal injury/death Delay operations	Cease flight-line work; clear pool/golf course
Crosswinds ≥ 25 knots	Observed	Flight hazard	Cease/delay take-off for KC-135R
Crosswinds ≥ 15 knots but < 25 knots	Observed	Flight hazard	Cease take-off/landings for small private aircraft; no touch and goes
Low-Level Wind Shear	Observed	Flight hazard	Delay or cease take-off/landing evaluate shear conditions
Winds ≥ 13 kts	Observed	Limit for Normal Jumps	Cease static line parachute operations
Winds ≥ 17 kts	Observed	Limit for HALO Jumps	Cease HALO parachute operations

Attachment 8

FLYING UNITS SUPPORTED & MISSION LIMITING ENVIRONMENTAL CONDITIONS

Table A8.1.

Organization	*Mission*	*MWP Provider*
6 ARW (91 ARS / 50 ARS) **927 ARW (63 ARS)**	***Non-IFM missions***. Global engagement through air refueling and airlift support of our national interests and resident Combatant Commanders.	MAFB WF
6 ARW (91 ARS / 50 ARS) **927 ARW (63 ARS)**	***IFM missions.*** Global engagement through air refueling and airlift support of our national interests and resident Combatant Commanders.	TACC Weather

A8.1. Mission Limiting Thresholds .

A8.1.1. Airframe-Specific Weather Limitations. Tables **A8.2** – **A8.4** provide the general airframe weather limitations based on AFMAN 11-202V3, *Flight Operations* and the limitations from aircraft specific AFI 11-2.

Table A8.2. USAF General Flight Rules Weather Limitations. (Ref: AFI 11-202 V3)

Weather Condition	*Impact*	*Customer Action*
Cig/Vis < 2,000 / 3	Alternate required	Add fuel to allow divert
Cig/Vis < 1,000/ 2, if MAJCOM approved	Alternate required	Add fuel to allow divert
Cig/Vis < 500 / 2	Terminal not suitable for alternate	Select another alternate

Table A8.3.

Weather Condition	*Limit*	*Response Action*
Dry Crosswind Landing	greater than 25KT	Delay or proceed to ALT
Dry Crosswind (Training Sortie)	greater than 25KT	Delay or proceed to ALT
Mountain Wave Turbulence	Observed or Forecast Moderate	Avoid
RVR	1000’	No takeoffs

Table A8.4. KC-135 Training Maneuver Restrictions. (Ref: AFMAN 11-2KC-135 V3)

