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Weather

WEATHER SUPPORT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, Atmospheric and Space Environmental Support, Air Force Strategic Plan on Weather Reengineering (8 Aug 97); Air Force Instruction (AFI) 10-229, Responding to Severe Weather Events; AFI 15-114, Functional Resource and Weather Technical Performance Evaluation; AFI 15-128, Aerospace Weather Operations – Roles and Responsibilities; Air Force Manual (AFMAN) 15-111, Surface Weather Observations; AFMAN 15-124, Meteorological Codes; AFMAN 15-129, Aerospace Weather Operations – Processes and Procedures; and AFMAN 15-135, Combat Weather Team Operations. It establishes responsibilities and weather support procedures. It provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather supported services and dissemination of information and reciprocal support. It applies to units assigned to 36th Air Base Wing and subordinate units, and units assigned or attached to, or supported by Andersen Air Force Base.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

Chapter 1— GENERAL INFORMATION	5
1.1. General:	5
1.2. Location and Hours of Operation:	5
1.3. Concept of Operations:	5
1.4. Terms and Abbreviations:	6
1.5. CWT Duty Priorities:	6
1.6. 17 OWS Duty Priority:	7

- 1.7. Limitations: 7
- 1.8. Release of Weather Information: 8
- 1.9. Relocation Site: 8
- 1.10. Changes to this Base Instruction: 8

Chapter 2— AIRFIELD SERVICES 9

- 2.1. General 9
- 2.2. Observation Site 9
- 2.3. Basic Weather Watch (BWW): 9
- 2.4. Cooperative Weather Watch (CWW): 10
- 2.5. Weather Observations 10
- 2.6. Automated Telephone Answering Device (ATAD): 10
- 2.7. Pilot-to-Metro Service (PMSV): 10
- 2.8. Toxic Corridors/Chemical and Effective Downwind Messages 11

Chapter 3— MISSION WEATHER SERVICES 12

- 3.1. General: 12
- 3.2. Limitations: 12
- 3.3. Terminal Aerodrome Forecast (TAF): 12
- 3.4. Mission Execution Forecast (MEF): 12
- 3.5. Flight Weather Briefings 13
- 3.6. MISSIONWATCH: 13
- 3.7. Pilot Reports (PIREPS) and Air Reports (AIREPS) 14
- 3.8. Intranet Weather Support: 15
- 3.9. Instrument Refresher Course (IRC): 15
- 3.10. Space Weather Support 15

Chapter 4— TROPICAL CYCLONE SUPPORT 17

- 4.1. Tropical Cyclone Forecasts 17
- 4.2. Tropical Cyclone Categories: 17
- 4.3. Tropical Cyclone Products: 17
- 4.4. Tropical Cyclone Condition of Readiness (COR) Criteria
and Weather Station Actions: 18

Chapter 5— WEATHER WATCHES AND WARNINGS	20
5.1. General:	20
5.2. Severe Weather Action Procedures (SWAP):	20
5.3. Weather Watches	20
Table 5.1. Weather Watch Criteria	21
5.4. Weather Warnings	21
Table 5.2. Weather Warning Criteria	21
5.5. Dissemination of Watches and Warnings:	23
5.6. Severe Weather Impacts on Primary Customers:	23
Chapter 6— WEATHER ADVISORIES	25
6.1. General	25
6.2. Weather Advisories:	25
Table 6.1. Weather Advisory Criteria	25
6.3. Dissemination of Advisories:	26
Chapter 7— RECIPROCAL SUPPORT	27
7.1. General	27
7.2. 36 ABW:	27
7.3. Airfield Management (36 OSS/OSAM):	28
7.4. Tower (36 OSS/OSAT):	28
7.5. AMC Command Post (734 AMS/C2)	29
7.6. HC-5 (IAW Inter-Service Agreement:)	30
7.7. 13th Air Force:	30
7.8. 36 CES:	31
7.9. 36 CS:	31
7.10. 36 MXS/MXMW (Munitions)	31
7.11. 36 LRS/LGRF (Fuels)	32
7.12. FAA/CCF (IAW MOA)	32
7.13. Detachment 5, 50th Space Wing	32
7.14. 613 Contingency Response Group	32
Attachment 1— GLOSSARY OF REFERENCES, ABBREVIATIONS AND ACRONYMS	34

Attachment 2— SPECI AND LOCAL OBSERVATION CRITERIA	36
Attachment 3— WEATHER DISSEMINATION PROCEDURES	39
Attachment 4— WEATHER WARNING ,WATCH, AND ADVISORY NOTIFICATION DIAGRAM * HANDLING	40
Attachment 5— TROPICAL CYCLONE INFORMATION DISSEMINATION PROCEDURES	41
Attachment 6— WEATHER CODE BREAKDOWN	42
Attachment 7— TAF SPECIFICATION AND AMENDMENT CRITERIA	45
Attachment 8— BASE WEATHER EQUIPMENT	49
Attachment 9— TERMS EXPLAINED	51
Attachment 10— PILOT REPORTS	53
Attachment 11— A11. LIGHTNING WATCH/WARNING AREAS FOR AAFB	54

Chapter 1

GENERAL INFORMATION

1.1. General: The weather flight, 36th Operations Support Squadron (36 OSS/OSW) is responsible for providing environmental support to Headquarters 13th Air Force, 36th Air Base Wing, HC-5, and other tenant and deployed units at Andersen AFB (AAFB), Guam, when the airfield is open. During periods when the airfield is closed, the weather flight will have standby personnel in case of hazardous weather. Other DoD activities on Guam may receive environmental support upon request. Weather products are tailored to meet criteria important to flying operations (i.e. airborne aircraft, Air Traffic Control (ATC) Tower), base support agencies (i.e. Maintenance and Civil Engineering) and command and control authorities (i.e. 36 ABW Command Post (CP), AMC CP). The weather flight also provides specialized radar support to the USPACOM Typhoon Warning System. This instruction establishes weather support requirements and procedures outlined in Air Force Directives and as directed by supported customers. For the remainder of this document, CWT (Combat Weather Team) nomenclature will take the place of all 36 OSS/OSW references.

1.1.1. The 17 OWS/CC at Hickam AFB, HI is the Staff Weather Officer (SWO) for the Commander, 13th Air Force (13 AF/CC). Because the units are not collocated, the weather flight commander serves as the on-island representative for the 13 AF SWO. The weather flight commander is also the SWO for Commander, 36th Air Base Wing (36 ABW/CC).

1.2. Location and Hours of Operation: The CWT is located in building 17002 and provides or arranges for weather support 24 hours a day, 7 days a week. CWT services include: staff support for the 13 AF and 36 ABW, weather observing, issuing observed warnings and advisories, Mission Execution Forecasts (MEFs), climatological data or studies and tailored weather support for local AAFB customers. As a reengineered CWT, the weather flight works as a “team” with the 17 Operational Weather Squadron (OWS) located at Hickam AFB to provide weather services and resource protection for AAFB. Guidelines for this team support are outline in the 17 OWS and 36 OSS Memorandum of Agreement (MOA). The 17 OWS provides AAFB with Terminal Aerodrome Forecasts (TAFs), and forecasted watches, warnings and advisories 24 hours a day, 7 days a week. The CWT retains the ability and responsibility for amending the forecast and issuing any weather watches, warnings, or advisories when weather threatens life or property and it is impractical to get the 17 OWS involved. The 17 OWS will disseminate all AAFB forecast weather watches, warnings and advisories) to a single point of contact for AAFB (36 ABW/CP). All AAFB weather products will also be available to local customers via the 17 OWS web site:

<https://17ows.hickam.af.mil/>

1.3. Concept of Operations: The CWT, in conjunction with the 17 OWS, provides weather information to all supported agencies for operational and decision making purposes as well as protection of base resources. The CWT tailors weather information to the specific mission requirements of supported agencies. The CWT provides weather services for military and military-related uses. The services available are:

1.3.1. Routine Weather Products:

1.3.1.1. Forecasts and observations for AAFB, which are transmitted for local and worldwide use.

1.3.1.2. Aircrew weather briefing support to the U.S. and it's Allies.

1.3.1.3. Forecast Weather Watches.

1.3.1.4. Forecast/Observed Weather Warnings.

1.3.1.5. Forecast/Observed Weather Advisories.

1.3.1.6. Staff Weather Briefings: The weather flight commander will provide weekly stand-up weather briefings to Wing staff or higher levels. Content of these briefings is at the discretion of the 13 AF/CC and 36 ABW/CC. The weather flight commander or designated representative is available for special weather briefings as needed.

1.3.2. Non-routine support to include, but not limited to:

1.3.2.1. Consultant Services: The weather flight commander will advise on weather problems or requirements, prepare necessary weather annexes/appendices to planning and operations documents, and prepare changes to this instruction.

1.3.2.2. Climatological Services: The CWT will provide or obtain worldwide climatological data or studies to improve mission planning as needed.

1.3.2.3. Aircraft Accident/Incident and Investigation: The weather flight commander, or a designated representative, will serve as the weather member of investigation boards whenever weather events, services, personnel, or resources are involved in an aircraft accident/incident. Additionally, the weather flight commander or a designated representative can be appointed to the investigation board at the direction of the commander of the agency, activity, unit involved, board president, and/or HQ PACAF/DOW (PACAF/SWO).

1.3.2.4. **Environmental Protection Committee** : The weather flight commander will provide inputs to, and serve on, the Environmental Protection Committee as required.

1.3.2.5. **Air Operations Board (AOB)**: The weather flight commander or designated representative will attend AOB meetings.

1.3.2.6. **Seasonal Weather Briefings**: The weather flight commander or designated representative will present an annual typhoon climatology briefing to the 36 ABW/CC in association with Tropical Cyclone Exercise Stormy or the first tropical cyclone of the year, whichever comes first.

1.4. Terms and Abbreviations: **Attachment 1** contains a complete list of all definitions of terms and abbreviations used in this document.

1.5. CWT Duty Priorities: Due to limited resources and manning, the CWT must prioritize duties. The CWT will adhere to the following list and deviations to this list are acceptable only in the most extreme circumstances. The shift supervisor will use judgment in complying with these priorities, especially when there is imminent danger to life and/or property:

1.5.1. Perform Emergency War Order (EWO) Taskings.

1.5.2. Respond to Aircraft/Ground Emergencies.

1.5.3. Respond to Pilot to Metro Service (PMSV) Contacts.

1.5.4. Provide Supervisor of Flying (SOF) Support.

1.5.5. Take and Disseminate Surface Weather Observations Locally/Provide "Eyes Forward" Support to 17 OWS.

- 1.5.6. Perform Coordinated METWATCH Support.
- 1.5.7. Severe Weather Action Plan (SWAP) Operations.
- 1.5.8. Provide support to JTWC / Typhoon radar eye fix reports.
- 1.5.9. Produce and Disseminate Mission Execution Forecasts (MEFs).
- 1.5.10. Disseminate PIREPs Locally.
- 1.5.11. Relay Urgent PIREPs and Special AIREPs to 17 OWS.
- 1.5.12. Transmit Surface Observations and PIREPs/AIREPs Longline.
- 1.5.13. Perform MISSIONWATCH.
- 1.5.14. Provide other Briefing Support.
- 1.5.15. Weather Function Training.
- 1.5.16. Accomplish Administrative Tasks.

1.6. 17 OWS Duty Priority: Due to limited resources and manning, the 17 OWS must prioritize duties. The 17 OWS will adhere to the following list and deviations to this list are acceptable only in the most extreme circumstances. The shift supervisor will use judgment in complying with these priorities, especially when there is imminent danger to life and/or property:

- 1.6.1. Perform OWS Emergency War Order (EWO) Tasking.
- 1.6.2. Execute OWS Evacuation.
- 1.6.3. Provide Products and Services in Support of Combat, Contingency & Military Operations Other Than War (MOOTW) Operations.
- 1.6.4. Provide Airborne Aircrew Support.
- 1.6.5. Provide Resource Protection Products (forecast weather watches, warnings, advisories, etc.).
- 1.6.6. Prepare and Disseminate Peacetime/Exercise Regional and Operational-Level Graphics and Alphanumeric Products.
- 1.6.7. Prepare and Disseminate Aerodrome Forecasts (TAFs).
- 1.6.8. Provide Scheduled Flight Weather MEFs and Tactical-Level, Non-contingency (MEFs).
- 1.6.9. Provide other Aerospace Weather Products, Information, and Weather Briefings.
- 1.6.10. Accomplish other Routine Weather Requirements.
- 1.6.11. Accomplish Recurring Training.
- 1.6.12. Accomplish Administrative Tasks.

