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Weather

WEATHER SUPPORT DOCUMENT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Atmospheric and Space Environmental Support*; Air Force Instruction 15-114, *Weather Support Evaluation*; Air Force Manual (AFMAN) 10-206, *Operational Reporting*, AFMAN 15-111, *Surface Weather Observations*, Air Force Instruction 15-128, *Aerospace Weather Operations--Roles and Responsibilities*; AFMAN 15-129, *Aerospace Weather Operations--Processes and Procedures*, AFMAN 15-135, *Combat Weather Team Operations*; AFOSH STD 91-66, *General Industrial Operations*; and AFOSH STD 91-100, *Aircraft Flight Line – Ground Operations and Activities*, and establishes responsibilities and weather support procedures. It provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; dissemination of information; and reciprocal support. It applies to units assigned to the 341st Space Wing and subordinate units, and units assigned to, or supported by, Malmstrom Air Force Base. Maintain and dispose of records created as a result of prescribed processes in accordance with the *Records Disposition Schedule* available in WebRIMS.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This instruction has been revised to incorporate several changes such as equipment upgrades, equipment terminology, building locations, and other minor operational changes.

Chapter 1—GENERAL INFORMATION.	4
1.1. General.	4
1.2. Operational Support Requirements.	4
Chapter 2—WEATHER OBSERVING	6
2.1. Weather Observing (ASOS).	6

2.2.	Meteorological Equipment Locations and Limitations.	6
Chapter 3—COMBAT WEATHER TEAM		8
3.1.	CWT Products.	8
3.2.	Missions Supported.	8
3.3.	Mission Execution Forecast for Ground Operations.	8
3.4.	MEF Briefings.	10
3.5.	Alternate Forecast Support.	11
Chapter 4—WEATHER WARNINGS, WATCHES AND ADVISORIES		12
4.1.	Weather Warnings, Watches and Advisories.	12
4.2.	OWS as Issuing Agency.	12
Table 4.1.	Forecast Weather Watches and Desired Lead-Times for Malmstrom AFB.	13
Table 4.2.	Forecast Weather Warnings and Desired Lead-Times For Malmstrom AFB.	13
Table 4.3.	Observed Weather Warning for Malmstrom AFB.	13
Table 4.4.	Forecast Weather Advisories and Desired Lead Times for Malmstrom AFB.	14
Table 4.5.	Observed Weather Advisories for Malmstrom AFB.	14
Table 4.6.	Forecast Weather Watches and Desired Lead-Times for 341 SW Missile Complex, Issued for Squadron.	14
Table 4.7.	Forecast Weather Warnings and Desired Lead-Times for 341 SW Missile Complex, Issued for Squadron.	15
Table 4.8.	Observed Weather Warnings for 341 SW Missile Complex.	15
Table 4.9.	Forecast Weather Advisories and Desired Lead Times for 341 SW Missile Complex.	15
Table 4.10.	Observed Weather Advisories for 341 SW Missile Complex.	15
Table 4.11.	Justification for non-standard WW/WAs.	16
Table 4.12.	Justification for all other WW/WAs.	18
Table 4.13.	Severe Weather Action Procedures Criteria.	19
Chapter 5—DISSEMINATION OF WEATHER WARNINGS, WATCHES AND ADVISORIES		20
5.1.	Dissemination of Weather Warnings, Watches and Advisories.	20
Table 5.1.	WW, WATCH, and WA Text Examples.	20
5.2.	Dissemination for Customers without N-TFS Software.	21
Figure 5.1.	Weather Notification Diagram.	22

5.3. Backup Product Dissemination Procedures.	22
Chapter 6—SPECIAL WEATHER SUPPORT REQUIREMENTS	23
6.1. Special Weather Support Requirements.	23
6.2. Wing Safety (341 SW/SE).	23
6.3. Job Control (AKIMA/SCAIJ).	24
6.4. Disaster Preparedness Flight (341 CES/CEX).	24
6.5. Troop Support and Training Flight (341 OSS/OSOE).	24
6.6. Helicopter Operations (40 HF).	24
Chapter 7—RECIPROCAL SUPPORT	25
7.1. Reciprocal Support.	25
7.2. Public Affairs Office (341 SW/PA).	25
7.3. METNAV (341 CS/SCMMM), Job Control (AKIMA/SCAIJ) and Base Radio (AKIMA/SCACR).	25
7.4. Disaster Preparedness (341 CES/CEX).	26
7.5. Power Production (341 CES/CEOIG).	26
7.6. Troop Support and Training Flight (341 OSS/OSOE).	26
7.7. Helicopter Operations (40 HF).	26
7.8. Maintenance Plans Section (341 MOS/MXOOS).	26
7.9. Transportation Control Center (341 LRS).	26
Attachment 1—GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	27
Attachment 2—25 OWS AND 341 OSS/OSW (CWT) LIST OF DUTY PRIORITIES	30
Attachment 3—COMMUNICATION AND EQUIPMENT RESTORAL PRIORITIES	31

Chapter 1

GENERAL INFORMATION.

1.1. General. The Combat Weather Team (CWT), 341st Operations Support Squadron, Weather Flight (341 OSS/OSW), provides weather support to the 341st Space Wing (341 SW) and its units assigned to MAFB. This instruction establishes weather support requirements and procedures outlined by Air Force and Air Force Space Command directives and has been coordinated at the local level to meet mission needs. The CWT will conduct an annual review of this instruction and coordinate changes with the affected customers.

1.1.1. Concept of Operations.

1.1.1.1. WEATHER UNITS.

1.1.1.1.1. The 25th Operational Weather Squadron (OWS) will produce and disseminate all forecasts and most Weather Warnings (WW), Weather Watches (WATCH), and Weather Advisories (WA) for MAFB and the missile complex. The OWS will also conduct Meteorological Watch (METWATCH) for the protection of MAFB assets.

1.1.1.2. The CWT will tailor OWS forecasts, when possible, to the specific needs of 341 SW agencies and will provide faxed, electronic, and/or in-person briefings. The CWT will refer requests for information for both on- and off-base events to public affairs to determine whether the request is legal and/or appropriate. The CWT will conduct general METWATCH and Mission Watch (MISSIONWATCH) for 341 SW operations and will serve as the “eyes forward” for the OWS.

1.1.2. DUTY PRIORITIES: The CWT is responsible for supporting all customers located on MAFB and for superseding any OWS weather warnings that the lead forecaster deems necessary. The CWT list of duty priorities is located in [Attachment 2, Table A2.1](#). The OWS is responsible for WWs, WATCHes, and WAs. The OWS list of duty priorities is located in [Attachment 2, Table A2.2](#). The duty forecaster will use good judgment in complying with these priorities, especially where there is imminent danger to life and property.