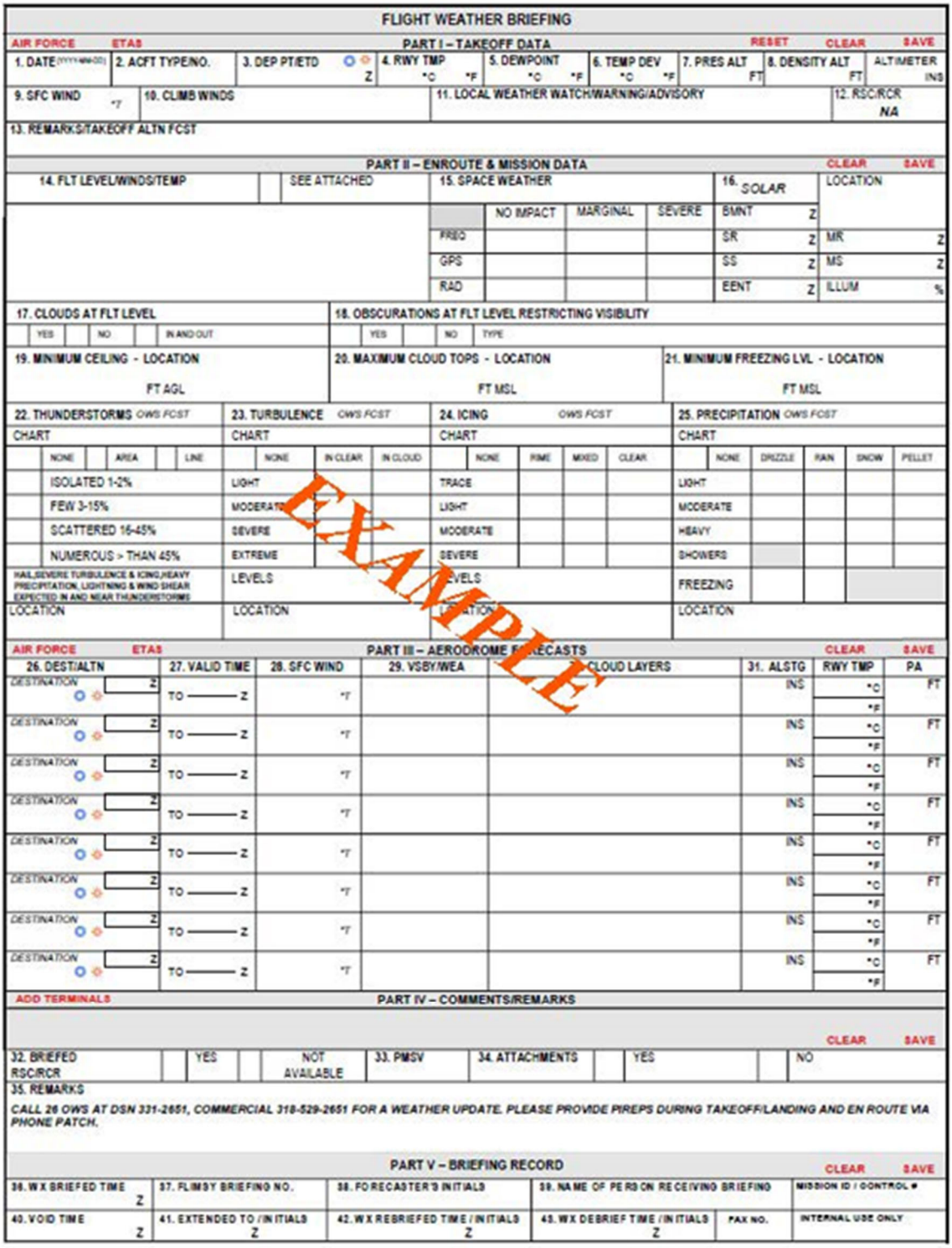
Maneuver	**Ceiling/Visibility Minimums**	**Other Restriction**

Touch-and-Go Landings (Para 9.3.)	Minimum ceiling of 1,000 and visibility of 2 SM for A/Cs Minimum ceiling of 300 and RVR 4000FT (¾ SM visibility with direct IP supervision).	RCR measured 9 or greater Max crosswind 15 knots (10 Kts for Advisory Circulars (ACs)) Not accomplished on slush-covered runways.
Engine Out Simulations (Para 9.5.2.4.)	Day: Circling mins for approach being flown. MacDill RWY 04: 500FT/1SM per FLIP MacDill RWY 22: 500FT/1SM per FLIP Night: <1,000FT/2SM per FLIP	Maximum crosswind is 15 Kts

Attachment 9

MISSION WEATHER PRODUCT

Figure A9.1. DD Form 175-1, Flight Weather Briefing EXAMPLE.



FLIGHT WEATHER BRIEFING

AIR FORCE ETAS — PART I – TAKEOFF DATA — RESET CLEAR SAVE

1. DATE (YYYY-MM-DD)	2. ACFT TYPE/NO.	3. DEP PT/ETD Z	4. RWY TMP °C °F	5. DEWPOINT °C °F	6. TEMP DEV °C °F	7. PRES ALT FT	8. DENSITY ALT FT	ALTIMETER INS

9. SFC WIND °T	10. CLIMB WINDS	11. LOCAL WEATHER WATCH/WARNING/ADVISORY	12. RSC/RCR NA

13. REMARKS/TAKEOFF ALTN FCST

PART II – ENROUTE & MISSION DATA — CLEAR SAVE

14. FLT LEVEL/WINDS/TEMP — SEE ATTACHED

15. SPACE WEATHER

	NO IMPACT	MARGINAL	SEVERE
FREQ			
GPS			
RAD			

16. SOLAR — LOCATION

BMNT Z			
SR Z	MR Z		
SS Z	MS Z		
EENT Z	ILLUM %		

17. CLOUDS AT FLT LEVEL — YES NO IN AND OUT

18. OBSCURATIONS AT FLT LEVEL RESTRICTING VISIBILITY — YES NO TYPE

19. MINIMUM CEILING - LOCATION	20. MAXIMUM CLOUD TOPS - LOCATION	21. MINIMUM FREEZING LVL - LOCATION
FT AGL	FT MSL	FT MSL