1.7. Limitations: The CWT and 17 OWS cannot conduct effective weather support operations without access to communications for receiving and transmitting data. These communications systems include, but are not limited to: the New Tactical Forecast System (NTFS), 36 ABW Local Area Network (LAN), WSR-88D weather radar (NEXRAD), UHF (PMSV) radio, a Meteorological Satellite (METSAT) imagery receiver, and various telephone services including the Defense Switching Network (DSN), and

Defense Messaging Service (DMS). The base LAN provides Internet connectivity between the CWT and 17 OWS. This LAN network is critical to the timely execution of mission weather services and airfield resource protection to AAFB. Interruption in Internet service to the CWT severely degrades the weather flight's ability to support wing operations to include, but not limited to aircrew mission weather briefings and dissemination of weather watches, warnings, and advisories to wing agencies. An interruption in service to any of the above mentioned communication systems proportionately degrade the CWT capability to provide effective support. Backup procedures utilize tactical meteorological and communications equipment, fax machines, and any other method available only allow limited access to required resources.

1.8. Release of Weather Information: Support to non-DOD agencies and the general public will not be provided until the base 36 ABW Public Affairs (PA) office has granted permission or a LOA/HTSA is in effect. Deviations are authorized only in the event of imminent danger to life and/or property is involved. The local National Weather Service (NWS) office is responsible for service to civilians and non-military agencies. The CWT will provide or arrange for day-to-day weather support to civilian contractors who request weather information to support government-funded, on-base projects. The CWT will honor requests for weather information for use in legal claims actions against the government only after receiving approval from 36 ABW Judge Advocate (JA) office. All information requests will be honored within the context of duty priorities listed in Section 1.5.

1.9. Relocation Site: In the event that the primary weather center must be evacuated, CWT personnel will take appropriate measures to establish an alternate airfield weather service site in the 36 ABW Command Post(CP). Observing will be conducted at the Alternate Observing Site (AOS) in the 36 ABW/CP Annex, near the main entrance. If the 36 ABW/CP is unavailable, the AOS will be a facility with available communications, (i.e. telephone, LAN connection and a view of the airfield complex).

1.10. Changes to this Base Instruction: To request changes to this base instruction, contact the CWT at 366-3176/1408/1407 or send written requests/inquiries to: 36 OSS/OSW, Unit 14035, APO AP 96543-4035.

Chapter 2

AIRFIELD SERVICES

2.1. General : Trained and certified weather technicians monitor weather conditions and disseminate observations when specific regulatory and locally established thresholds are met. The weather technician will relay all pertinent information, such as changing weather conditions, to the 17 OWS as part of the “eyes forward” function. Weather technicians take all observations IAW AFMAN 15-111, Surface Weather Observations and AFMAN 15-129, Aerospace Weather Operations-Processes and Procedures.

2.2. Observation Site : Observations are taken at the official observation site unless safety considerations (or other unforeseen situations) dictate otherwise. The official observation site is building 17002. The official point of observation is 120 feet behind building 17002 for determining prevailing visibility and “on-station” precipitation. The weather technician's main point of observation is confined to an area within two miles (3200 meters) of the center point of the runway to include phenomena affecting the airfield complex. Weather observations may also contain information on phenomena occurring at other than the location of the station (e.g., clouds over mountains W, lightning SE, thunderstorms NW).

2.2.1. The view from the observation site is restricted from NE-SE by building 17002. Visibility in all other directions is unrestricted. Both north and south runways are clearly visible from the official observation point, except the extreme NE end of both runways. Consequently, weather occurring NE-SE of the building (and airfield) may not be fully reflected in the official weather observation. A Cooperative Weather Watch (See section 2.4), in which the air traffic controllers (ATC) are trained to assist in observing as a secondary function, reduces the impact of this limitation.

2.3. Basic Weather Watch (BWW): Weather technician's function under the BWW concept. Due to additional essential duties and logistical restrictions, the weather technician cannot monitor the weather on a continuous basis. The BWW Program involves the following minimum requirements as the basis for the detection of significant changes in weather conditions.

2.3.1. During a BWW, the weather technician will recheck weather conditions at intervals not to exceed 20 minutes since the last observation to determine the need for a local or special observation when any of the following conditions are occurring, or are forecast to occur within 1 hour:

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

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

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

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

2.3.1.5. Precipitation.

2.3.1.6. Fog or Mist.

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

2.4. Cooperative Weather Watch (CWW): A CWW is a program wherein qualified non-weather personnel assist weather technicians in monitoring the weather conditions. CWW Program assists in the reporting of unreported weather conditions which could affect flight safety or which could be critical to the safety or efficiency of other local operations and resources. Since tower controllers have a complete 360-degree view of the airfield complex, a CWW agreement exists between the ATC and the CWT. Assistance is provided IAW AFI 13-203, Air Traffic Control. The CWT provides initial weather training to all ATC controllers in support of this program. When informed by ATC personnel of significant weather events, the CWT weather technician will verify/validate weather conditions and disseminate appropriately as a Local, Special, or within the hourly observation.

2.5. Weather Observations : AFMAN 15-111, *Surface Weather Observations*, and AFMAN 15-129, *Aerospace Weather Operations-Processes and Procedures* govern all aspects of observing. For primary observation site, see section 2.2. Observations will be taken and disseminated over the NTFS hourly and when Local or Special criteria dictate. During an evacuation of the CWT, the weather technician will relocate to the Alternate Observing Site (AOS). Observations will be taken from the 36 ABW/CP and disseminated to critical work center (ATC Tower, 36 ABW/CP, AMC CP, 17 OWS) via phone hourly and when Local or Special criteria dictate. In the event 36 ABW/CP is not a suitable AOS site, observations will be taken and disseminated from an AOS meeting requirements outlined in Section 1.9.

2.6. Automated Telephone Answering Device (ATAD): The CWT provides an automated answering device with daily weather conditions and forecast. The forecast is updated by 0600 local time and is valid for the next 24 hours. This service is meant for non-operational purposes only. This recording may be updated at other times based on weather and time permitting. The recording may be reached by dialing DSN 366-3382.

2.7. Pilot-to-Metro Service (PMSV): The CWT monitors ultra-high frequency (UHF) 344.6 MHz continuously to assist aircraft (either airborne or on the ground). Range is approximately 200 nautical miles (NM) at normal operating altitudes. The CWT will solicit aircrews to provide PIREPs of weather conditions over this frequency. All PIREPs received by the CWT will be disseminated over the NTFS system. See [Attachment 11](#) for elements specific to PIREPs. The CWT will relay all forecast or unforecast Urgent (UUA) encoded PIREPs for weather phenomena encountered in the Western Pacific verbally to the 17 OWS. During periods when the AAFB forecast counter is closed or the technician is not available, the 17 OWS will provide phone patch support for AAFB.

2.7.1. Short-Term PMSV Outages: CWT personnel will notify ATC of any PMSV outage and expected time of return to service. Aircrews will be briefed PMSV outages during their flight weather (MEF) brief. Aircrews can contact AMC/CP for a phone patch to the CWT for metro service. ATC will monitor the frequency and advise aircrew on UHF 344.6 to contact Base Ops at UHF 372.2 for weather service. During PMSV outages, ATC personnel will relay all PIREPs to the CWT weather technician as time and resources permit.

2.7.2. Long-Term PMSV Outages: Long-term PMSV outages will be documented in the current airfield NOTAMS and/or FLIPs as appropriate. CWT personnel will ensure that ATC is aware of the current PMSV status and expected time of return to service. Aircrews will be briefed PMSV outages during their MEF aircrew brief. ATC will monitor the frequency and advise aircrew on operating on UHF 344.6 to contact Base Ops at UHF 372.2 for metro/weather service as time and resources permit. A phone patch through the AMC/CP to weather may be used during extended PMSV outages. During

PMSV outages, ATC/RAPCON personnel will relay all PIREPs to the weather technician as time and resources permit.

2.8. Toxic Corridors/Chemical and Effective Downwind Messages : Upon notification of any incident that involves a toxic spill or base emergency, the CWT will provide wind direction and speed, along with any other required information, for toxic corridor calculations (worst case) performed by BioEnvironmental (36 MDG/SGOAB) Updates will be provided as required. The CWT will provide Chemical Downwind Messages (CDM) and Effective Downwind Messages (EDM) upon request.

Chapter 3

MISSION WEATHER SERVICES

3.1. General: The CWT provides or arranges for Mission-tailored Weather Services (MWS) and subsequent Mission Watch for all AAFB agencies. The CWT works cooperatively with the 17 OWS to develop a TAF and issue subsequent weather watches, warnings, and advisories for AAFB when conditions warrant.

3.2. Limitations:

3.2.1. NTFS Operability: An NTFS outage impairs the CWT and 17 OWS ability to communicate and issue products supporting MWS. Reference Sections 1.7

3.2.2. LAN Connectivity: Reference Section 1.7

3.2.3. 17 OWS Operability: In the event that 17 OWS operations are impaired due to lost communications, system failure, evacuation or any termination of service at Hickam AFB, the CWT will reassume responsibility for providing all weather support for AAFB. The CWT will retain this responsibility until such time that the 17 OWS is ready to reassume its weather responsibilities role for the AAFB. Reference Section 1.2.

3.3. Terminal Aerodrome Forecast (TAF): The 17 OWS will issue a 24-hour TAF for AAFB every eight hours at 0200Z, 1000Z, and 1800Z (1200L, 2000L, 0400L). AFMAN 15-124 Meteorological Codes, AFMAN 15-129, *Aerospace Weather Operations - Processes and Procedures*, and AFI 15-128, *Aerospace Weather Operations – Roles and Responsibilities* govern all aspects of forecasting. The forecast will be available via the Internet at the 17 OWS website at <https://17ows.hickam.af.mil/>.

3.3.1. A TAF is a forecast of required weather elements for a particular terminal covering a period up to 24 hours. Forecast elements in the forecast text refer to an area within five NM of the center of the runway complex. The term “VC” (vicinity) appended to a weather event refers to an area between five and ten NM from that center.

3.3.2. TAFs will be amended when unforecasted predetermined values of phenomena occur or are expected to occur. **Attachment 8** lists what elements will be specified in the TAF and specific thresholds requiring TAF amendments.

3.4. Mission Execution Forecast (MEF): A MEF is a tailored forecast of applicable weather elements based on customers mission requirements. The frequency of issue and valid times for a MEF are based on individual mission criteria. A MEF is amended based on unit defined mission-specific criteria (if applicable).

3.4.1. Definition: A MEF is a forecast product derived from all available weather data which are applicable to a unit’s mission criteria. A MEF can be anything from a flight weather briefing to a product designed to support a specific weapon system.

3.4.2. Procedure: The CWT will issue two specific MEF’s on regular basis.

3.4.2.1. The weather flimsy, used to support HC-5 and deployed flights in the local area, is valid for 8 hours and is produced at 0200Z, 1000Z, and 1800Z (1200L, 2000L, 0400L) 7 days a week.

The weather flimsy is amended as required by TAF amendment criteria (**Attachment 8**) and local unit defined criteria (if applicable).

3.4.2.2. The 4-Day forecast is produced by 2000Z (0600L) daily and is for planning purposes only. Specific missions requirements may require the design of a new MEF to support the customer. MEF requirements should be coordinated with weather flight commander or NCOIC during the mission planning cycle.

3.5. Flight Weather Briefings : The CWT presents four basic MEF's for operational weather briefings: In-Station Briefings, Out-of-Station Briefings, Pilot-to-Metro Service, and briefings to remote locations. Briefings will be conducted IAW AFMAN 15-129.

3.5.1. In-Station Briefings: Transient aircrews may receive a DD Form 175-1 Flight Weather Briefing (or equivalent) and graphical products from the 17 OWS via the web at <https://17ows.hickam.af.mil>. The homepage has detailed instructions for aircrews to follow in using this briefing system. The instructions can be found under "Quicklinks" at "Aircrew Briefing Instructions". At any time the aircrew can contact the 17 OWS at DSN 449-8332/8335 with questions or for information. Aircrews should request routine flight weather briefings a minimum of two hours prior to briefing time to give the 17 OWS adequate time to examine the weather conditions and complete the required documentation. The 17 OWS will complete no-notice and short-notice briefings as time permits depending on the current workload, available manpower, and duty priorities. The 17 OWS will prioritize no-notice flight weather briefing requests behind existing requests unless special circumstances warrant a higher priority (e.g. alert, search and rescue, medical evacuation). The CWT will conduct both scheduled and unscheduled briefings for local customers and aircraft staged at AAFB at the CWT 24 hours a day. Briefings will include a discussion of weather affecting the flight's departure, route, and destination(s).

3.5.2. Out-of-Station Briefings: Mass briefings can be presented at a location specified by the requesting agency. Agencies should provide at least a 24-hour notice. Normally, out-of-station briefings are inappropriate for audiences of less than 3 aircrews having a common mission. However, contingent upon personnel availability and mission requirements, these briefings may be requested at any time. Changes to the briefing schedule or route changes should be passed on to the duty technician by the requesting agency as soon as possible.