1.1.3. HOURS OF OPERATION: The CWT will open for operations at 0400L, Monday through Friday (excluding holidays). The CWT will close after all 40 HF flights and major maintenance teams return to base for the day. If no flights or major maintenance teams are out after 1630L, the CWT will close. The CWT will open at 0600L on weekends and holidays to provide Pre-Departure briefings and will close at 1000L. If flying is scheduled during the weekend, the CWT will remain open until flying operations are finished. The OWS will have a forecaster on-duty at all times. A CWT forecaster will be on “stand-by” during non-duty hours, 24 hours a day, 7 days a week, and will respond to any non-scheduled weather support requests, such as search and rescue operations and battle staff formation.

1.2. Operational Support Requirements. Supported agencies will:

1.2.1. Establish and coordinate all weather support requirements and procedures with the CWT.

1.2.1.1. Notify the CWT of any changes in weather support requirements.

1.2.2. Unit commanders will:

- 1.2.2.1. Ensure they are knowledgeable of critical weather elements affecting their operations.
- 1.2.2.2. Ensure procedures are established within their organization to adequately respond to disseminated weather information. It is important for unit personnel to understand basic meteorological terms, such as the differences between a “watch” and “warning”. These definitions can be found in [Attachment 1](#).
- 1.2.2.3. Review this instruction at least annually for any changes in support requirements and have their supported agency coordinate these changes with the CWT.

Chapter 2

WEATHER OBSERVING

2.1. Weather Observing (ASOS). The official weather observation for MAFB is taken from the Automated Surface Observation System (ASOS) located 250 yards southwest of the base fire station. However, both the CWT and ASOS have several limitations customers must be aware of.

2.1.1. CWT Limitations. The CWT does not have fully certified weather observers, does not take manual observations, and does not manually augment the ASOS. When the ASOS is inoperable, the CWT will use the readings from the National Weather Service ASOS, located at the Great Falls Airport, and will append the word “estimated” to all readings.

2.2. Meteorological Equipment Locations and Limitations. Readouts for all meteorological sensors are located at Bldg. 1441.

2.2.1. Five Remote Automated Weather Systems (RAWS) are located at the Missile Alert Facilities (MAF) in Bravo, Golf, Oscar, Kilo, and Sierra flights. RAWS provides the only official observations for the 341 SW missile complex (with the exception of ASOS system in Lewistown, MT). It can accurately measure wind speed and direction, temperature, dew point, barometric pressure, cloud heights, and liquid precipitation amounts. However, they cannot accurately measure sector visibility, sky conditions throughout the horizon circle, freezing precipitation, lightning or hail.

2.2.2. A series of Weather Wizard III weather kits are located in the Flight Security Center’s (FSC) office at each of the 20 MAFs. These kits are for general weather information only and not considered official observations. The Weather Wizard III kits are not maintained periodically and no established maintenance is provided.

2.2.3. The ASOS system continually senses and displays current weather conditions. The ASOS at Malmstrom AFB is a stand-alone system (not manually augmented). It can accurately measure wind speed and direction, temperature, dew point, altimeter, barometric pressure, cloud heights, current weather conditions (e.g., rain, snow, etc), and liquid precipitation amounts at a single point. However, it cannot accurately measure tornadoes, lightning, sector visibility, sky conditions throughout the horizon circle, hail, freezing drizzle, blowing dust, or smoke. There is no operational backup to this system. In the case of an outage, weather flight personnel will use the readings from the National Weather Service ASOS, located at the Great Falls airport, and append the word “estimated” to all readings.

2.2.3.1. Temperature and dew point are measured in Fahrenheit and Celsius. Backup to this sensor will be the readings from the National Weather Service ASOS located at the Great Falls airport.

2.2.3.2. Wind Speed and Direction. Wind speed is measured in knots. Backup to this sensor will be the readings from the National Weather Service ASOS located at the Great Falls airport.

2.2.3.3. Barometric pressure and altimeter setting are measured in millibars and inches respectively. Backup to this sensor will be the readings from the National Weather Service ASOS located at the Great Falls airport.

2.2.3.4. Visibility is measured in increments of 1/16th of a statute mile (SM), up to 10 SM. As a backup, forecasters can approximate visibility using local predetermined visibility markers and/or use the readings from the National Weather Service ASOS located at the Great Falls airport.

2.2.3.5. Cloud bases are detected up to 12,000 feet above ground level (AGL). As a backup, forecasters can only roughly approximate cloud bases using known elevations of nearby mountains and/or use the readings from the National Weather Service ASOS located at the Great Falls airport.

2.2.3.6. Liquid precipitation is measured in increments of 1/100th of an inch

2.2.3.7. Current weather includes rain, rain showers, snow, fog, etc.

2.2.4. The NEXRAD Doppler radar is located one mile south of Great Falls IAP. An Open Principal User Processor (O-PUP) Workstation is located in the CWT work center. Limitations include:

2.2.4.1. Range of 150 Nautical Miles (NM) for most radar products and an effective range of about 60 NM for detection of tornadic activity.

2.2.4.2. Mountain ranges from SE-SW-NW block radar returns, resulting in reduced ability to detect precipitation within those areas.

2.2.4.3. There is not an operationally suitable backup for the NEXRAD Doppler radar. The JAAWIN website (<https://afwin.afwa.af.mil/>) offers features similar to that of the O-PUP, but data may be up to 20-40 minutes old. It offers only limited capability to manipulate or analyze the data; therefore it is not sufficient for determining the severity of thunderstorms or identifying hail and tornadoes.

2.2.5. The National Lightning Detection System (NLDN) has no sensors on Malmstrom AFB, but can display lightning strikes anywhere in the CONUS. Limitations include:

2.2.5.1. Only cloud-to-ground lightning strikes are detected by the NLDN.

2.2.5.2. There is no operational backup for the NLDN. JAAWIN offers features similar to that of the NLDN, but data may be up to 20-40 minutes old.

2.2.6. The CWT operates a Pilot-to-Metro Service (PMSV) radio on the frequency of 239.8 MHz (UHF). It is the primary means of disseminating weather information to airborne aircraft. There is no alternate PMSV service available.

2.2.7. The New-Tactical Forecast System (N-TFS) is used to retrieve and disseminate weather information to and from the OWS or CWT work center. Any computer on the MAFB Local Area Network (LAN) that has the N-TFS software package installed can retrieve information disseminated via N-TFS.

Chapter 3

COMBAT WEATHER TEAM

3.1. CWT Products. The OWS routinely issues forecast products for Malmstrom AFB. The products are available on the OWS website for Malmstrom AFB.

3.1.1. Limitations. The OWS and/or CWT will provide forecast support as required by this instruction and/or memorandums of agreement. Forecasting for elements or locations not contained in pertinent directives is neither implied nor should it be inferred.