22. THUNDERSTORMS OWS FCST — CHART: NONE, AREA, LINE

23. TURBULENCE OWS FCST — CHART: NONE, IN CLEAR, IN CLOUD

24. ICING OWS FCST — CHART: NONE, RIME, MIXED, CLEAR

25. PRECIPITATION OWS FCST — CHART: NONE, DRIZZLE, RAIN, SNOW, PELLET

	22. THUNDERSTORMS	23. TURBULENCE	24. ICING	25. PRECIPITATION
	ISOLATED 1-2%	LIGHT	TRACE	LIGHT
	FEW 3-15%	MODERATE	LIGHT	MODERATE
	SCATTERED 16-45%	SEVERE	MODERATE	HEAVY
	NUMEROUS > THAN 45%	EXTREME	SEVERE	SHOWERS
	HAIL,SEVERE TURBULENCE & ICING,HEAVY PRECIPITATION, LIGHTNING & WIND SHEAR EXPECTED IN AND NEAR THUNDERSTORMS	LEVELS	LEVELS	FREEZING
	LOCATION	LOCATION	LOCATION	LOCATION

AIR FORCE ETAS — PART III – AERODROME FORECASTS — CLEAR SAVE

26. DEST/ALTN	27. VALID TIME	28. SFC WIND	29. VSBY/WEA	CLOUD LAYERS	31. ALSTG	RWY TMP	PA
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT
DESTINATION Z	TO Z	°T			INS	°C °F	FT

ADD TERMINALS — PART IV – COMMENTS/REMARKS — CLEAR SAVE

32. BRIEFED RSC/RCR	YES	NOT AVAILABLE	33. PMSV	34. ATTACHMENTS	YES	NO

35. REMARKS

CALL 26 OWS AT DSN 331-2651, COMMERCIAL 318-529-2651 FOR A WEATHER UPDATE. PLEASE PROVIDE PIREPS DURING TAKEOFF/LANDING AND EN ROUTE VIA PHONE PATCH.

PART V – BRIEFING RECORD — CLEAR SAVE

36. WX BRIEFED TIME Z	37. FLIMSY BRIEFING NO.	38. FORECASTER'S INITIALS	39. NAME OF PERSON RECEIVING BRIEFING	MISSION ID / CONTROL #

40. VOID TIME Z	41. EXTENDED TO / INITIALS Z	42. WX REBRIEFED TIME / INITIALS Z	43. WX DEBRIEF TIME / INITIALS Z	FAX NO.	INTERNAL USE ONLY

EXAMPLE

Attachment 10

WING STANDUP EXAMPLES

Figure A10.1. Area of Responsibility Satellite Example.

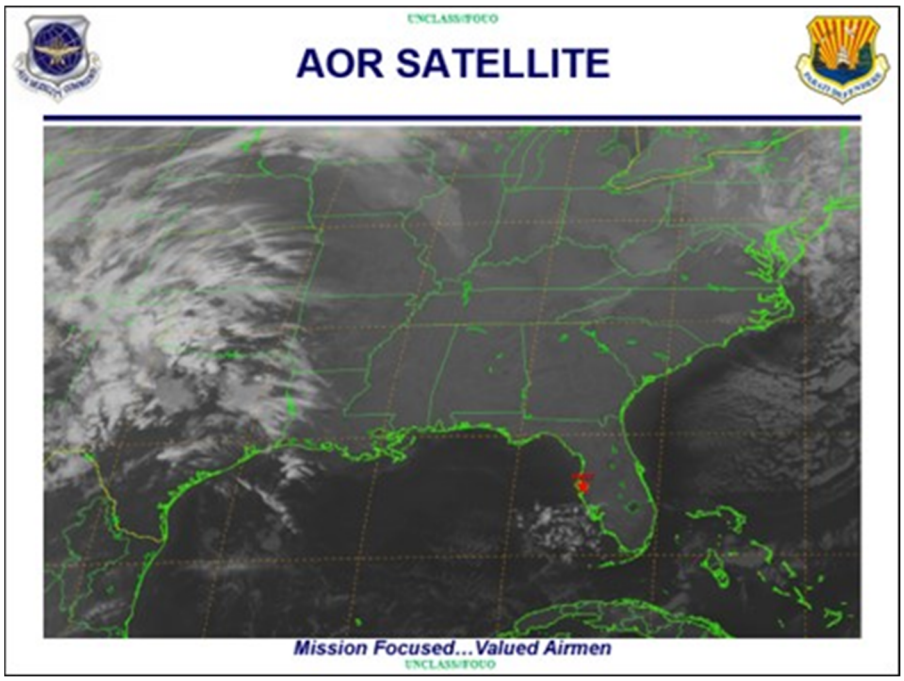


Figure A10.2. Local Satellite / Radar Example.