3.5.3. Pilot-to-Metro Service (PMSV): Aircraft destined for or over flying Andersen can receive weather for landing or updates on the remainder of their mission by contacting AAFB Metro on 344.6 Megahertz or through a Global phone patch. The 17 OWS will provide PMSV phone patch support for the CWT during the hours the CWT is off-duty or unable to respond.

3.5.4. Remote Briefings: Aircrews at remote locations may receive a DD Form 175-1 Flight Weather Briefing (or equivalent) and graphical products via the web at <https://17ows.hickam.af.mil>. See **3.5.1.** for instructions on how to use this briefing system.

3.6. MISSIONWATCH: The CWT will maintain a MISSIONWATCH tailored to the mission(s) of the day. The purpose is to ensure the most accurate weather information is provided to the customer and to improve the mission execution forecast process. The following procedures will be used to focus on limiting meteorological impacts to ongoing military operations:

3.6.1. The CWT should be a part of the operational decision cycle; the CWT can improve the probability of success of a mission by notifying operational customers as significant unforecasted changes to mission-critical parameters occur prior to mission execution.

3.6.2. During the mission, the CWT will continuously monitor for unit-defined mission-critical weather thresholds. If a mission-critical threshold is crossed, the CWT technician will update the MEF, notify the mission director or commander via phone immediately, and inform the 17 OWS of the situation. In emergency situations or rapidly changing weather conditions, mission support comes first; the customer will be notified by any means necessary of any mission limiting weather conditions.

3.6.3. CWT leadership will coordinate with the customer to determine windows of opportunity in which updated weather information could influence the outcome of ongoing missions. These windows of opportunity will vary from mission to mission. Methods of contact may include, but are not limited to, verbal relay of information to the SOF or mission commander, updating the MEF, a PMSV contact, a phone patch, use of L-Band or satellite communications (SATCOM), or by using command and control systems. The operations center or mission commander will be the central dissemination point for updating mission weather information.

3.6.4. CWT leadership will identify missions for which a detailed MISSIONWATCH will not add value (e.g. transient aircrew flights).

3.6.5. The objective of MISSIONWATCH is mission success. The CWT should be a part of mission planning and execution to exploit weather conditions and ensure weather is a force multiplier.

3.7. Pilot Reports (PIREPS) and Air Reports (AIREPS) : The CWT can receive PIREPS/AIREPS via Global Airways Facilities, relayed from the tower, the 36 ABW/CP or AMC/CP, or over the PMSV. Dissemination format will be IAW AFMAN 15-129. (See [Attachment 10](#) for PIREP/AIREP format and explanation.

3.7.1. Aircrews should be encouraged to provide timely PIREPS/AIREPS when those reports include:

3.7.1.1. Meteorological elements observed that may be of operational significance to other aircraft or to surface activities (i.e. low-level wind shear, tornadic activity, etc.).

3.7.1.2. Specific data to fill a gap in the meteorological collecting system; for example, cloud bases and/or tops when departing/arriving, upper winds, or turbulence/icing at a point or between two points

3.7.2. A severe PIREP (UUA) or AIREP Special (ARS) will be transmitted longline for one or more of the following phenomena:

3.7.2.1. Tornadoes, funnel clouds, and water spouts.

3.7.2.2. Thunderstorms when along a line with little or no space between individual storms, or thunderstorms embedded in cloud layers or concealed by haze.

3.7.2.3. Tropical Cyclones.

3.7.2.4. Squall lines.

3.7.2.5. Severe or extreme turbulence.

- 3.7.2.6. Severe icing.
- 3.7.2.7. Low-level wind shear.
- 3.7.2.8. Hail.
- 3.7.2.9. Volcanic ash cloud.

3.7.3. All routine AIREPS received will be disseminated longline. All routine PIREPS received will be disseminated longline unless they:

- 3.7.3.1. Contain only cloud base heights which are incorporated in the surface observation.
- 3.7.3.2. Include substantially the same data already transmitted within the past 30 minutes.
- 3.7.3.3. Contain only negative reports of icing and/or turbulence from locations outside forecast areas for these phenomena.

3.7.4. All applicable PIREPs/AIREPs will be locally disseminated.

3.8. Intranet Weather Support: The CWT maintains an intranet site for providing general and mission specific weather information to local customers at <https://intranet.andersen.af.mil/36ossroot/OSW/index.shtml>. The intranet web page is also used for local flight weather briefing support for local and deployed customers. Links are set up to walk the aircraft commander through the entire weather briefing process to ensure they have the most accurate information possible.

3.9. Instrument Refresher Course (IRC): The only on-island flying unit the CWT supports is HC-5 (Navy). The Navy does not require IRC Support.

3.10. Space Weather Support : The CWT in conjunction with the 17 OWS will provide a generalized situation awareness of past and future space environment impacts to warfighters and weapons systems via space weather products tailored to the mission requirements.

3.10.1. Space Weather Alerts and Warnings:

3.10.1.1. **HF Communication :** Depicts degradation of HF communications due to changes in the ionosphere where long range HF signals are usually reflected.

3.10.1.2. **UHF SATCOM Communications :** UHF scintillation products depict degradation of UHF SATCOM communications due to changes in the ionosphere. UHF signals are transmitted through the ionosphere for communications to satellites.

3.10.1.3. **Satellite Operations Health:** Depicts the potential for or observed degradation or damage to satellites themselves. This damage or degradation usually results from particle interaction with the spacecraft. This can affect satellites such as GPS, communication, weather, or surveillance.

3.10.2. **Space Weather Forecasts:** The CWT, in conjunction with the 17 OWS, will provide the following space weather forecasts tailored to mission requirements:

3.10.2.1. HF Propagation forecast: Analysis, 6-hour forecast, point-to-point HF usable frequency forecast.

- 3.10.2.2. UHF Scintillation Products: Analysis, 6 hour forecast, point-to-point UHF signal fade forecast.
- 3.10.2.3. GPS Error Map: Single frequency error.
- 3.10.2.4. Satellite Operations: Event warnings, post-event analysis.

Chapter 4

TROPICAL CYCLONE SUPPORT

4.1. Tropical Cyclone Forecasts : The US Naval Pacific Meteorology and Oceanography Center/Joint Typhoon Warning Center (NPMOC/JTWC) at Pearl Harbor provides warnings for tropical cyclones located from the international dateline westward to the eastern coast of Africa. When storms are affecting the 13AF AOR, Korea, or Japan, the CWT will disseminate JTWC's tropical cyclone warnings to AAFB agencies. When tropical cyclones are forecast to affect AAFB, the 17 OWS issues the official forecasts (WDPN Bulletin) for wind conditions at AAFB.

4.2. Tropical Cyclone Categories:

- 4.2.1. Tropical Disturbance: Disorganized area of convection with sustained wind speed less than 25 knots.
- 4.2.2. Tropical Depression: Tropical cyclone with sustained wind speed 25 to 34 knots.
- 4.2.3. Tropical Storm: Tropical cyclone with sustained wind speed of 35 to 63 knots.
- 4.2.4. Typhoon: Tropical cyclone with sustained wind speed of 64 to 129 knots.
- 4.2.5. Super Typhoon: Tropical cyclone with sustained wind speed of at least 130 knots.

4.3. Tropical Cyclone Products:

4.3.1. A Tropical Cyclone Formation Alert (TCFA) is generated by the JTWC and identifies a specific bounded area where a tropical cyclone is likely to develop in a specified time period (usually 12 to 24 hours). This product is emailed as a courtesy to base agencies IAW [Attachment 5](#).

4.3.2. Tropical Cyclone Warning Bulletins are generated by the JTWC and provide forecasts for identified tropical cyclones. The current position, intensity, past six hour movement, and 72 hour forecast tracks are plotted.

4.3.2.1. All warnings are updated by JTWC a minimum of every six hours in the Western Pacific and every 12 hours in the Indian Ocean until the storm has dissipated or becomes extra-tropical (loses characteristics of a tropical cyclone).

4.3.3. All tropical cyclone bulletins which forecast a tropical cyclone affecting Guam is briefed to Wing leadership immediately with a recommendation for a Battle Staff recall if 50 knot winds (sustained) are forecast for Guam.

4.3.4. All tropical cyclone bulletins are emailed as a courtesy to base agencies (IAW [Attachment 5](#)). The warning bulletins will be emailed every six hours.

4.3.5. Tropical cyclone wind forecasts (WDPN bulletins) are prepared by the 17 OWS when a tropical cyclone is within or forecasted to be within 300 NM of AAFB within 24 hours. WDPN's contain forecasted peak sustained wind speed and direction, peak wind gust, onset and duration of destructive winds (winds of 50 knots or greater), onset and duration of crosswinds, and closest point of approach (CPA) information.

4.3.5.1. Example of a Tropical Cyclone Wind Forecast:

WDPN PGUA 062100

TROPICAL CYCLONE FORECAST FOR ANDERSEN AFB GUAM

TROPICAL STORM JEANA (34W) AS FORECAST BY JTWC

WARNING # 8A ISSUED AT 062100.

A. WIND FORECAST:

06/18Z 010/10KT

07/00Z 010/15G25KT

07/06L 340/16G32KT

07/12Z 280/35G52KT

07/18Z 220/25G44KT

08/00Z 240/17G34KT

08/12Z 160/11G18KT

08/18Z 130/10G15KT

09/00Z 100/10KT

B. ONSET/DURATION OF 15KT CROSSWINDS: 07/02Z TO 08/01Z

C. ONSET/DURATION OF 20KT CROSSWINDS: 07/05Z TO 07/23Z

D. ONSET/DURATION OF 25KT CROSSWINDS: 07/08Z TO 07/17Z

E. ONSET/DURATION OF 50KT (DESTRUCTIVE) WINDS: 07/11Z TO 07/16Z

F. MAXIMUM SUSTAINED WINDS: 35 KTS.

G. PEAK WINDS: 52 KTS AT 07/12Z

H. CPA: 3NM BEARING 010 AT 07/12Z

I. REMARKS: ANDERSEN AFB IS CURRENTLY IN COR 2.

4.4. Tropical Cyclone Condition of Readiness (COR) Criteria and Weather Station Actions:

4.4.1. COR Conditions:

4.4.1.1. COR 4: Sustained winds of 50 knots or greater from a tropical cyclone are possible within the next 72 hours. (AAFB is always in COR 4 unless changed by 36 ABW/CC due to an approaching tropical cyclone)

4.4.1.2. COR 3: Sustained winds of 50 knots or greater from a tropical cyclone are possible within the next 48 hours on AAFB.

4.4.1.3. COR 2: Sustained winds of 50 knots or greater from a tropical cyclone are possible within the next 24 hours on AAFB.

4.4.1.4. COR 1 (Caution): Sustained winds of 50 knots or greater from a tropical cyclone are possible within the next 12 hours on AAFB.

4.4.1.5. COR 1 (Emergency): In effect when sustained winds of 50 knots from a tropical cyclone are observed to occur on AAFB.

4.4.1.6. COR 1 (Recovery): When sustained winds of 50 knots or greater from a tropical cyclone are no longer observed or expected for AAFB.

4.4.2. CWT COR Actions:

4.4.2.1. COR 4: Normal operations

4.4.2.2. COR 3, COR 2 and COR 1 (Caution):

4.4.2.2.1. Brief Battle Staff or Crisis Action Team on current JTWC warning, Satellite imagery, AAFB and regional base forecasts.

4.4.2.2.2. Update work centers who prior-coordinate for tropical cyclone email support with forecast and current position every six hours via email (IAW [Attachment 5](#))

4.4.2.3. COR 1 (Emergency) and COR 1 (Recovery):

4.4.2.3.1. No TAF, Warnings/Watches or Advisories will be issued until the all clear is given and the base returns to COR 4. WDPNs become the official weather product and will continue to be issued at scheduled times, if at all possible.

4.4.2.3.2. No outside observations will be taken during COR 1 (Emergency). Observations will be disseminated hourly containing only those elements that can be determined from indoor instrument displays.

4.4.2.3.3. Collect as much weather data as possible for later reports and studies. Data will include, at a minimum, satellite imagery, hard copies of radar velocity/reflectivity products, and Internet data that may be useful. During all tropical cyclones that may cause damage to the base or the island, the radar database will be saved to optical disk and the AMIS database will be saved to CD-R.

4.4.2.3.4. Update work centers who prior-coordinate tropical cyclone support with forecast and current position every 6 hours via email (IAW [Attachment 5](#)).

Chapter 5

WEATHER WATCHES AND WARNINGS

5.1. General: The 17 OWS or CWT will issue weather watches, warnings, or advisories when conditions warrant. The term “base” is defined as an area 5 statute miles in radius centered on the AAFB runway complex. Weather watches, warnings and advisories for the base will be issued 24 hours a day, 7 days a week. The CWT will coordinate all requirements for and ensure timely issuance of weather watches, warnings and advisories in accordance with AFMAN 15-129, *Aerospace Weather Operations-Processes and Procedures*.