3.2. Missions Supported. The OWS and CWT provide support to a wide variety of mission. The weather impacts of these missions are listed in [Table 4.11](#) and [Table 4.12](#). The forecast products listed in [Chapter 3](#) and [Chapter 4](#) specifically support personnel and equipment for the following missions:

3.2.1. 341st Operations Group. The 341st Operations Group deploys missile operators, facility managers, chefs, and other OG personnel responsible for the safe operations of 200 ICBMs.

3.2.2. 341st Maintenance Group. The 341st Maintenance Group deploys maintenance teams with cranes, transporter erectors (TE), and Payload Transporter (PT) vans to maintain 200 ICBMs.

3.2.3. 341st Security Forces Group. The 341st Security Forces Group provides law enforcement support for a base population of over 10,000, security for Protection Level 1 resources in the Weapons Storage Area, military working dogs and investigations support. The 341st Security Forces Group also maintains security forces on 24-hour alert providing security for 200 war-postured ICBM's, as well as force protection for ICBM nuclear weapons during on- and off-base movements and during support of ICBM maintenance.

3.2.4. 341st Services Squadron. The 341st Services squadron operates the Malmstrom Outdoor Recreations Pool and Youth Activities Center, both of which require notification of lightning in the area.

3.2.5. 40th Helicopter Flight. The 40th Helicopter flight operates UH-1N Huey helicopters in support of 341st Wing requirements, Search-and-Rescue requests, and flight training requirements.

3.2.6. 341st Logistics Readiness Squadron. The 341st Logistics Readiness Squadron provides road condition reports and updates through the Transportation Control Center (TCC).

3.3. Mission Execution Forecast for Ground Operations. Mission Execution Forecasts (MEFs) are based on OWS forecasts that are tailored for 341 SW specific missions (missile crew pre-departure, convoy movements, daily major maintenance, etc.). The CWT will provide appropriate MEFs to its 341 SW customers as described below:

NOTE: The format and content of the products in section [3.3.1](#) meet the minimum requirement of each customer. Requests from all CWT customers are combined into several PowerPoint slides that may contain more information than a customer needs; however, another customer using the same product may need the information. Minor changes to format and content of these products may be made through electronic or verbal coordination and do not require re-coordination of this instruction.

3.3.1. MEF Format. The CWT produces a 24-hour forecast slide and a 5-day outlook slide for planning purposes. The CWT produces a missile complex forecast slide, a route forecast slide (for specific

areas within the missile complex), and a weather hazards slide for specific mission forecasts. The specific data contained on each slide is as follows:

3.3.1.1. The OWS issues a 24-hour, non-amendable aviation forecast for Malmstrom AFB at 0500L, 1300L, and 2100L* (*if needed). Forecasts are valid for the area within 5 statute miles of the 40 HF helipad located near Bldg. 1441. The CWT tailors the forecast into a plain language forecast to be used by its local customers. Contents of the "Malmstrom Forecast" slide will be in the following order:

3.3.1.1.1. "TIME" - Valid times (Local) for forecast conditions.

3.3.1.1.2. "CLOUDS" - Forecasted sky conditions (Clear, Mostly Sunny, Partly Cloudy, Mostly Cloudy, and Overcast). Mostly Cloudy and Overcast conditions indicate that a ceiling is present.

3.3.1.1.3. "VIS/WX" - Visibility (SM) with weather and obstructions to vision (if any). Obstructions to vision are labeled Rain, Snow, Fog, Freezing Rain, Dust, VCSN (snow in the vicinity), VCRA (rain in the vicinity) or VCTS (thunderstorms in the vicinity).

3.3.1.1.4. "WINDS" - Wind conditions in direction wind is blowing from, measured in knots.

3.3.1.1.5. "ADVISORIES/WATCHES/WARNINGS" - Current weather warnings, watches, and advisories for MAFB and the 341 SW missile complex.

3.3.1.1.6. "MAX", "MIN", and "WIND CHILL" - Maximum and minimum temperature, and coldest wind chill factor expected over the next 24-hours.

3.3.1.1.7. "MOONRISE", "MOONSET", "SUNRISE", and "SUNSET" (Local times) and "ILLUMINATION" (percentage of moon's surface illuminated).

3.3.1.1.8. Temporary groups will be used on this slide to specify intermittent conditions (occurring for 29 minutes or less) and will appear as TEMPO. Temporary groups only specify those conditions expected to be different from the predominate conditions.

3.3.1.2. Contents of the "Extended MAFB Forecast" slide will be in the following order:

3.3.1.2.1. "WX" - Displays icon of predicted weather for the following five days.

3.3.1.2.2. "WIND" - Maximum sustained wind and maximum gust in knots (15-25 indicates 15 knot sustained winds with 25 knot gusts).

3.3.1.2.3. "LOW" - Lowest temperature expected that day.

3.3.1.2.4. "HIGH" - Highest temperature expected that day.

3.3.1.3. Contents of the "Missile Complex Forecast" slide will be in the following order:

3.3.1.3.1. "Max Wind" - Maximum sustained wind and maximum gust in knots (15-25 indicated 15 knot sustained winds with 25 knot gusts) over the next 36-hours.

3.3.1.3.2. "Max Temp" - Highest temperature expected that afternoon.

3.3.1.3.3. "Min Temp" - Lowest temperature expected overnight.

3.3.1.3.4. "Hazards" - Any weather-related hazards expected over the next 36-hours (includes turbulence for helicopter transported crews, fresh snowfall, blowing dust, fog, etc.).

- 3.3.1.3.5. “Warnings/Watches/Advisories” - Active warnings, watches, and advisories.
- 3.3.1.3.6. “Sunrise” and “Sunset” - Sunrise and sunset of the current day.
- 3.3.1.4. Contents of the “Wind Chill” slide will be in the following order:
 - 3.3.1.4.1. “Day / Night” - Colors represent the coldest wind chills expected over next 36-hours (broken down into daytime and nighttime hours) IAW 20 AF road condition criteria.
 - 3.3.1.4.2. “Wind Chill” – Wind Chill temperatures expected over next 36-hours.
- 3.3.1.5. Contents of the “Route Forecast” slide will be in the following order:
 - 3.3.1.5.1. “Current Conditions” - Current sky condition, visibility, and obstructions to visibility as defined in paragraphs 3.4.1.3.1. and 3.4.1.3.2.
 - 3.3.1.5.2. “Forecast Conditions” - Forecast (over next 18-hours) sky condition, visibility, and obstructions to visibility as defined in paragraphs 3.4.1.3.1. and 3.4.1.3.2.
 - 3.3.1.5.3. “Forecast Winds” - Forecast wind speeds (measured in knots).
 - 3.3.1.5.4. “Worst Sky Condition” - Worst (lowest) ceilings (AGL) expected throughout the mission.
 - 3.3.1.5.5. “Visibility” - Worst visibility expected during next 18-hours.
 - 3.3.1.5.6. “Precipitation Accumulation” - Forecasted amount of snow accumulation over next 18-hours.
 - 3.3.1.5.7. 0500 Local MAFB conditions (temperature, winds, and barometric pressure).
 - 3.3.1.5.8. Forecasted maximum and minimum temperature (Fahrenheit) expected along the route.
 - 3.3.1.5.9. Sunrise and sunset (Local).