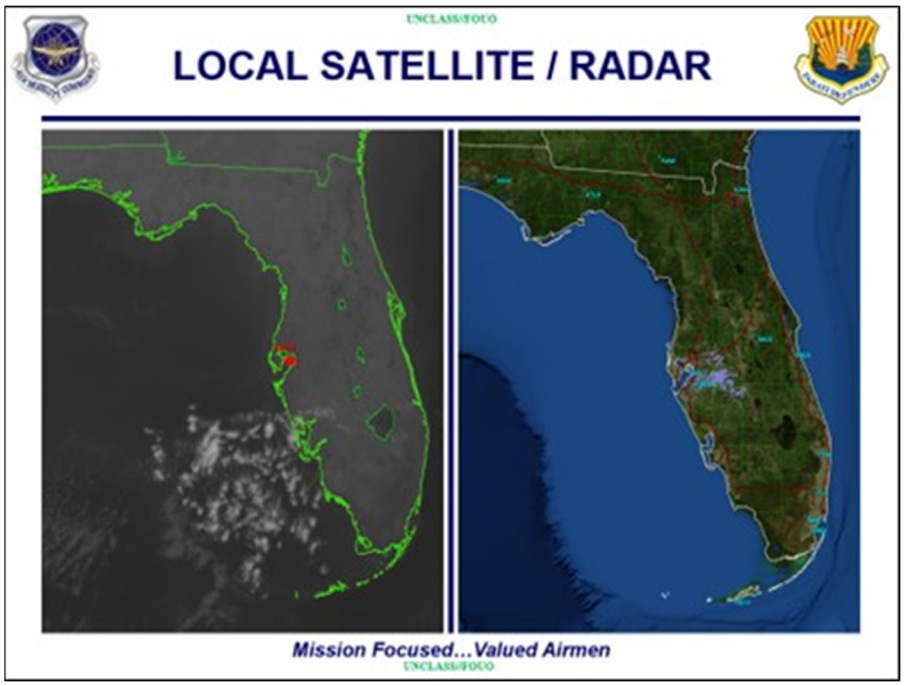


Figure A10.3. MacDill 5-Day Forecast Example.

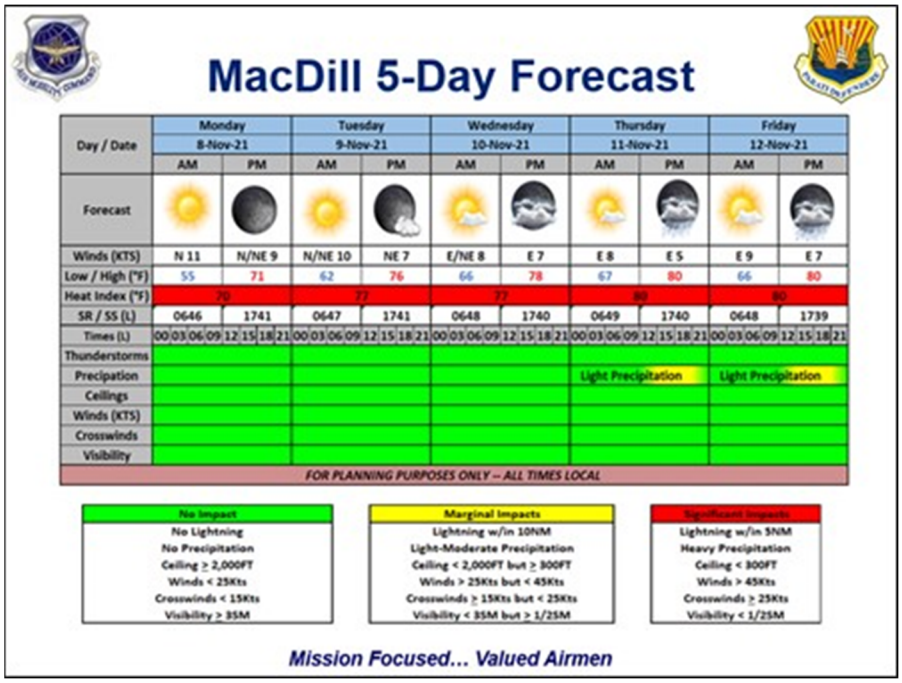


Figure A10.4. Tropical Example 1.