5.2. Severe Weather Action Procedures (SWAP):

5.2.1. The CWT and 17 OWS will initiate and maintain a heightened meteorological watch and implement severe weather action procedures IAW HQ USAF/XOWP policy whenever a severe weather warning or watch is issued.

5.2.1.1. Severe Weather at AAFB is defined as winds gusting to 50 knots or more.

5.2.1.2. Tornado watches or warnings will not be issued for AAFB. The tropical environment of Guam is not conducive to tornado formation. Weak, cold core funnel clouds and waterspouts do occur; but are not the destructive severe weather tornadoes.

5.2.2. Whenever a severe weather watch or warning is issued, CWT personnel will coordinate with 17 OWS personnel for proper implementation of the following actions:

5.2.2.1. Recall the CWT weather technician if station is currently closed.

5.2.2.2. Recommend additional weather technicians be recalled to augment the CWT.

5.2.2.3. Increase Radar, METSAT, LDS, and Metwatch at CWT.

5.2.2.4. Increase Observational Metwatch at CWT.

5.2.3. In case of unforeseen circumstances such as communications lines failure, a critical equipment outage at either the 17 OWS or CWT, etc., the CWT is obligated to institute at a minimum the SWAP step defined in paragraph [5.2.2.1](#).

5.2.4. When severe weather is forecasted to occur on Andersen AFB and prior to the issuing of severe weather watches or warnings, the CWT Weather technician (if CWT is open) or the 17 OWS forecaster (if CWT is closed) will initiate SWAP actions by contacting the weather flight commander or NCOIC by phone, cell phone, or beeper (if applicable). Staff recall procedures/numbers will be reviewed on a quarterly basis by the 17 OWS and CWT staff.

5.2.5. The CWT and 17 OWS will conduct and document a semi-annual review of the SWAP procedures. An actual severe weather event can be substituted for a review exercise.

5.3. Weather Watches : A special notice provided to advise of the potential for weather conditions that may pose a threat to property or life. When a weather watch is issued, customers must take preparatory actions, including reviewing applicable checklists to ensure rapid response in the event a subsequent Weather Warning is issued.

5.3.1. Weather Watch Criteria:

Table 5.1. Weather Watch Criteria

CRITERIA	THRESHOLD	LEAD-TIME	LOCATION
Lightning	Potential	30 min	W/in 5NM of the AAFB complex (see Attachment 11)
Winds	GTE 50 knots	4 hours	w/in 5NM of the AAFB runway complex

5.3.2. The following are examples of message text for weather watches:

5.3.2.1. Lightning Watch: WEATHER WATCH

VALID 21/0134Z (21/1134L) TO 21/0534Z (21/1534L)

THE POTENTIAL EXISTS FOR LIGHTNING W/IN 5 NM OF THE ANDERSEN AFB COMPLEX. A WARNING WILL BE ISSUED IF REQUIRED.

5.3.2.2. Severe Wind Watch (Winds GTE 50 knots): WEATHER WATCH

VALID 21/0134Z (21/1134L) TO 21/1334Z (21/2334L)

THE POTENTIAL EXISTS FOR SURFACE WIND GUSTS TO GREATER THAN OR EQUAL TO 50KTS AT ANDERSEN AFB. A WARNING WILL BE ISSUED IF REQUIRED.

5.4. Weather Warnings : A special notice provided when an established weather condition is occurring or imminent and poses a threat to property or life. When a weather warning is issued, customers must take immediate action in accordance with their established weather checklists to safeguard property and lives. There are two types of weather warnings. Observed warnings require no Desired Lead Time (DLT). Forecasted warnings all have a required DLT.

5.4.1. Weather Warning Criteria:

Table 5.2. Weather Warning Criteria

CRITERIA	THRESHOLD	LEAD-TIME	LOCATION
Surface wind	GTE 50 knots	120 minutes	AAFB runway complex
Surface wind	35 to 49 knots	60 minutes	AAFB runway complex
Heavy Rain	GTE 4 Inches in 6 Hours	60 minutes	AAFB runway complex
Lightning (For all AAFB agencies)	As observed	As observed	Within 5 nm of the center of AAFB runway complex Validated by a combination of human observation and a lightning detector. (see Atch 11)

CRITERIA	THRESHOLD	LEAD-TIME	LOCATION
Lightning (For the 36 MXS ammo complex. only) (M-F 0600-1800)	As observed	As observed	Within 5 nm of 36 MXS / MUNITIONS (MSA1) Validated by radar and a lightning detector. (see Attachment 11)

5.4.2. The following are examples of message text for both forecast and observed weather warnings:

5.4.2.1. Severe Wind Warning (Winds GTE 50 Kts):

FORECAST WEATHER WARNING

VALID 21/0133Z (21/1133L) TO 21/0433Z (21/1433L)

SURFACE WIND GUSTS TO GTE 50 KTS ARE EXPECTED AT ANDERSEN AFB MAX WINDS EXPECTED ARE 54 KTS.

5.4.2.2. Wind Warning (Winds from 35-49 Kts):

FORECAST WEATHER WARNING

VALID 21/0133Z (21/1133L) TO 21/0333Z (21/0533L)

SURFACE WIND GUSTS FROM 35-49 KNOTS ARE EXPECTED AT ANDERSEN AFB. MAX WINDS EXPECTED ARE 38 KTS.

5.4.2.3. Heavy Rain Warning (Heavy Rain GTE 4 inches in 6 hours):

FORECAST WEATHER WARNING

VALID 21/0133Z (21/1133L) TO 21/0333Z (21/0533L)

HEAVY RAIN IS EXPECTED AT ANDERSEN AFB WITH AN ACCUMULATION OF GREATER THAN 4 INCHES IN 6 HOURS.

5.4.2.4. Lightning Warning:

OBSERVED WEATHER WARNING

VALID 21/0133Z (21/1133L) TO UFN (UFN)

LIGHTNING OBSERVED WITHIN 5 NM OF THE CENTER OF THE AAFB AIRFIELD WITH AN ESTIMATED DURATION TIL 0215Z (1215L).

5.4.2.5. Lightning Warning:

OBSERVED WEATHER WARNING

VALID 21/0133Z (21/1133L) TO UFN (UFN)

LIGHTNING OBSERVED WITHIN 5 NM OF THE 36 MSX/MUNITIONS (MSA1) WITH AN ESTIMATED DURATION TIL 0215Z (1215L).

5.4.3. Weather warnings will:

5.4.3.1. Not be issued if there is an unforecasted occurrence that has stopped and is not expected to reoccur.

5.4.3.2. Be canceled or downgraded when the warning criteria is no longer expected to occur.

5.5. Dissemination of Watches and Warnings:

5.5.1. 17 OWS/WXR will disseminate weather watches and warnings via AFW meteorological communications systems (i.e. NTFS). The 17 OWS will make confirmation calls to the Andersen technician and to the 36 ABW Command Post. Time permitting, the 17 OWS will call the Andersen technician prior to issuing/canceling a weather watch or warning. The 36 ABW Command Post is the single point of dissemination of weather watches and warnings for AAFB.

5.5.2. The local voice dissemination diagram for weather watches and warnings affecting AAFB is contained in **Attachment 3** and **Attachment 4** with one exception. An additional warning for lightning w/in 5NM of the 36 MXS /Munitions (MSA1) will be disseminated via NTFS with backup telephone notification by the CWT. 36 MXS/Munitions (MSA2) is located near the airfield and should respond to lightning warnings for the airfield. The two lightning warnings are separate and may not be issued at the same time. The 36 MXS will be notified of observed lightning w/in 5NM from 0600-1800 M-F only. 36MXS will coordinate with the on-duty technician for the lightning warnings to extend beyond 1800 or on the weekends.

5.5.3. Backup Dissemination Procedures: The confirmation calls from the 17 OWS to the Andersen technician and the 36 ABW Command Post are used as backup in case of failure of the electronic dissemination of weather watches, warnings and advisories via AMIS.

5.5.4. Forecast Weather Warnings/Watches with a specified lead-time will have a forecast valid period. A Warning/Watch may be canceled early or extended based on evaluation by the technician.

5.5.5. Observed Lightning Weather Warnings will be issued with an end time of "Until Further Notice (UFN)," but the text will state an estimated duration time. Lightning warnings will be canceled when criteria are no longer observed.

5.5.6. Each weather warning is issued as an entity. There will be at most one warning valid for each AAFB at any one time. EXCEPTION: Observed lightning warning may be issued when other warnings are valid.

5.5.7. Each weather warning will be consecutively numbered by month and warning number (07-001 indicates the first warning in July).

5.6. Severe Weather Impacts on Primary Customers:

5.6.1. 734 AMS:

5.6.1.1. Severe Weather Watch for Winds GTE 50 Knots: All loading stands near aircraft moved away; turn aircraft to face the wind with wing flaps turned up.

5.6.1.2. Severe Weather Warning for Winds GTE 50 KTS: In addition to the watch actions, no work can be done on the flightline or inside the aircraft without the approval of the Maintenance Supervisor/ Maintenance Superintendent; no loading or unloading of equipment permitted.

5.6.2. HC-5:

5.6.2.1. Severe Weather Watch for Winds GTE 50 Knots: Place aircraft in hangars.

5.6.2.2. Severe Weather Warning for Winds GTE 50 KTS: In addition to the watch actions, flight operations are severely limited.

5.6.3. 36 ABW/PA:

5.6.3.1. Severe Weather Watch for Winds GTE 50 Knots: Consider placing information onto the 36

ABW/CC's information channel.

5.6.3.2. Severe Weather Warning for Winds GTE 50 KTS: Place the information on the 36 ABW/CC's information channel.

5.6.4. 36 MXS/MXMG:

5.6.4.1. Severe Weather Watch for Winds GTE 50 Knots: Remove non-essential equipment from Flightline.

5.6.4.2. Severe Weather Warning for Winds GTE 50 KTS: Pull in most flightline equipment if able to.

All personnel are pulled from the flightline.

5.6.5. 36 MSG/LGRF:

5.6.5.1. Severe Weather Watch for Winds GTE 50 Knots: Proceed with caution for all refueling operations.

5.6.5.2. Severe Weather Warning for Winds GTE 50 KTS: All flightline fueling activities are halted.

5.6.6. Trend Western:

5.6.6.1. Severe Weather Watch for Winds GTE 50 Knots: Proceed with caution, secure loose items near work areas and on flightline.

5.6.6.2. Severe Weather Warning for Winds GTE 50 KTS: Vehicle operations and maintenance are limited to essential tasks.

5.6.7. 36 ABW/Safety:

5.6.7.1. Severe Weather Watch for Winds GTE 50 Knots: Conduct spot checks around the base to ensure that agencies have either secured equipment and personnel (both as needed).

5.6.7.2. Severe Weather Warning for Winds GTE 50 KTS: Conduct spot checks around the base to ensure that agencies have either secured equipment and personnel (both as needed).

Chapter 6

WEATHER ADVISORIES

6.1. General : Weather Advisories (WAs) are special notices provided to a supported agency when an established weather condition that could affect its operation is occurring or is expected to occur. A dissemination diagram is contained in [Attachment 4](#). Forecast Advisories are issued based on required lead-times. Observed advisories are issued based on observation of advisory criteria.

6.2. Weather Advisories:

6.2.1. WAs will be issued when one or more criteria are observed or forecast. Forecasted weather advisories (FWA's) will have a required lead-time. Observed weather advisories (OWA) will be issued when advisory criteria is first observed.

Table 6.1. Weather Advisory Criteria

CRITERIA	THRESHOLD	LEAD-TIME	LOCATION
Surface wind	25 to 34 knots	1 hour	AAFB runway complex
Crosswinds	15 to 19 knots	As observed	AAFB runway complex
Crosswinds	GTE 20 knots	As observed	AAFB runway complex
Non-convective wind shear	Below 2000 ft AGL	As observed (via PIREP)	w/in 5NM of the center of the AAFB runway complex

6.2.1.1. The following are examples of message text for a forecast weather advisories (FWA):

6.2.1.2. Wind Advisory:

FORECAST WEATHER ADVISORY

VALID 21/0131Z (21/1131L) TO 21/1530Z (22/0130L)

SURFACE WIND GUSTS FROM 25-34 KNOTS ARE EXPECTED AT ANDERSEN AFB.
MAX WINDS EXPECTED ARE 28 KTS.

6.2.2. The following are examples of message text for observed weather advisories (OWA):

6.2.2.1. Crosswind Advisory:

OBSERVED WEATHER ADVISORY VALID

21/0131Z (21/1131L) TO UFN (UFN)

CROSSWINDS OF 15-19 KNOTS ARE OBSERVED AT ANDERSEN AFB.