3.4. MEF Briefings. The CWT’s duty forecaster and MEF briefer will work together to prepare quality weather briefings for planning purposes and each day’s individual missions. As of 1 Jan 04, the following briefings are provided:

- 3.4.1. Pre-Departure Briefing (5 slides). The CWT will provide a MEF for all missile crew departures. The briefing will include:
 - 3.4.1.1. Current satellite.
 - 3.4.1.2. Current weather radar and surface observations from B-01, G-01, O-01, K-01, and S-00 (RAWS) and MAFB (ASOS).
 - 3.4.1.3. Missile Complex Forecast slide (3.3.1.3.).
 - 3.4.1.4. Wind Chill slide (3.3.1.4.) during winter months.
 - 3.4.1.5. Extended MAFB Forecast slide (3.3.1.2.).
- 3.4.2. CRF Briefings (Teleconference and PowerPoint (2-3 slides)). The CWT will provide two briefings for all convoy movements.
 - 3.4.2.1. The CWT’s duty forecaster will be included in the teleconference briefing prior to all convoy movements. The duty forecaster will tailor the MEF to the specific route and save the briefing

on the S: drive at the following location: *S:\Weather\CRF Briefing*. The briefing will be completed and available no later than 1 hour prior to the time shown on the convoy-tracking sheet (under “USM Show Time”). The PowerPoint briefing to security force teams will include:

3.4.2.2. Current satellite.

3.4.2.3. Route Forecast slide (3.3.1.5.)

3.4.2.4. Wind Chill slide (3.3.1.4.) in winter months only.

3.4.2.5. Amendments. Any significant changes in observed or forecast conditions expected to affect the convoy movement will be passed on to the command post. This includes, but is not limited to, issuance of a weather warning, watch, or weather advisory.

3.4.3. Major Missile Maintenance Briefings. The CWT will provide the 341 MOS/MXOOJ, Missile Maintenance Operations Center a link to the missile crew “Pre-Departure Briefing” which will include any potential hazards expected within the missile complex.

3.4.4. 40 HF Mission Execution Forecast.

3.4.4.1. Flight weather packages will be provided to aircrews using the 40 HF flimsy, IAW AFMAN 15-129.

3.4.4.2. The MEF will be prepared and delivered to the Operations Duty Officer (ODO), when required.

3.4.4.3. Other weather briefings will be prepared using DD Form 175-1, Flight Weather Briefing.

3.4.4.4. Aircrews will receive verbal briefings upon their request. Verbal weather briefings will be recorded on the daily flying schedule spreadsheet maintained by the duty forecaster.

3.4.4.5. In the event that immediate weather support is needed and the CWT forecaster is not available, aircrews can obtain additional weather information from the 25 OWS website located at:

https://25ows.dm.af.mil/funnel/local/index.cfm?fuseaction=showunit&B_ICAO=KGFA&UNIT_ID=25&bandwidth=H&aor=2. Additionally, the 25 OWS forecaster, responsible for Malmstrom AFB, can be reached at DSN 228-7644.

3.4.5. Pre-Deployment Briefing. The CWT will provide a briefing to the 341 SW/CC during the weekday pre-deployment briefing, located in the Command Post. This briefing will consist of a 24-hour base forecast, weather conditions for each of the 20 Missile Alert Facilities as well as the Pre-Departure Briefing slides located in paragraph 3.4.1.

3.5. Alternate Forecast Support. If the evacuation of Building 1441 is necessary, the CWT will relocate to the alternate operations site at the Command Post. CWT support from this location may be limited due to lack of updated data. Once in place, the forecaster will establish telephone contact with the command post controllers, OWS, and all other wing customers IAW local guidance. The CWT will continue to provide support from the alternate location until given permission to return to bldg 1441.

Chapter 4

WEATHER WARNINGS, WATCHES AND ADVISORIES

4.1. Weather Warnings, Watches and Advisories. Certain weather conditions endanger property or life, pose a safety hazard, or adversely affect a supported agency's operations. The OWS-CWT team will METWATCH for these conditions and use Weather Warnings (WW), Weather Watches (WATCH) and Weather Advisories (WA) to advise supported agencies when these conditions are observed or forecast.

NOTE: Only one WW, which may contain more than one WW's criterion, will be in effect at any given time for any one location (i.e., MAFB or the missile complex).

4.1.1. Limitations. Weather observations received from 341 SW field personnel are considered unofficial and should be used as general information only

4.2. OWS as Issuing Agency. The OWS is the issuing agency for most WWs, WATCHes, and WAs for MAFB and the 341 SW missile complex. The CWT acts as "eyes forward" for the OWS by providing them real-time interpretation of local weather data. When the weather station is closed and upon notification of a severe WW, WATCH, or WA (listed in [Table 4.13.](#)), the command post will call the CWT's standby forecaster. The standby forecaster will report to the weather station and assess the weather situation. [Table 4.1.](#) through [Table 4.10.](#) provide a listing of each WW, WATCH, and WA:

4.2.1. WWs - The OWS will issue all forecast WWs for MAFB and most forecast WWs for the 341 SW missile complex. The OWS will issue observed lightning warnings for the base after the CWT's normal duty hours. The CWT will issue observed lightning warnings for lightning within five statute miles of base (during normal duty hours) and major maintenance teams. The CWT will issue forecasted WWs for wind gusts exceeding 35 knots in the vicinity of major maintenance teams. The CWT will issue the above-mentioned complex WWs for 341 MOS specific operations only on days where major maintenance or convoy movements are scheduled. Forecasted WWs for Malmstrom are listed in [Table 4.2.](#) Forecasted WWs for the complex are listed in [Table 4.7.](#) Observed WWs for Malmstrom are listed in [Table 4.3.](#) Observed WWs for the complex are listed in [Table 4.8.](#)

4.2.2. WATCHes - The OWS will issue all WATCHes for MAFB and most WATCHes for the 341 SW missile complex. The CWT will issue WATCHes for winds exceeding 35 knots, which affect transporter erector operations. The CWT will issue the above-mentioned WATCHes for 341 MOS specific operations only on days where major maintenance or convoy movements are scheduled. Forecasted WATCHes for Malmstrom are listed in [Table 4.1.](#) Forecasted WATCHes for the complex are listed in [Table 4.6.](#)

4.2.3. WAs – Weather Advisories are broken down into forecast WAs (FWA) and observed WAs (OWA):

4.2.3.1. FWAs require a lead-time (snow events and icing or turbulence for 40 HF operations). FWAs for Malmstrom are listed in [Table 4.4.](#) FWAs for the complex are listed in [Table 4.9.](#)

4.2.3.2. OWAs do not require a lead-time and are issued when a certain weather condition occurs.

4.2.3.3. OWAs for Malmstrom are listed in [Table 4.5.](#) OWAs for the complex are listed in [Table 4.10.](#)

4.2.3.4. Justification for WWs/WATCHes/FWAs/OWAs is listed in [Table 4.11.](#) and [Table 4.12.](#)

Table 4.1. Forecast Weather Watches and Desired Lead-Times for Malmstrom AFB.