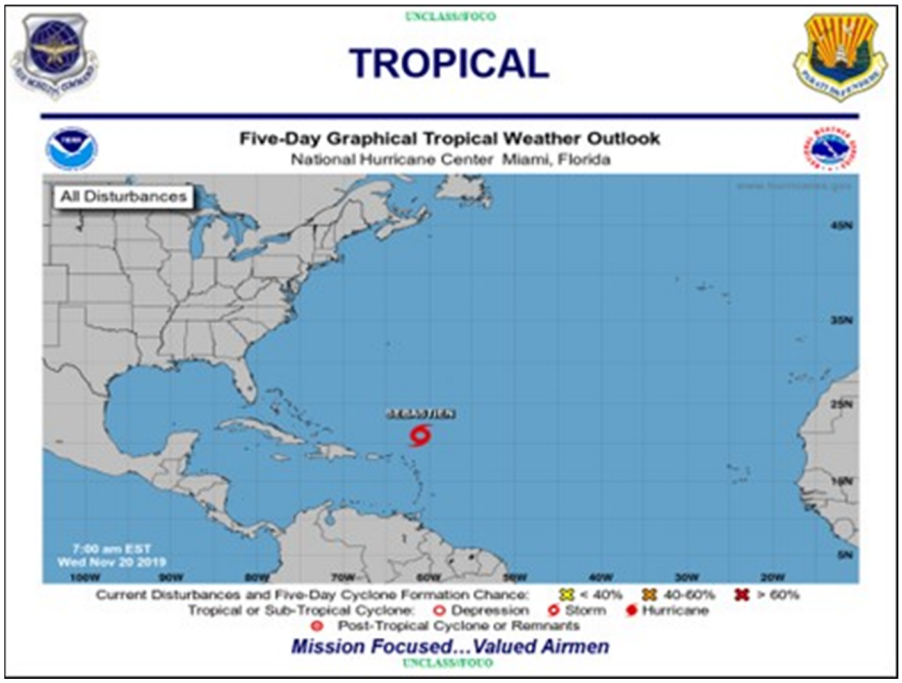
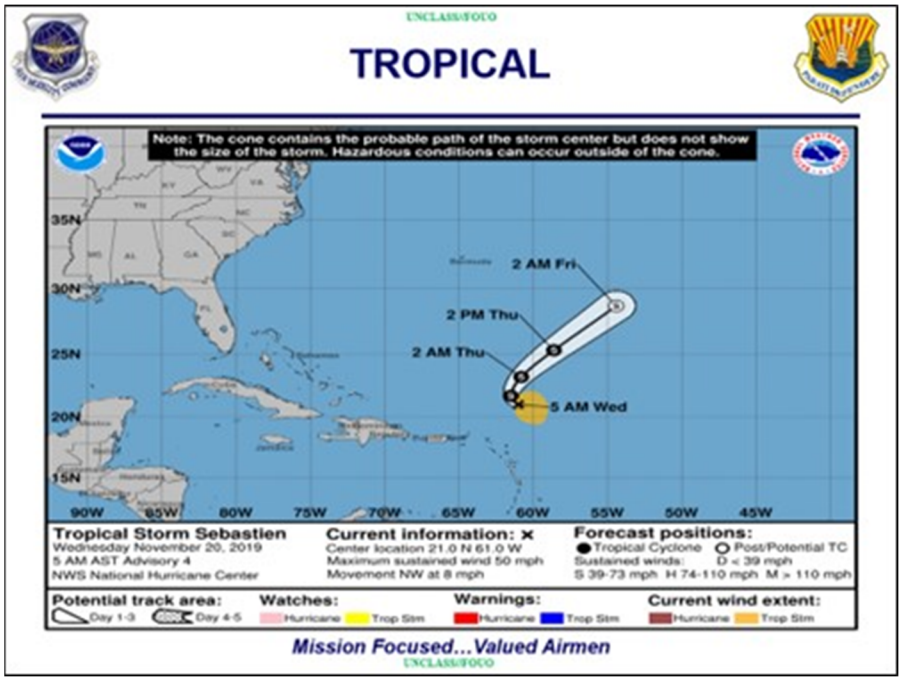


Figure A10.5. Tropical Example 2.