6.2.2.2. Crosswind Advisory:

OBSERVED WEATHER ADVISORY

VALID 21/0131Z (21/1131L) TO UFN (UFN)

CROSSWINDS OF GTE 20 KNOTS ARE OBSERVED AT ANDERSEN AFB.

6.2.2.3. Wind Shear Advisory:

OBSERVED WEATHER ADVISORY
VALID 21/0131Z (21/1131L) TO UFN (UFN)
WINDSHEAR BELOW 2000FT HAS BEEN OBSERVED AT ANDERSEN AFB.

6.3. Dissemination of Advisories:

6.3.1. 17 OWS/WXR will disseminate weather advisories via AFW meteorological communications systems (i.e. NTFS). The 17 OWS will make confirmation calls to the Andersen technician and to the 36 ABW Command Post. Time permitting, the 17 OWS will call the Andersen technician prior to issuing /canceling a forecast advisory. The 36 ABW Command Post is the single point of dissemination of advisories for AAFB. The local voice dissemination diagram for weather advisories affecting AAFB is contained in [Attachment 4](#).

6.3.2. Backup Dissemination Procedures: The confirmation calls to the Andersen technician and the 36 ABW Command Post are used as backup in case of failure of the electronic dissemination of weather advisories via NTFS.

6.3.3. FWAs with a specified lead-time will have to forecast valid end time. An advisory may be canceled early or extended based on evaluation by the technician.

6.3.4. OWAs with "As Observed" lead-times will have UFN as a valid end time until canceled. They will be terminated when criteria are no longer observed.

6.3.5. Each WA will be consecutively numbered by month and advisory number, i.e. 07-001 indicates the first advisory in July.

Chapter 7

RECIPROCAL SUPPORT

7.1. General : For effective weather support, the CWT provides weather support to and receives support from various agencies on AAFB and Guam. Supported agencies will:

7.1.1. Establish all weather support requirements with the CWT. This must be done with sufficient advance notice to allow for necessary adjustments and preclude adverse impact on the CWT ability to support pre-existing requirements. This includes coordinating changes in mission impacting weather thresholds for flying and non-flying operations.

7.1.2. For units that have access to the LAN PC based NTFS software, use this method to the greatest extent possible as a source of weather data. Data provided on the system includes: AAFB current observations, weather watches, warnings, and advisories.

7.2. 36 ABW:

7.2.1. The CWT will:

7.2.1.1. Advise the 36 ABW/CC and staff in all matters pertaining to weather. This is the primary responsibility of the weather flight commander in his capacity as the 36 ABW/SWO.

7.2.1.2. Provide inputs to environmental support annexes in 36 ABW operations plans and orders and provide support IAW those annexes.

7.2.1.3. Present weather briefings at 36 ABW staff/battle staff meetings and at the commander's request.

7.2.1.4. Keep the 36 ABW/CC continuously informed of the status of weather phenomena (particularly tropical cyclones) threatening 36 ABW resources.

7.2.1.5. Keep the 36 ABW/CC advised of capabilities and limitations of the CWT's facilities and personnel.

7.2.1.6. Inform the 36 ABW/CP of any situation involving weather service, personnel, or resources, to include 50kt wind gusts, which may need OPREP-3 reporting IAW AFI 13-202, *Overdue Aircraft* and AFMAN 10-206, *Operational Reporting*.

7.2.1.7. Provide the following products and services to the 36 ABW/CP:

7.2.1.7.1. Weather watches, warning and advisory support IAW and Attachments 34.

7.2.1.7.2. A copy of each plot of a tropical cyclone formation alert or warning bulletin for tropical cyclones to include wind forecasts for the 13AF AOR, Korea, or Japan via email.

7.2.1.7.3. Contact the 36 ABW/CP if a significant weather event or a significant change in the forecast occurs.

7.2.1.8. Provide current wind direction and speed to 36 ABW Disaster Response Force upon request when notified of toxic chemical spills by the Disaster Response Force (Bioenvironmental Engineer). Requested weather information is relayed to the Disaster Control Group on-scene commander via any available means (36 ABW/CP, secondary crash net, telephone, etc.).

7.2.2. 36 ABW will provide (to properly cleared weather personnel) access to 36 ABW plans, programs, and operations to ensure complete consideration of weather factors.

7.2.3. 36 ABW/CP will:

7.2.3.1. Act as the single point of contact for AAFB to disseminate warnings/watches and advisories to AAFB associate or subordinate agencies IAW [Attachment 3](#) and [Attachment 4](#).

7.2.3.2. Provide work space at the command post (table, two chairs, telephone, and access to a fax machine) when the weather flight temporarily relocates (i.e. bomb threats, fire).

7.2.3.3. Notify the CWT immediately of AMIS software outages. They will not move any equipment without the CWT's coordination and approval.

7.3. Airfield Management (36 OSS/OSAM):

7.3.1. The CWT will:

7.3.1.1. Notify OSAM of weather conditions occurring that may cause a change in RSC.

7.3.1.2. Notify OSAM when changes affecting the weather station are required to be posted in the DoD FLIP manual.

7.3.1.3. Notify OSAM when a CWT evacuation is required.

7.3.2. 36 OSS/OSAM will:

7.3.2.1. Notify the CWT weather technician of changes in the RSC and/or Bird Airfield Strike Hazard (BASH).

7.3.2.2. Notify the CWT via the secondary crash net of all calls received over the primary crash net.

7.3.2.3. Notify the CWT via secondary crash net of any changes to exercise or contingency conditions.

7.3.2.4. Notify the CWT of locally initiated changes to the DoD FLIP that affect landing minimums.

7.3.2.5. Notify the CWT of changes to structures on the airfield that may effect CWT visibility maps.

7.3.2.6. Promptly disseminate warnings/watches and advisories IAW [Attachment 3](#) and [Attachment 4](#).

7.3.2.7. Notify the CWT when evacuation of the facility is required.

7.4. Tower (36 OSS/OSAT):

7.4.1. The CWT will:

7.4.1.1. Disseminate all observations, Airfield MEFs, watches, warnings and advisories to the tower cab via the AMIS or telephone hotline IAW [Attachment 3](#). If the tower is evacuated, the CWT personnel will relay weather information to their alternate site by any means available.

7.4.1.2. Notify tower controllers of any NTFS, PMSV radio, or FMQ-13 Wind Measuring Set outages or problems.

7.4.1.3. Verify the current Altimeter Setting (ALTSG) when requested by air traffic control personnel.

7.4.1.4. Take an observation of all weather elements when notified by the control tower of a weather change outlined under the CWW program (para 2.4.). This observation will be disseminated if it meets the criteria outlined in paragraph 2.3.1.

7.4.1.5. When notified of a runway change, the weather technician will ensure the approach end cloud height instruments are used, if available, and take a runway change Local observation.

7.4.1.6. Schedule weather personnel for an Air Traffic Indoctrination Briefing with the Chief, Air Traffic Control Training or alternate as required.

7.4.1.7. Provide initial visibility observation training and certification to all controllers IAW AFI 13-203 *Air Traffic Control* paragraph 6.14.

7.4.2. Andersen Tower (36 OSS/OSAT) will:

7.4.2.1. Perform CWW IAW paragraph 2.4.

7.4.2.2. Relay all local PIREPS to the CWT.

7.4.2.3. Notify CWT of any changes in active runway and ensure the approach end wind measuring instruments are used if available.

7.4.2.4. Notify the CWT when necessary to use inactive runway sensors when authorizing aircraft to land using inactive runway.

7.4.2.5. Notify CWT of any AMIS terminal or FMQ-13 Wind Measuring Set outages or problems.

7.4.2.6. Allow weather personnel to temporarily relocate to the tower during weather station evacuation. The tower is not the primary evacuation site, but weather personnel could evacuate to the tower in the event the 36 ABW/CP is unavailable.

7.4.2.7. Schedule all air traffic controllers for the ATC Weather Familiarization/Visibility Observation Training with the CWT NCOIC or alternate.

7.4.2.8. Provide weather personnel an Air Traffic Indoctrination Briefing.

7.4.2.9. Monitor the CWT PMSV radio frequency (344.6) if the CWT radio is inoperative for short-term outages (normally less than one hour) and relay information to the weather station.

7.5. AMC Command Post (734 AMS/C2) : Support will be IAW AMCI 15-101, *AMC Weather Support Requirements*.

7.5.1. The CWT will:

7.5.1.1. Notify the AMC CP of any AMIS problems.

7.5.1.2. Disseminate forecasts, observations, weather warnings/watches and advisories over the AMIS and significant weather notification IAW **Attachment 3** and **Attachment 4**.

7.5.1.3. Relay landing forecast for AMC aircraft via telephone or hotline if requested.

7.5.2. The 734 AMS/C2 will:

7.5.2.1. Enter Computer Flight Plan (CFP) into the 17 OWS aircrew briefing system for all AMC scheduled departures NLT two hours prior to aircraft takeoff.

NOTE: Due to the large number of units supported by the 17 OWS and the high volume of requests received, if briefings are entered with less than 2 hours notice, the requests may not arrive at the requested brief time due to previously entered requests. High priority missions (i.e. Medical Evacs) will take precedence over all other briefings.

7.5.2.2. Advise the 17 OWS flight briefing section of any AMC flights delayed more than one hour beyond scheduled departure time.

7.5.2.3. Alert the CWT when a hazard report involving weather service might be filed.

7.5.2.4. Notify the CWT of AMIS problems.

7.6. HC-5 (IAW Inter-Service Agreement:)

7.6.1. The CWT will:

7.6.1.1. Produce a flight weather MEF three times daily at 0400L, 1200L and 2000L. This daily brief will include, among other things, the local area forecast, upper-level winds, weather, flight hazards and other significant data as requested.

7.6.1.2. Provide mission weather briefs either in person or over fax or phone as requested.

7.6.1.3. Provide weather warnings/watches and advisories notification IAW [Attachment 3](#) and [Attachment 4](#).

7.6.2. HC-5 will contact the CWT and request mission briefs before flights.

7.7. 13th Air Force:

7.7.1. The CWT will:

7.7.1.1. Advise 13 AF/CC and staff in all matters pertaining to weather. This is the primary responsibility of the weather flight commander in their capacity as the on-island representative for 13 AF/SWO.

7.7.1.2. Provide inputs to environmental support annexes in 13 AF operations plans and orders and provide support IAW those annexes.

7.7.1.3. Present weather briefings at 13 AF staff/battle staff meetings and at the commander's request.

7.7.1.4. Keep 13 AF/CC advised of capabilities and limitations of the CWT's facilities and personnel.

7.7.1.5. Contact 13 AF if a significant weather event or a significant change in the forecast occurs and is contrary to what was briefed at the staff/battle staff meetings.

7.7.1.6. Advise 13 AF/Det 3 on tropical cyclones affecting Wake Island and act as liason between National Weather Service (NWS) and 13 AF/Det 3 for NWS tropical storm/typhoon watches and warnings for Wake Island.

7.7.2. 13 AF will provide (to properly cleared weather personnel) access to 13 AF plans, programs, and operations to ensure complete consideration of weather factors.

7.8. 36 CES:

7.8.1. The CWT will provide quarterly weather data (cooling degree days) to 36 CES/CEOE.

7.8.2. 36 CES will provide routine facility repairs and maintain the back-up power generator and NEXRAD UPS.

7.9. 36 CS:

7.9.1. The CWT will:

7.9.1.1. Contact job control with any outages.

7.9.1.2. Log all outages and track their status in the outage book.

7.9.2. Meteorological/Navigation Aids (METNAV) will:

7.9.2.1. Coordinate with the CWT prior to performing preventive maintenance.

7.9.2.2. Maintain continuous response capability and respond within 30 minutes for significant impact outages and during normal duty hours for minimal impact outages of meteorological sensors as listed in [Attachment 8](#).

7.9.2.3. In the event of equipment outages, METNAV repair priorities are as follows:

7.9.2.3.1. AN/FMQ-13, Wind Measuring Set.

7.9.2.3.2. AN/GMQ-34, Laser Beam Ceilometer.

7.9.2.3.3. ML-658/GM, Digital Barometer (DBASI).

7.9.2.3.4. AN/FMQ-8, Temperature-Dewpoint Measuring set.

7.9.3. Radar Maintenance section will:

7.9.3.1. Coordinate with the CWT prior to performing maintenance or repairs.

7.9.3.2. Maintain continuous response capability for the WSR-88D, Doppler Weather Radar.

7.9.3.3. In the event of Radar outages, Radar Maintenance Section repair priorities are as follows:

7.9.3.3.1. Radar Data Acquisition (RDA) unit.

7.9.3.3.2. CWT Principal Unit Processor (PUP).

7.9.3.3.3. Alternate Forecast Site (36 ABW command post) PUP.

7.9.4. Radio Maintenance section will:

7.9.4.1. Coordinate with the CWT prior to performing maintenance or repairs.

7.9.4.2. Maintain continuous response capability and respond for PMSV radio outages.

7.10. 36 MXS/MXMW (Munitions)

7.10.1. The CWT will:

7.10.1.1. Provide weather warning/watch and advisory support IAW [Attachment 3](#) and [Attachment 4](#)

7.10.1.2. Telephone and fax warnings of lightning w/in 5NM of 36 MXS Ammo complex MSA1 and MSA2 from 0600-1800 M-F only. Additional requests for weather support should be addressed to the weather flight commander or the NCOIC, CWT Operations.