#	Criteria	DLT (Minutes)
1	Tornado	As Potential Warrants
2	Hail $\geq \frac{3}{4}$ inch	120
3	Lightning within 5 NM	30
4	Level III Winds (sustained winds ≥ 45 knots and/or gusts ≥ 52 knots)	120
5	Blizzard Conditions (Lasting ≥ 3 hours, winds (sustain/gust) ≥ 30 knots, visibility $\leq \frac{1}{4}$ SM with snow/blowing snow)	As Potential Warrants
6	Heavy Snow (fresh snowfall ≥ 6 inches in 12 hours)	As Potential Warrants
7	Heavy Rain (≥ 2 inches in 12 hours)	As Potential Warrants
8	Freezing Precipitation	As Potential Warrants

Table 4.2. Forecast Weather Warnings and Desired Lead-Times For Malmstrom AFB.

#	Criteria	DLT (Minutes)
1	Tornado	10
2	Hail $\geq \frac{3}{4}$ inch hail	60
3	Level II Winds (sustained winds ≥ 35 knots and/or gust ≥ 45 knots)	60
4	Level III Winds (sustained winds ≥ 45 knots and/or gust ≥ 52 knots)	60
5	Blizzard Conditions (Lasting ≥ 3 hours, winds (sustain/gust) ≥ 30 knots, visibility $\leq \frac{1}{4}$ SM with snow/blowing snow)	90
6	Heavy Snow (fresh snowfall ≥ 6 inches in 12 hours)	90
7	Heavy Rain (≥ 2 inches in 12 hours)	90
8	Freezing Precipitation	60

Table 4.3. Observed Weather Warning for Malmstrom AFB.

#	Criteria
1	Lightning within 5 NM (issued by the CWT during normal duty hours. Issued by the OWS when the CWT is closed)

Table 4.4. Forecast Weather Advisories and Desired Lead Times for Malmstrom AFB.

#	Criteria	DLT (Minutes)
1	Snow advisory (fresh snowfall $\geq \frac{1}{2}$ inches but < 6 inches)	90

Table 4.5. Observed Weather Advisories for Malmstrom AFB.

#	Criteria
1	Level I wind chill temperature $< 0^0$ F
2	Level II wind chill temperature $< -40^0$ F
3	Level III wind chill temperature $< -65^0$ F

Table 4.6. Forecast Weather Watches and Desired Lead-Times for 341 SW Missile Complex, Issued for Squadron.

#	Criteria	DLT (Minutes)
1	Tornado	As Potential Warrants
2	Hail $\geq \frac{3}{4}$ inch	120
3	Lightning within 5 NM (of a missile squadron)	30
4	Level I Winds (gusts ≥ 35 knots) – Issued by the CWT	60
5	Level III Winds (sustained winds ≥ 45 knots and/or gusts ≥ 52 knots)	120
6	Blizzard Conditions (Lasting ≥ 3 hrs, winds (sustain/gust) ≥ 30 knots, visibility $\leq \frac{1}{4}$ SM with snow/blowing snow)	As Potential Warrants
7	Heavy Snow (fresh snowfall ≥ 6 inches in 12 hours)	As Potential Warrants
8	Heavy Rain (≥ 2 inches in 12 hours)	As Potential Warrants
9	Freezing Precipitation	As Potential Warrants

Table 4.7. Forecast Weather Warnings and Desired Lead-Times for 341 SW Missile Complex, Issued for Squadron.

#	Criteria	DLT (Minutes)
1	Tornado	10
2	Hail $\geq \frac{3}{4}$ inch hail	60
3	Level I Winds (gust ≥ 35 knots)—issued by CWT during TE operations	60
4	Level II Winds (sustained winds ≥ 35 and/or gust ≥ 45 knots)	60
5	Level III Winds (sustained winds ≥ 45 and/or gust ≥ 52 knots)	60
6	Blizzard Conditions (lasting ≥ 3 hours, winds (sustain/gust) ≥ 30 knots, visibility $\leq \frac{1}{4}$ SM with snow/blowing snow)	90
7	Heavy Snow (fresh snowfall ≥ 6 inches in 12 hours)	90
8	Heavy Rain (≥ 2 inches in 12 hours)	90
9	Freezing Precipitation	60

Table 4.8. Observed Weather Warnings for 341 SW Missile Complex.

#	Criteria
1	Lightning within 5 NM (Issued by CWT--only during major maintenance/convoy operations. Will be issued if within 5 NM of the specific MAF/LF)

Table 4.9. Forecast Weather Advisories and Desired Lead Times for 341 SW Missile Complex.

#	Criteria	DLT (minutes)
1	Snow advisory (fresh snowfall $\geq \frac{1}{2}$ inches but < 6 inches)	90

Table 4.10. Observed Weather Advisories for 341 SW Missile Complex.

#	Criteria
1	Level II wind chill temperature $< -40^{\circ}$ F
2	Level III wind chill temperature $< -65^{\circ}$ F

Table 4.11. Justification for non-standard WW/WAs.