Attachment 11

TROPICAL WEATHER ADVISORY (TWA) EXAMPLES

Figure A11.1. TWA Example 1.

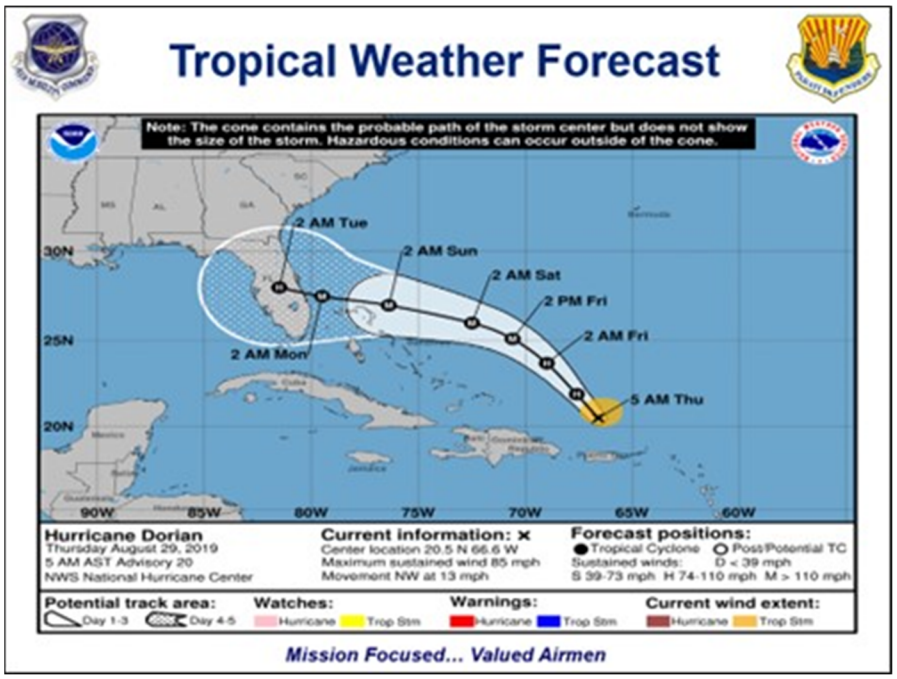


Figure A11.2. TWA Example 2.

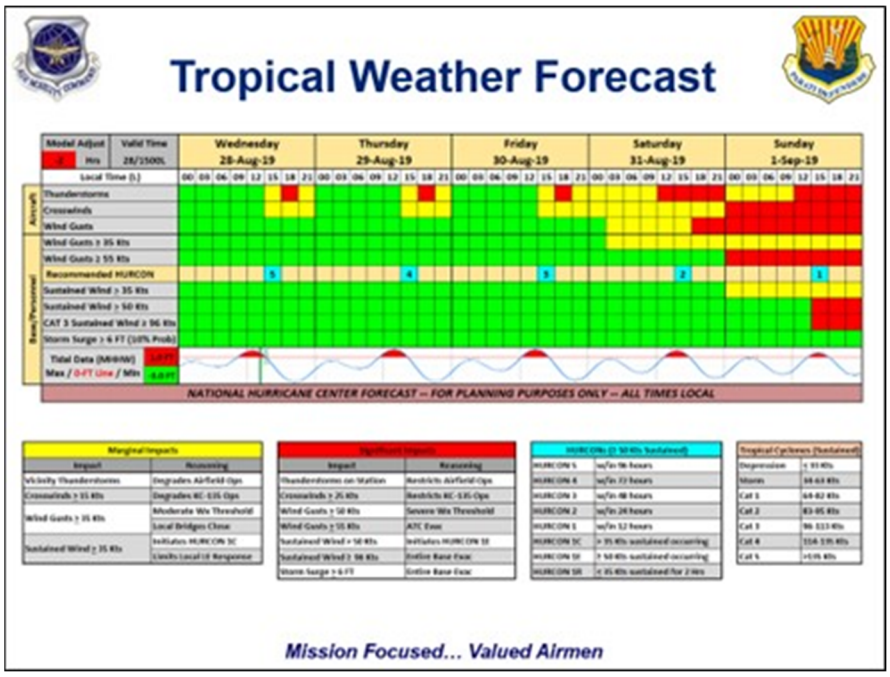


Figure A11.3. TWA Example 3.

Figure A11.4. TWA Example 4.

Figure A11.5. TWA Example 5.