7.10.2. 36 MXS/MXMW will:

7.10.2.1. Notify the CWT, via hotline or telephone, of any observed lightning in the area.

7.10.2.2. Coordinate with the CWT the need to extend either of the 5NM lightning warnings beyond 1800 due to exercises, weekend work, etc.

7.11. 36 LRS/LGRF (Fuels)

7.11.1. The CWT will provide weather warning/watch and advisory support IAW [Attachment 3](#) and [Attachment 4](#)

7.11.2. 36 LRS/LGRF (Fuels) will notify the CWT, via hotline or telephone, of any observed lightning in the area.

7.12. FAA/CCF (IAW MOA)

7.12.1. The CWT will:

7.12.1.1. Notify FAA/CCF if radar assistance is needed. Help will normally be needed only when the NEXRAD radar is inoperable and thunderstorms or tropical cyclones are within 200NM of AAFB. During these periods, the CWT may send one or more radar operators to the FAA/CCF radar to observe the weather firsthand and/or perform typhoon fixes.

7.12.1.2. Notify FAA/CCF of any AMIS outages that may effect them.

7.12.1.3. Provide ALSTG readings upon request.

7.12.2. FAA/CCF will:

7.12.2.1. Relay any local PIREPS they receive to the CWT.

7.12.2.2. Provide ALSTG readings to CWT personnel upon request.

7.12.2.3. Notify the CWT of AMIS outages/problems.

7.12.2.4. Allow CWT radar operators access during significant NEXRAD outages.

7.13. Detachment 5, 50th Space Wing

7.13.1. The CWT will:

7.13.1.1. Provide weather warning/watches and advisories notification IAW [Attachment 3](#) and [Attachment 4](#).

7.13.1.2. Provide weather support and climatology data as requested.

7.13.2. Detachment 5, 50 Space Wing--No support provided.

7.14. 613 Contingency Response Group

7.14.1. The CWT will:

7.14.1.1. Provide weather warning/watches and advisories notification IAW [Attachment 3](#) and [Attachment 4](#).

7.14.1.2. Provide weather support, climatology, and light data as requested.

7.14.2. 613 Contingency Response Group will provide the CWT with information on contingency and exercise locations for specific climatology and light data support thunder/lightning in the area.

JOSEPH F. MUDD, JR., Colonel
Commander

Attachment 1**GLOSSARY OF REFERENCES, ABBREVIATIONS AND ACRONYMS*****References***

AFI 13-202, *Overdue Aircraft*

AFI 25-201, *Support Agreement Procedures*

AMCI 15-101, *AMC Weather Support Requirements*

Abbreviations and Acronyms

AAFB—Andersen Air Force Base

AGL—Above Ground Level

ALTSG—Altimeter Setting

AOS—Alternate Observing Site

AFS—Alternate Forecast Site

ATC—Air Traffic Control

AMIS—Automated Weather Distribution System

CWT—Base Weather Station

BWW—Basic Weather Watch

CFP—Computer Flight Plan

CPA—Closest Point of Approach

CWW—Cooperative Weather Watch

DoD—Department of Defense

IAW—In Accordance With

FLIPs—Flight Landing Information Publications

JTWC—Joint Typhoon Warning Center

WSCOND—Wind Shear Conditions (Low Level Wind Shear)

MOOTW—Military Operations Other Than War

MSL—Mean Sea Level

PA—Pressure Altitude

PIREPS—Pilot Reports

PMSV—Pilot to Metro Service

RSC—Runway Surface Condition

SWO—Staff Weather Officer

TACC—Tanker Airlift Control Center

TAF—Terminal Aerodrome Forecast

COR—Tropical Cyclone Condition Of Readiness

TCFA—Tropical Cyclone Formation Alert

VIS—Visibility

WA—Weather Advisory

WDPN—Bulletin Heading for Tropical Cyclone Wind Forecast

WW—Weather Warning or Weather Watch

Attachment 2

SPECI AND LOCAL OBSERVATION CRITERIA

A2.1. SPECI Weather Observation Criteria:

A2.1.1. SPECI observations are taken to report significant changes in weather elements, specified below. The actual time of a SPECI is the time the element requiring the special was observed to occur.

A2.1.1.1. Ceiling. A ceiling (5/8 or more sky coverage) forms below, decreases to less than, or if below, increases to equal or exceed:

3,000 ft	500 ft	*200 ft
1,500 ft	700 ft	*400 ft
1,000 ft	*600 ft	300 ft

NOTE: All criteria are from AFMAN 15-111 and/or DoD FLIPs unless preceded with an *. All criteria preceded with an * are from DoD FLIPs only

A2.1.1.2. Sky condition. A layer of clouds or obscuring phenomena aloft (not reported in the previous observation) is observed below:

600 ft

A2.1.1.3. Visibility. If prevailing visibility decreases to less than, or if below, increases to equal or exceed the criteria listed below:

3 miles	*1 1/4 miles	*1/2 mile
2 miles	1 mile	
*1 1/2 miles	*3/4 mile	

NOTE: All criteria are from AFMAN 15-111 and/or DoD FLIPs unless preceded with an *, all criteria preceded with an * are from DoD FLIPs only.

A2.1.1.4. A tornado, funnel cloud, or waterspout: (Preceded by an "urgent" alert)

A2.1.1.4.1. Is first observed.

A2.1.1.4.2. Disappears from sight.

A2.1.1.5. Lightning:

A2.1.1.5.1. Begins.

A2.1.1.5.2. Ends (*15 minutes* after last occurrence of lightning).

A2.1.1.6. Precipitation:

A2.1.1.6.1. Any type of precipitation begins or ends.

A2.1.1.7. Wind and Wind Shifts:

A2.1.1.7.1. Squall (SQ). The speed suddenly increases by at least 16 knots and is sustained at 22 knots or more for at least 1 minute.

A2.1.1.7.2. Wind Shift (WSHFT). A change in wind direction of 45 degrees or more in less than 15 minutes with sustained winds of 10 knots or more throughout the wind shift.

A2.1.1.8. Runway conditions. Upon receipt of wet runway (WR//), transmit runway surface condition as a SPECI or append to a SPECI, or METAR observation already in progress.

A2.1.1.9. Tower Visibility (TWR VIS): Upon receipt of a reportable tower visibility value, when either tower or CWT's visibility is less than four miles and they differ by a reportable SPECI criteria.

A2.1.1.10. Miscellaneous.

A2.1.1.10.1. Single Element SPECI. Single element SPECIs will be taken only when a delay in reporting all elements of the SPECI would cause an immediate threat to life or property. e.g. WATERSPOUT 7 NW MOV UNKN

A2.1.1.10.2. Resumption of Observing Services. Take, disseminate, and record a SPECI observation within 15 minutes of returning to duty following a break in hourly coverage (i.e., CWT evacuation) if a METAR observation was not filed as scheduled during that 15-minute period.

A2.1.1.10.3. Any meteorological situation, which, in the opinion of the technician, is critical to the safety of aircraft operations.

A2.1.1.10.4. Real-World Nuclear Accident

A2.1.1.10.5. Volcanic Ash. When first observed.

A2.2. LOCAL Observation Criteria:

A2.2.1. LOCAL observations are taken to report changes in conditions significant to local airfield operations but not meeting SPECI criteria. They will be taken to report the following conditions:

A2.2.2. Aircraft Mishap. Immediately following notification or sighting of an aircraft mishap at or near the station, unless there has been an intervening METAR or SPECI observation taken. These observations consist of elements normally included in a METAR observation.

A2.2.3. Change in Runway. Following notification of a change in the active runway, allowing time for weather equipment to update on the new active runway before dissemination. These LOCALs will contain all elements normally included in a METAR observation except temperature and dewpoint.

A2.2.4. Runway Conditions: Upon notification of the Runway Surface Condition no longer wet (WR//). Transmit a full element LOCAL, or include in a SPECI or METAR if already in progress, deleting WR// from the remarks of the observation.

A2.2.5. Altimeter Setting. At a frequency not to exceed 35 minutes when there has been a change of 0.01 Hg or more since the last locally disseminated value. This observation may be taken and disseminated as a single element LOCAL

A2.2.6. Other Meteorological Situations. Any meteorological situation, which is, in the opinion of the technician, significant to local operations.

A2.2.7. Tower Visibility. Upon receipt and when different from CWT visibility by a reportable SPECI criteria, for visibility takeoff minimums, as listed in DoD FLIPs and appropriate Air Force and

PACAF publications. May be taken and disseminated as a single element LOCAL or appended to a METAR or SPECI being taken at the time.

A2.2.8. Ceilings less than or equal to 800 feet in accordance with AFI 13-203 para 4.20.1 in support of the Instrument Landing System (ILS)

Attachment 3

WEATHER DISSEMINATION PROCEDURES

A3.1. Weather watches, warnings, advisories, observations, and TAFs, will be disseminated via AFW meteorological communication system (i.e. NTFS) and can be obtained over the Intranet using an NTFS application software available from the CWT. The weather information listed above is also posted on the 17 OWS webpage.

A3.2. Backup Notification Procedures : Weather warnings, watches, and advisories for AAFB will be disseminated via a single point of contact (36 ABW/CP). 17 OWS will contact the 36 ABW/CP for all forecast warnings, watches, and advisories; and the CWT will contact the 36 ABW/CP for all observed advisories and warnings. Watches, warnings, and advisories will also be posted on the 17 OWS website.

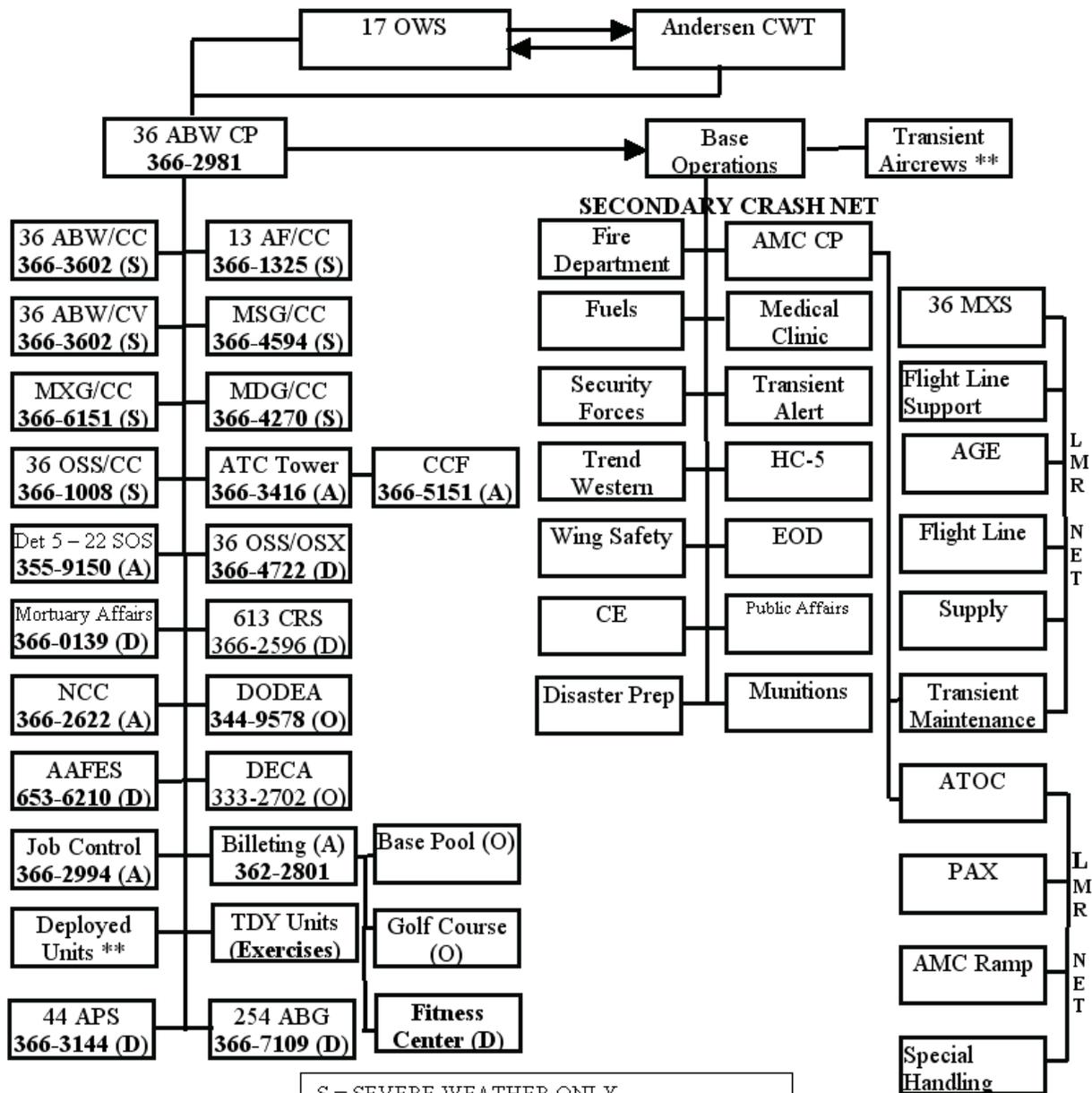
A3.2.1. 36 ABW/CP will disseminate weather watches, warnings and advisories IAW [Attachment 4](#) with one exception.