#	Criteria	Effect	Who Makes Decision/When	Notification Via
1	Wind (gusts) \geq 45 knots	Helicopters cannot start up or shut down engines	Operations Duty Officer (If on base)/Upon Notification	N-TFS
			Aircraft Commander (if off base)/ Upon Notification	
2	Wind (sustained) \geq 45 knots	Road Conditions Red	Transportation Control Center (TCC)/ Upon Notification	N-TFS
3	Wind (gusts) \geq 52 knots	All other convoy/ maintenance vehicles cannot be operated or driven	Flight Security Controller (FSC)/ Upon Notification	N-TFS
4	Wind (sustained) \geq 35 knots	Road Conditions Yellow	Transportation Control Center (TCC)/Upon Notification	N-TFS
5	Wind (gusts) \geq 35 knots	TE cannot be erected	Missile Maintenance Operations Center (MMOC)/ Upon Notification	N-TFS
6	Snow \geq 1/2 inch < 6 inches	Road Conditions Yellow:	Transportation Control Center (TCC)/ Upon Notification	N-TFS
7	Level I Wind Chill (< -20°C)	Outdoor activities restricted/cold weather gear essential	Transportation Control Center (TCC)/Upon Notification	N-TFS
			Missile Maintenance Operations Center (MMOC)/ Upon Notification	
			Law Enforcement Desk/ Upon Notification	
8	Level II Wind Chill (< -40°C)	Road Conditions Yellow	Transportation Control Center (TCC)/ Upon Notification	N-TFS
9	Level III Wind Chill (< -65°C)	Road Conditions Red	Transportation Control Center (TCC)/ Upon Notification	N-TFS

#	Criteria	Effect	Who Makes Decision/When	Notification Via
10	Lightning	Outdoor fueling activities cease/ WSA and munitions activities cease	Missile Maintenance Operations Center (MMOC)/ Upon Notification	N-TFS
		Helicopters grounded	Aircraft Commander or Supervisor of Flying/ Upon Notification	N-TFS

Table 4.12. Justification for all other WW/WAs.

#	Criteria	Effect	Who Makes Decision/When	Notification Via
1	Tornado	Requires SWAP procedures/ All operations should cease/personnel should take cover	CWT NCOIC/OIC Each individual/upon notification Upon Notification	N-TFS
2	Hail \geq 3/4" inch	Requires SWAP procedures/ All operations should cease/personnel should take cover	CWT NCOIC/OIC Each individual Upon notification	N-TFS
3	Heavy Snow (fresh snowfall \geq 6 inches in 12 hours)	Requires SWAP procedures/Likely Yellow/Red road conditions	CWT NCOIC/OIC Transportation Control Center (TCC) Upon Notification	N-TFS
4	Blizzard (lasting \geq 3 hours, winds (sustain/gust) \geq 30 knots, visibility \leq 1/4 SM with snow/blowing snow)	Requires SWAP procedures/Likely Yellow/Red road conditions	CWT NCOIC/OIC Transportation Control Center (TCC) Upon Notification	N-TFS
5	Freezing Precipitation	Requires SWAP procedures/Likely Yellow/Red road conditions Helicopters cannot operate	CWT NCOIC/OIC Transportation Control Center (TCC) Operations Duty Officer (If on base) Aircraft Commander (if off base) Upon Notification	N-TFS
6	Heavy Rain (\geq 2 inches in 12 hours)	Likely Yellow/Red road conditions* Standing water on roads	Transportation Control Center (TCC) Upon Notification	N-TFS

4.2.4. Severe Weather Action Procedures. The following procedures outline the responsibilities of the 25 OWS and CWT when there is a severe weather threat at Malmstrom AFB. A severe weather threat exists when a watch or a warning is issued for the criteria listed in [Table 4.13](#).

4.2.4.1. The CWT will open for all severe WVs and WATCHes. During non-duty hours, the command post will receive severe WVs and WATCHes from the 25 OWS and notify the standby forecaster. The standby forecaster will report to the weather station, contact the OWS, activate Severe Weather Action Procedures, and remain open until the event ends.

4.2.4.1.1. The CWT will closely work with on-base and deployed personnel to ensure weather information is disseminated and safety is stressed.

4.2.4.1.2. The CWT will assist the OWS in the METWATCH process; they will act as “eyes forward” for the OWS by providing them with information necessary to issue, justify, and verify any issued WV/WATCH/WA.

4.2.4.1.3. Unit commanders will maintain and implement pre-SWAP and post-SWAP actions for their respective subordinate units.

Table 4.13. Severe Weather Action Procedures Criteria.

Tornado
Hail \geq 3/4 inch
Level III Winds
Freezing Precipitation
Blizzard
Heavy Snow

Chapter 5

DISSEMINATION OF WEATHER WARNINGS, WATCHES AND ADVISORIES

5.1. Dissemination of Weather Warnings, Watches and Advisories. The CWT will assist supported agencies in maintaining an efficient, effective means of disseminating weather support information. Procedures must ensure weather personnel do not spend more time communicating than monitoring weather conditions. All units receiving weather support must be involved in a continuous program of evaluation and improvement of the weather dissemination system, including inter-unit dissemination. Weather dissemination procedures must ensure those who need the information receive it.

5.1.1. New Tactical Forecast System (N-TFS) Software.

5.1.1.1. The primary means of disseminating weather information is via LAN-enabled PCs with the N-TFS software package installed. In the event that the base LAN is inoperable, phone dissemination procedures will be used per paragraph 7.2.3. N-TFS will be installed at the work centers indicated with an asterisk in **Figure 5.1**.

5.1.2. The N-TFS is used to disseminate the following information to work center PCs with the N-TFS software package:

5.1.2.1. MAFB and 341 SW missile complex weather warnings, watches, and advisories. A text example is shown in **Table 5.1**. The format will be similar for all other warnings, watches and advisories.

5.1.2.2. Pilot reports (PIREPs).

5.1.3. The following applies to all N-TFS transmissions:

5.1.3.1. All wind directions are in degrees magnetic.

5.1.3.2. PIREP cloud heights are MSL.

5.1.3.3. Wind speeds are measured in knots.

5.1.3.4. All times are in UTC unless the time is appended with an “L” in which case it is local time.

Table 5.1. WW, WATCH, and WA Text Examples.

LEVEL II HIGH WIND WARNING FOR: 341 SW COMPLEX and MAFB SUSTAINED WINDS OF 35-44 KNOTS AND/OR WIND GUSTS OF 45-51 KNOTS ARE FORECASTED FOR THE 341 SW COMPLEX AND MALMSTROM AFB.
LIGHTNING WATCH FOR 12 MS AND 564 MS CONDITIONS ARE FAVORABLE FOR THE DEVELOPMENT OF LIGHTNING.

LEVEL 1 WIND CHILL ADVISORY
FOR MAFB
WIND CHILL TEMPERATURES LESS THAN 00F BUT GREATER THAN OR EQUAL TO
-40F ARE OCCURRING AT MALMSTROM AFB.

5.1.4. Units with N-TFS installed on their work center PC must monitor their system for operational status. Each agency experiencing an N-TFS outage will report it to the CWT so back up telephone procedures may be initiated (if required) and N-TFS account maintenance actions may be taken.

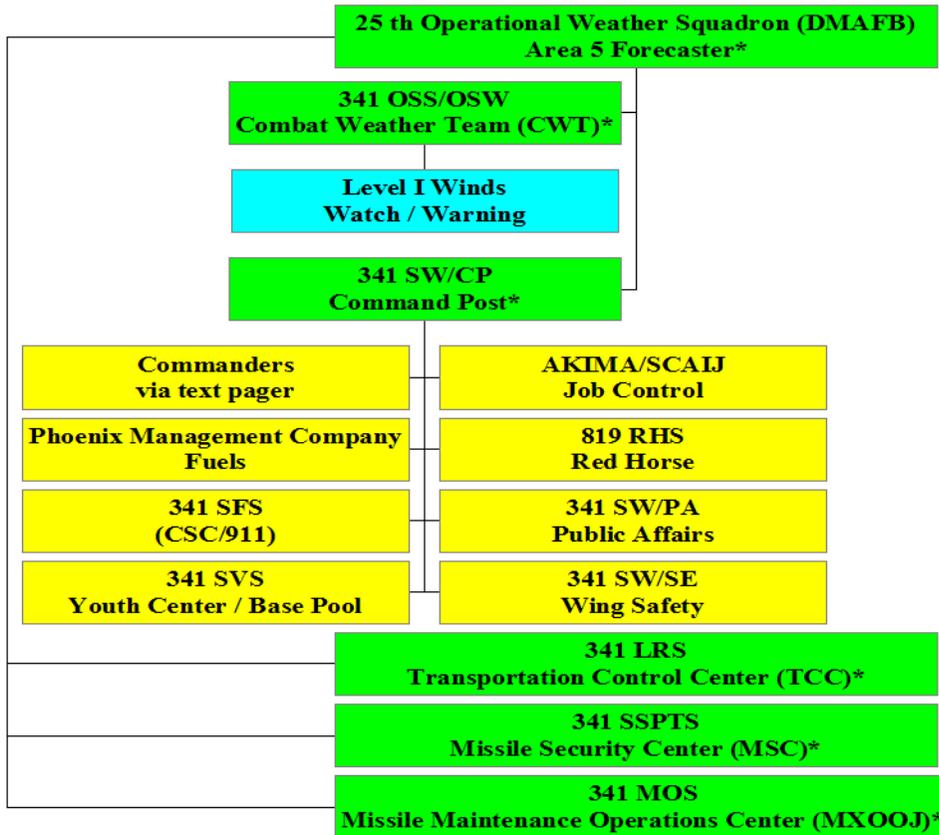
5.1.4.1. N-TFS is the primary means of dissemination. It is critical that agencies with the N-TFS software use it at all times (i.e. be logged into the system) or the resource protection of the base and complex may be jeopardized. In order to ensure the widest and most efficient dissemination of watches, warnings and advisories, the N-TFS must be utilized. For example, a tornado warning may only give personnel 10-15 minutes of lead-time before occurrence. The N-TFS will notify units within seconds of the warning being issued. Failure to utilize the N-TFS will drastically slow down the notification process.

5.1.5. The telephone will be used as a back up for the N-TFS. When the telephone is used, a read-back of disseminated weather information is desired.

5.2. Dissemination for Customers without N-TFS Software. The Command Post will act as the notifying authority for all customers without N-TFS software installed in their work center. A sample of some of the agencies requiring notification that do not have N-TFS installed are listed in [Figure 5.1](#), under the 341 SW/CP (in yellow).

5.2.1. The Command Post, Transportation Control Center and Maintenance Operations Center are considered “Critical Path Agencies”, which play an extremely important role in ensuring wing personnel, throughout the base and complex, are promptly notified. As such, it is imperative that CP, TCC and MOC controllers utilize the N-TFS software and acknowledge receipt of each weather watch, warning and advisory issued and disseminate to those agencies within their notification chain IAW their local procedures. Assistance needed on the proper use of the N-TFS software can be obtained by contacting the CWT.

Figure 5.1. Weather Notification Diagram.



NOTE: The 25th OWS will make a back-up call to 341 SW/CP on any OWS issued product during CWT non-duty hours. The CWT will make a back-up call to the 341 SW/CP and 40 HF on any CWT issued product and OWS issued products during CWT operating hours. Commanders of units in need of weather information that are not listed on this attachment are responsible for getting listed on command post notification lists.

5.3. Backup Product Dissemination Procedures. In the event of an OWS evacuation or communications outage, WWs, WATCHes, and WAs will be disseminated by the CWT. In the event of a CWT evacuation or communications outage, WWs, WATCHes and WAs will be issued (by the CWT) via telephone from the alternate weather operations site to the command post.

Chapter 6

SPECIAL WEATHER SUPPORT REQUIREMENTS

6.1. Special Weather Support Requirements. The previous chapters covered support requirements for daily operations on Malmstrom AFB and the 341 SW missile complex. Information on units requiring other weather support is outlined in this chapter. Any special support requirements not covered here, such as routine climatic data for planning purposes, should be coordinated with the weather flight commander.

6.1.1. Wing Status Update and Battle Staff Support (341 SW). The CWT will provide weather support, when required, at all 341 SW “Wing Status Update” and Battle Staff briefings. The CWT will respond to any recall as required by the 341 SW Commander.

6.1.1.1. Wing Status Update. The CWT will support all “Wing Status Update” briefings, when tasked.

6.1.1.1.1. The CWT Flight Commander or forecaster will provide a briefing at pre-coordinated times. The briefing will consist of:

6.1.1.1.1.1. Current Satellite.

6.1.1.1.2. Current radar composite and surface observation the MAFB ASOS.

6.1.1.1.3. “Malmstrom Forecast” slide (3.3.1.1.).

6.1.1.1.4. 24-48 forecast slide for the Eastern Complex, Western Complex, F.E. Warren AFB, Peterson AFB, and Offutt AFB. Slide will show an icon for sky conditions expected the following two days, the forecasted low, and the next day’s forecast high.

6.1.1.1.5. “Extend MAFB Forecast” slide (3.4.1.2.).

6.1.2. Battle Staff Support. The CWT will provide 24-hour battle staff support, when tasked.

6.1.2.1. The CWT will provide weather representatives for 24-hour support to the support battle staff. During times of limited manning, the CWT may need to keep the forecaster at the weather station to provide resource protection of the wing and not physically remain at the command post or alternate command post on a 24-hour battle staff shift. However, the CWT will provide all weather information required by the battle staff. Updated battle staff briefings will be made available in the “Battle Staff” folder on the wing’s S-drive located at: S:\Weather\Battlestaff Slides.

6.1.2.2. The weather representative will provide weather briefings to the battle staff. The briefing will be identical to the “Wing Status Update” briefing. However, the 24-48 hour outlook slide (6.1.1.1.4.) will not be used in battle staff briefings.

6.1.2.3. When requested, a worst-case toxic plume will be prepared and displayed on the base map in the battle staff. However, Disaster Preparedness Flight (341 CES/CEX) is responsible for the calculation of the actual toxic corridor.

6.1.2.4. The weather representative will maintain and post a copy of the latest “Downwind Fallout Message” (FUUS22 KGWC and FUUS45 KGWC), as required.