A3.2.1.1. EXCEPTION: 36 MXS/MXMWSC (Munitions) will get backup notification for the additional observed warning for lightning within 5 nm of the 36 MXS ammo complex (MSA1) via telephone from the CWT. MSA2 is located on the airfield and should respond to the warning for lightning within 5 NM of the airfield. The two warnings are separate and may not be issued at the same time.

A3.3. Local Voice Dissemination Procedures : Observations and forecasts will be disseminated via telephone to the Andersen ATC tower during network / NTFS outages.

Attachment 4

WEATHER WARNING, WATCH, AND ADVISORY NOTIFICATION DIAGRAM * HANDLING



S = SEVERE WEATHER ONLY
 A = ALL TIMES
 D = DURING DUTY HOURS (0700 - 2000)
 O = DURING HOURS OF OPERATION
 ** TEMPORARY UNITS NOTIFIED DURING HOURS OF OPERATIONS

* For simplicity and ease of use, one flowchart is used for all watches, warnings, and advisories notifications. If you receive notification of weather criteria, which does not affect your operations, simply ignore the notification. Please do not call to get removed from the notification list.

Attachment 5**TROPICAL CYCLONE INFORMATION DISSEMINATION PROCEDURES**

A5.1. TCFA (Tropical Cyclone Formation Alerts) and Tropical cyclone warnings . They will be emailed as a courtesy to the agencies listed below. Units deployed to AAFB can coordinate with the CWT to receive the tropical cyclone emails. In the event of a base email outage and a tropical cyclone is forecasted to affect AAFB within 72 hours, all tropical cyclone information will be briefed at Wing Battle Staff meetings. The latest graphics are also available via the Internet on the Joint Typhoon Weather Center (JTWC) website.

A5.1.1. 13AF/CV Messages; 13AF Directors; 13AF/GP All Users; 36 ABW/PA; 36ABW.CCP; 36ABW/CC; 36ABW/CC Commander's List; 36ABW/CV; 36ABW/CV Vice Commander's List; 36ABW/SE MSGS; 36ABW-GROUP CC's; 36ABW-IG; 36ABW-SQUADRON CC's; 36CE.CEX; 36OSS-OSW; 36OSS-OSX; 734AMS - All CC Staff; 13AF/CV Messages; 734AMS C2, deployed units(with prior coordination)

A5.2. PGUA WDPNs will be disseminated longline over the AMIS . The information contained in the WDPN will be briefed in Wing Battle Staff Meetings to help set COR conditions, if required.

Attachment 6

WEATHER CODE BREAKDOWN

A6.1. Forecasts:

Ex.

PGUA FCST 05-05 11010KT 5-SHRA VCTS SCT020CB BKN080 OVC130 LGT-MDT CAT 010-060
ALSTG29.92INS

BECMG 16-17 13012G20KT 7 NSW SCT010 BKN130 ALSTG29.98INS

TEMPO 01-05 BKN010 T29/03Z T23/18Z 12/RDG

A6.2. Observations:

Ex. PGUA METAR 0555Z 09017KT 4 -SHRA SCT030 BKN080 OVC120 29/27 ALSTG 29.99 RMK
VIS NW 2 1/2 PA +550 DA +2570 WR// 55/RC;

Ex. PGUA LOCAL 0615Z 09017KT 4 -SHRA SCT030 BKN080 OVC120 ALSTG 29.99 RMK VIS NW
2 1/2 PA +550 WR// 15/RC;

Ex. PGUA SPECI 0635Z 09017KT 2 -SHRA SCT030 BKN080 OVC120 29/27 ALSTG 29.99 RMK VIS
NW 2 1/2 PA +550 DA +2570 WR// 35/RC;

A6.3. Breakdown of forecast elements

PGUA Andersen station identifier

FCST Forecast

05-05 Valid time in Zulu (0500Z TO 0500Z next day)

11010KT Wind direction/speed (from 110 degrees at 10 knots)

5 Visibility in miles

-SHRA Light rainshowers

VCTS Thunderstorms in the vicinity

SCT020CB Scattered Cumulonimbus at 2,000 ft AGL (hundreds of feet)

BKN080 Broken layer at 8,000 ft AGL

OVC130 Overcast layer at 13,000 ft AGL

LGT-MDT CAT Light to moderate Clear Air Turbulence

010-060 1,000 ft AGL to 6,000 ft AGL

ALSTG29.92INS Minimum altimeter setting (29.92) in inches of mercury

BECMG Indicates weather conditions will change

16-17 The time that the new weather conditions are expected. By 1600Z they will begin to
change and by 1700Z, the new weather conditions will be occurring.

13012G20KT Winds forecast to be from 130 degrees prevailing 12 knots with gusts to 20 knots

TEMPO 01-05 There are intermittent weather conditions expected from 0100Z - 0500Z

BKN010 The intermittent weather condition expected is a broken cloud layer at 1,000ft AGL

T29/03Z T23/18Z The maximum temperature expected is 29° C at 0300Z and the minimum emperature
expected is 23° C at 1800Z.

15/RDG The forecast was sent at 15 minutes past the hour and the technicians initials are
RDG.

The observations contain much of the same elements that are included in the forecasts. Exceptions are:

Altimeter setting is denoted by ALSTG.

PA indicates the Pressure Altitude.

DA indicates the Density Altitude.

NOTE: Other elements, remarks, etc., can be found on the charts provided.

A6.4. Temperature conversion

CELSIUS TO FAHRENHEIT

36C	96F	29C	85F	23C	74F	17C	63F	11C	52F
35	95	29	84	23	73	17	62	11	51
34	94	28	83	22	72	16	61	10	50
34	93	28	83	22	71	16	60	9	49
33	92	27	81	21	70	15	59	9	48
33	91	27	80	21	69	14	58	8	48
32	90	26	79	20	68	14	57	8	46
32	89	26	78	19	67	13	56	7	45
31	88	25	77	19	66	13	55	7	44
31	87	24	76	18	65	12	54	6	43
30	86	24	75	18	64	12	53	6	42

A6.5. Terms, abbreviations, and meaning

A6.5.1. Cloud types

<u>PHENOMENA</u>	<u>ABBREVIATION</u>
Cumulonimbus (Thunderstorm clouds)	CB
Towering Cumulus	TCU
Moderate Cumulus	MDT CU

A6.5.2. Weather

<u>PHENOMENA</u>	<u>ABBREVIATION</u>
Drizzle	DZ
Hail	GR
Ice Pellets	PL
Light Rain	-RA
Moderate Rain	RA
Heavy Rain	+RA
Light Rainshowers	-SHRA
Moderate Rainshowers	SHRA
Heavy Rainshowers	+SHRA
Rainshowers in the Vicinity	VCSHRA
Thunderstorms/Severe Thunderstorms	TS
Thunderstorms in the Vicinity	VCTS
Fog (Mist)	FG or BR
Haze	HZ
Smoke	FU
Volcanic Ash	VA
Snow	SN
Funnel Cloud	FC
Blowing Spray	BLPY

A6.5.3. Cloud cover amounts

<u>PHENOMENA</u>	<u>ABBREVIATION</u>
Clear	CLR or SKC
Few (1/8 to 2/8 clouds)	FEW
Scattered (3/8 to 4/8 clouds)	SCT
Broken (5/8 to 7/8 clouds)	BKN
Overcast (8/8 clouds)	OVC
Vertical Visibility (8/8 obscured)	VV

A6.5.4. Miscellaneous words and phrases

<u>PHENOMENA</u>	<u>ABBREVIATION</u>
All Quadrants	ALQDS
Altimeter Setting	ALSTG
Amendment	AMD
Approach	APCH
Below	BLO
Between Layers	BTL
Between	BTN
Clear Air Turbulence	CAT
Cloud Top	TOP
Correction	COR
Crosswinds	XWNDS
Current	CURR
During Climb	DURC
During Descent	DURD
East	E
Embedded in a Layer	EMBD
Enroute	ENRT
Estimated	ESTMD
Extreme	EXTRM
Flight Level	FL
From	FM
Forecast	FCST
Frequency	FREQ

Attachment 7

TAF SPECIFICATION AND AMENDMENT CRITERIA

A7.1. Specification Criteria : The elements in the TAF will be specified IAW the guidance in AFMAN 15-129 and general flight rules stated in AFI 11-203 Vol. 3. The 17 OWS will issue the TAF using the criteria listed in **Table A7.1**.

Table A7.1. (Base/Post) Terminal Aerodrome Forecast Specification Criteria

Forecast Element/Occurrence	Standard TAF Specification Criteria
Ceiling observed or later expected to decrease to less than, or if below, increase to equal or exceed:	3,000 feet 1,000 feet 800 feet 700 feet 500 feet 200 feet
Prevailing visibility observed or later expected to decrease to less than, or if below, increase to equal or exceed:	3 miles 2 miles 1 mile 1/2 mile
Surface Winds	The difference between the predominant wind speed (or gust) and the forecast wind speed (or gust) is 10 knots or more. Direction change > 30 degrees when the predominant wind speed or gusts are expected to be over 15 knots.
Icing, not associated with thunderstorms, from the surface to 10,000 feet MSL	The beginning or ending of icing first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.
Turbulence (for Cat II aircraft), not associated with thunderstorms, from the surface to 10,000 feet MSL	The beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds (for CAT II aircraft) and was not specified in the forecast.
Weather Warning criteria and/or Weather Advisory criteria including non-convective low level wind shear	Occurs, or are expected to occur, during the forecast period, but were not specified in the TAF. Is forecast in the TAF, but is no longer expected to occur during the forecast period.
Thunderstorms	Incorrect by forecast start or end time

A7.2. Forecast Amendments : 17 OWS will ensure the TAF is representative of expected or actual conditions. 17 OWS forecasters may amend the TAF anytime they consider it advisable in the interest of safety, efficiency of aircraft operations, flight planning, operational control, or in-flight assistance to aircraft to ensure the forecast is representative of actual or expected conditions. As a minimum, the elements in the TAF will amended IAW the guidance in AFMAN 15-129 and general flight rules stated in AFI 11-203 Vol. 3. The 17 OWS will amend the TAF IAW the list in [Table A7.2](#).

A7.2.1. Anytime an unforecast change occurs, is expected to occur or is expected to last more than 59 minutes and is not correctly forecast by the next whole hour from the time of occurrence. (e.g., if the time is 2147Z, the next whole hour is 2200Z)

A7.2.2. Anytime a forecast condition does not occur by the specified hour and is not expected to occur within the next 30 minutes.

A7.2.3. Anytime a temporary (TEMPO) group becomes predominant or is not expected to occur.

A7.3. Amendment Criteria:

A7.3.1. At a minimum, the 17 OWS will amend the TAF IAW [Table A7.2](#).

Table A7.2. (Base/Post) Terminal Aerodrome Forecast Amendment Criteria

Forecast Element/Occurrence	Standard TAF Amendment Criteria
Ceiling observed or later expected to decrease to less than, or if below, increase to equal or exceed:	3,000 feet 1,000 feet 200 feet
Prevailing visibility observed or later expected to decrease to less than, or if below, increase to equal or exceed:	3 miles 2 miles 1/2 mile
Surface Winds	The difference between the predominant wind speed (or gust) and the forecast wind speed (or gust) is 10 knots or more. Direction change > 30 degrees when the predominant wind speed or gusts are expected to be over 15 knots.
Icing, not associated with thunderstorms, from the surface to 10,000 feet MSL	The beginning or ending of icing first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.
Turbulence (for Cat II aircraft), not associated with thunderstorms, from the surface to 10,000 feet MSL	The beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds (for CAT II aircraft) and was not specified in the forecast.
Weather Warning criteria and/or Weather Advisory criteria including non-convective low level wind shear	Occurs, or are expected to occur, during the forecast period, but were not specified in the TAF. Is forecast in the TAF, but is no longer expected to occur during the forecast period.
Thunderstorms	Incorrect by forecast start or end time

A7.3.2. Weather warning and/or TAF amendable weather advisory criteria occurs, or is expected to occur but was not specified in the forecast; or, was specified in the forecast, but is no longer occurring or expected to occur during the forecast period.

A7.3.3. Any condition the 17 OWS forecaster considers will hinder safe operations.

Attachment 8

BASE WEATHER EQUIPMENT

Table A8.1. Base Weather Equipment

If the outage affects:	And the situation is:	Then the impact is:	And the mission impact is:
AMIS	Internet connect is down Internet connection is up	Significant Minimal	Reception and Relay of essential weather information is delayed. Weather data is relayed to customers, back-up procedures used.
Mark IVB	No data being received and no other sources available Internet operational	Significant Minimal	Restricts terminal met watch, weather briefing, capabilities. Other sources used for satellite imagery.
FMQ-13 Digital Winds	Active end out All other outages	Significant Minimal	Must use wind sensor from departure end of active runway. None
FMQ-8 Digital Temperature and Dewpoint	TMQ-53 inoperative TMQ-53 operative	Significant Minimal	Estimations of Temperature and Dewpoint must be made. None
ML-658 DBASI Digital Barometer	TMQ-53 inoperative TMQ-53 operative	Minimal Minimal	Determine pressure using backup aneroid barometer None
Aneroid Barometer	ML-658 DBASI inoperative ML-658 DBASI operational	Minimal Minimal	Determine pressure using TMQ-53 Pressure observations are made with ML-658 DBASI.
WSR-88D RDA/RPG	RDA or RPG is down.	Significant	Weather warning support is severely degraded.

If the outage affects:	And the situation is:	Then the impact is:	And the mission impact is:
WSR-88D PUPs	PUPs are down, or products are unavailable or seriously degraded All other outages	Significant Minimal	Weather warning support is severely degraded. Local flight and terminal met watch ability degraded.
GMQ-34 Laser Ceiliometer	Equipment on both ends are inoperative	Significant	Determine cloud heights using TMQ-53
TMQ-53 Tactical Meteorological Observation Station	System inoperative	Minimal	Use TMQ-53 as backup to primary weather sensors
Fax	Any outage	Minimal	Weather briefings to remote locations are delayed and degraded.
Telephone	Outage to Technician, Weather technician or Global Hotlines Any other outage	Significant Minimal	Weather support to airborne aircraft, base, and remote customers delayed and severely degraded. Weather support customers delayed.
PMSV	Any outage	Significant	Unable to support airborne aircraft directly, PMSV responsibility for CWT frequency transferred to tower or via phone patch from AMC CP
Barograph	Tropical cyclone affecting AAFB	Minimal	No pressure trace for tropical cyclone archives.

Attachment 9

TERMS EXPLAINED

A9.1. Basic Weather Watch (BWW): BWW will be conducted from The CWT Station (CWT) Building 17002 or AOS by a weather technician who, because of other duties, cannot monitor the weather continuously and detect and report all weather changes as they occur. BWW observing involves the following minimum requirements:

A9.1.1. Check weather conditions at intervals not to exceed 20 minutes when any of the following conditions are occurring or are forecast to occur within 1 hour:

A9.1.1.1. Ceiling 1,500 feet or less.

A9.1.1.2. Visibility 3 miles (4800 meters) or less.

A9.1.1.3. Precipitation.

A9.1.1.4. Fog or mist.

A9.1.2. Remain alert for any changes in weather conditions, which meet special or local observation criteria. These observations will be taken based on criteria listed in the AFMAN 15-111, PACAF Supplement 1, and [Attachment 1](#) and [Attachment 2](#) of this instruction.

A9.1.3. When a reliable source such as the tower or a pilot reports weather conditions significantly different from the last disseminated observation, recheck the weather and, if required, disseminate a special or local observation.

A9.2. Cooperative Weather Watch (CWW): An arrangement whereby control tower personnel supplement the basic weather watch. Control tower personnel responsibilities under the cooperative weather watch are described in paragraph [3.2](#).

A9.3. Dissemination : The transmission of weather information (observations, forecasts, warnings/watches and advisories) to base agencies and into the worldwide database. Unless otherwise specified, this will be by the Automated Meteorological Information System (AMIS). If the AMIS is not working, weather information will be transmitted locally first.

A9.4. Gust Spread : An instantaneous difference observed between a peak and lull wind speed.

A9.5. Local Flying Area (LFA): The area within a 200 NM radius of AAFB.

A9.6. Meteorological Watch (Met Watch) : The monitoring of weather conditions for a specific terminal, area, or route. If hazardous conditions may effect operations or pose a threat to life or property are occurring or are forecast to occur, the concerned organization will be advised.

A9.7. Pilot Report (PIREP) : A report of in-flight weather conditions provided by an aircrew member.

A9.8. Surface Weather Observation : An evaluation of meteorological elements that describe weather conditions occurring at the weather observing site located behind Building 17002.

A9.8.1. Aviation Routine Weather Report (METAR). A routine, scheduled observation (taken hourly).

A9.8.2. Aviation Selected Special Weather Report (SPECI). An unscheduled observation taken to report significant changes in weather conditions that occur between record observations for the criteria listed in [Attachment 2](#).

A9.8.3. Local Observation (LOCAL). An observation taken to report a change in weather conditions which are significant to local airfield operations but does not meet SPECI observation criteria. As a minimum, Local observations are taken for criteria listed in [Attachment 2](#).

A9.9. Terminal Aerodrome : The area within a five Nautical Mile (NM) radius of the center of the runway complex.

A9.10. Thunderstorm (TS) : A cumulonimbus cloud producing lightning, thunder, and possibly gusty surface winds. A thunderstorm implies the associated flight hazards of hail, severe turbulence and icing, heavy precipitation, lightning, and wind shear.

A9.11. Vicinity (VC): Refers to the area between 5 and 10 NM from the center of the runway complex. EXCEPTION: When reporting rain or rain showers, VC is between 0 and 10 NM (i.e. precipitation must be occurring at the official observing site to be reported as “on-station” weather).

A9.12. Weather Advisory (WA): A special notice of a pre-established weather condition, which may affect an agency's operations, is occurring or forecast to occur. See [Chapter 6](#) for criteria.

A9.13. Weather Warning (WW): A special notice to an agency that a pre-established weather condition of such intensity as to pose a hazard to life and or property, and for which the supported agency must take protective action, is occurring or forecast to occur. See Attachment three for criteria.

A9.14. Weather Watch (WW): A special notice to an agency of the potential for a pre-established weather condition of such intensity as to pose a hazard to life and or property, and for which the supported agency must take protective action, has the potential to occur, based on observed weather conditions or patterns. See [Chapter 5](#) for criteria.

A9.15. Wind Shear Conditions (WSCONDS): Abrupt changes in wind speed and/or direction that could affect the control of aircraft during landing or takeoff. Normally refers to the area between surface and 2,000 feet AGL.

Attachment 10**PILOT REPORTS**

A10.1. Pilot Reports (PIREPs): PIREPs are weather observations from airborne or recently landed aircraft concerning in-flight conditions. They are obtained from flight crews via PMSV or relayed from the CP/ATC/RAPCON. Significant PIREPs will be disseminated both locally and longline. Significant PIREPs are reports issued whenever the criteria listed below the example exist within 100NM of AAFB. They will contain at least the type report, location, time, flight level, type of aircraft and at least one other element.

PGUA PIREP TIME 2213 150120 PGUA FL 230 TP C135 WX FV99 TA M15
WND 26034 TURB NEG ICG NEG;

Content breakdown:

Identifier of sending station: PGUA (Andersen AFB)

Observation Type: PIREP (Pilot Report)

Time: TIME 2213 (2213Z)

Location of aircraft: 150120 RDR (120 nautical miles southeast of AAFB)

Aircraft flight level: FL 230 (23,000 feet)

Type of aircraft: TP C135 (KC-135)

Weather: WX (none)

Flight Visibility: FV99 (flight visibility unrestricted)

Temperature at aircraft altitude: TA M15 (-15°C)

Wind: WND 26034 (winds from 260 degrees true at 34 knots)

Remarks: TURB NEG (negative turbulence), ICG NEG (negative icing)

A10.1.1. Aircraft icing, any intensity.

A10.1.2. Turbulence, moderate or greater.

A10.1.3. Low-level wind shear (less than 2,000 feet) reported on climb or descent. This is indicated by air speed fluctuations of 10 or more knots of air speed.

A10.1.4. Thunderstorms.

A10.1.5. Hail.

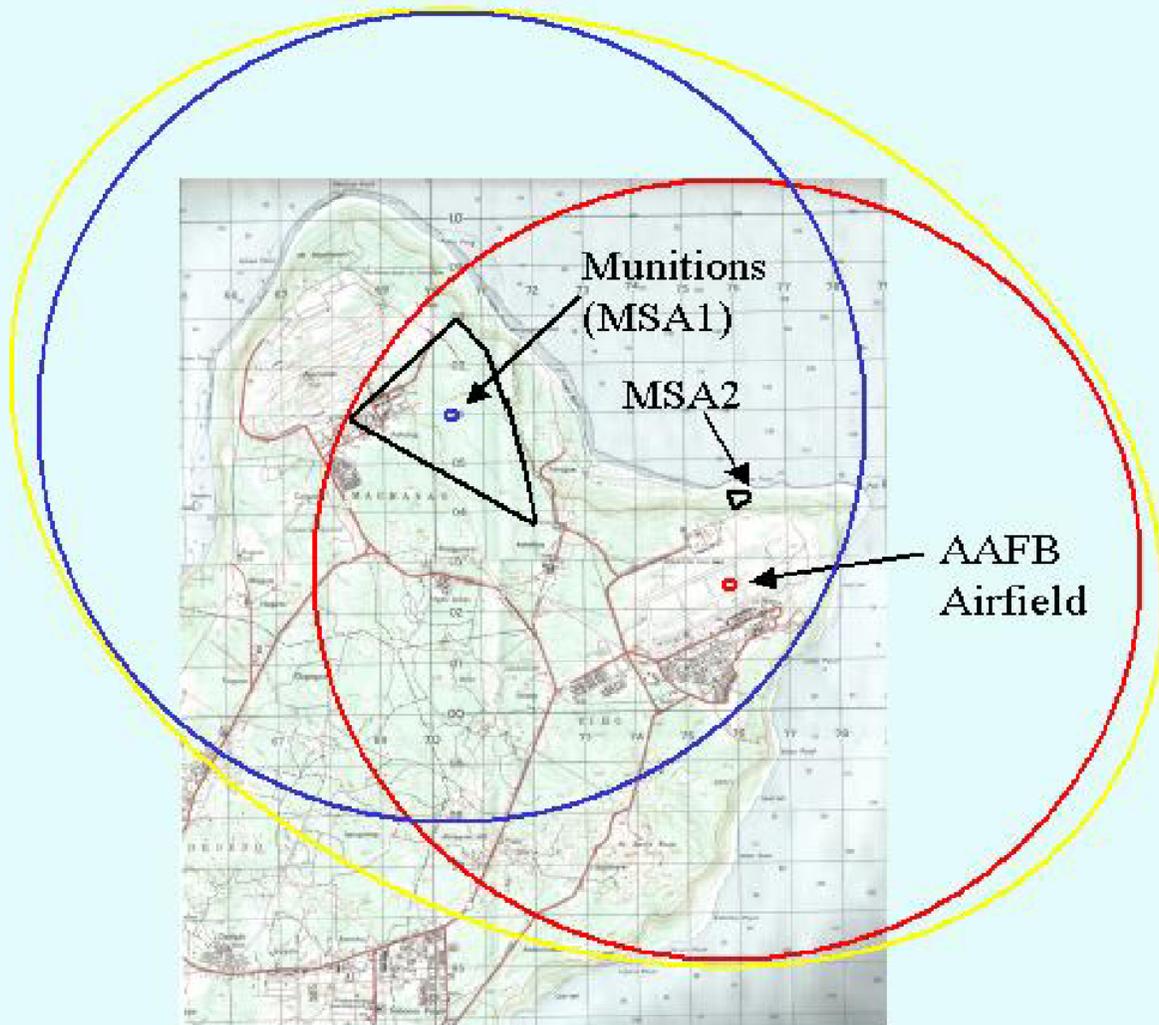
A10.1.6. Tornadoes/funnel clouds.

A10.1.7. Any criteria that, in the judgment of weather personnel receiving the PIREP, presents a danger to aircraft operations.

Attachment 11

A11. LIGHTNING WATCH/WARNING AREAS FOR AAFB

Lightning Watch/Warning Areas for AAFB



- Warning Area for Lightning within 5 nm of AAFB Airfield
- Warning Area for Lightning within 5 nm of Munitions (MSA1)
- Lightning Watch Area for AAFB Complex