6.2. Wing Safety (341 SW/SE). The CWT will provide meteorological data and/or personnel to assist in the investigation of ground, missile, or aircraft mishaps, as required.

6.3. Job Control (AKIMA/SCAIJ). The CWT will notify job control of all communications and support equipment outages, interruptions, and restores. The duty forecaster will open and close all applicable job control numbers regarding meteorological and communications support equipment with job control.

6.3.1. The CWT will assist AKIMA/SCAIJ with any mission impact reports and coordinate scheduled maintenance to minimize the impact on weather operations.

6.4. Disaster Preparedness Flight (341 CES/CEX). The CWT will provide weather data (observations and forecasts) to 341 CES/CEX running Nuclear, Biological, and Chemical (NBC) dispersion models for NBC consequence assessments and toxic corridor calculations.

6.4.1. The CWT will provide Effective Downwind Messages (EDM) and Chemical Downwind Messages (CDM) for CONUS AORs.

6.4.2. The CWT will provide weather data (observations and forecasts) to 341 CES/CEX when requested.

6.5. Troop Support and Training Flight (341 OSS/OSOE). The CWT will provide a CWT operations orientation briefing to all new Facility Managers (FM).

6.6. Helicopter Operations (40 HF). The CWT will provide faxed and/or verbal for any search-and-rescue (SAR) mission.

6.6.1. Upon request, the CWT will provide any special operational, climatological, or flight safety briefings.

6.6.2. The CWT will notify the 40 HF Flight Information Pamphlet (FLIP) monitor of any changes to the CWT's normal hours of operation or to any changes of the PMSV frequency.

Chapter 7

RECIPROCAL SUPPORT

7.1. Reciprocal Support. The CWT requires reciprocal support from various base agencies. The support requirements are essential to the CWT providing timely and accurate support to MAFB. All reciprocal support units listed will conduct an annual review of this instruction and coordinate changes with the weather flight commander.

7.1.1. Command Post (341 SW/CP). The 341 SW/CP will:

7.1.1.1. Notify the CWT of any wing events or incidents that requires immediate weather support.

7.1.2. Utilize the N-TFS software and disseminate WWs, WATCHes, and WAs to agencies not covered by N-TFS (**Figure 5.1.**) and any other agencies IAW local procedures.

7.1.3. Develop and maintain alternate contingency procedures to receive and disseminate WW, WATCH and WA information in the event that the N-TFS is inoperative (e.g. LAN outage).

7.1.4. Prepare and transmit OPREP-3 reports, related to severe weather, IAW AFI 10-206 and applicable MAJCOM directives.

7.1.5. Notify the duty forecaster of any report of weather-related damage to governmental property.

7.1.6. Initiate SWAP by contacting the CWT standby forecaster for any Watch or Warning issued outside of the wing's normal duty hours that is listed in **Table 4.13.**

7.1.7. Forward all severe weather checklists to the CWT OIC/NCOIC for review on an annual basis and whenever significant changes are made.

7.2. Public Affairs Office (341 SW/PA). The 341 SW/PA will:

7.2.1. Act as a liaison office between the CWT and all nonmilitary agencies or individuals.

7.2.2. Receive, process, and forward all valid requests for weather services (forecasts, climatology, lectures, visits, etc.) from nonmilitary sources to the CWT.

7.3. METNAV (341 CS/SCMMM), Job Control (AKIMA/SCAIJ) and Base Radio (AKIMA/SCACR). They will:

7.3.1. Maintain a priority listing for restoration of weather equipment. This list will be coordinated between the CWT and 341 CS and incorporated into 341 CS operating instructions (OI). Attachment 5 lists the current equipment and communication restoral priorities listed in the 341 CS OI 21-9. The CWT may alter the priority listing by coordinating with 341 CS if the meteorological situation warrants. Upon notification of a meteorological or communications outage of any type, AKIMA/SCAIJ will take the appropriate maintenance action in accordance with the priority listing. AKIMA/SCAIJ will call the duty forecaster and verify that logged out weather equipment is fixed prior to closing the item.

7.3.2. AKIMA/SCACR will provide access to the meteorological equipment sensors (ASOS) for the CWT.

7.3.3. Provide access to weather equipment operational technical orders for the CWT.

7.3.4. Coordinate all scheduled maintenance on ASOS and NEXRAD Doppler radar with the CWT. During periods of inclement weather, equipment will not be taken down for maintenance.

7.3.5. Coordinate all mission impacts for inoperable weather equipment with the duty forecaster.

7.4. Disaster Preparedness (341 CES/CEX). The CWT no longer provides toxic corridor information. If necessary, the CWT's battle staff representative will provide a downwind toxic plume for the battle staff. However, this is only a worst-case scenario for any chemical and is calculated using the current wind speed and direction. 341 CES/CEX is responsible for determining the actual toxic corridor.

7.5. Power Production (341 CES/CEOIG). Coordinate with the duty forecaster prior to performing a routine check of the power generator located in Building 1441.

7.6. Troop Support and Training Flight (341 OSS/OSOE). OSOE will:

7.6.1. Annually coordinate training requirements for initial FM weather orientation training with the CWT.

7.7. Helicopter Operations (40 HF). The 40 HF will:

7.7.1. Engage in Cooperative Meteorological Watch by providing PIREPS of any significant or unexpected weather encountered in flight, via PMSV, or debrief to CWT.

7.7.1.1. Engage in Cooperative Meteorological Watch by providing PIREPs during climb-out and descent when low-level hazards are forecast (verifying the occurrence or non-occurrence of the forecast hazard).

7.7.2. Coordinate and provide time during flying safety meetings for weather presentations on selected subjects.

7.7.3. Contact the CWT via the PMSV frequency to serve as a communications check.

7.7.4. Contact 341 CS METNAV section during TACAN outages.

7.7.5. Coordinate with the National Imagery and Mapping Agency (NIMA – DoD) to ensure any meteorological changes (operating hours, equipment, PMSV frequency etc.) are implemented into DoD FLIPs.

7.8. Maintenance Plans Section (341 MOS/MXOOS). The 341 MOS/MXOOS will notify the CWT of scheduled high profile vehicle movements and major maintenance in the missile complex. This will be done the day prior to scheduled movements. Unscheduled, same day movements will be coordinated by the Missile Maintenance Operations Center.

7.9. Transportation Control Center (341 LRS). The TCC will assist the CWT through the Cooperative Weather Watch process. To do this, the TCC will provide an overall picture of the road conditions in the missile complex through the GPS homepage (updated whenever road conditions change).

C. DONALD ALSTON, Colonel, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION***Abbreviations and Acronyms*

AFWA—Air Force Weather Agency (Offutt AFB NE)
AGL—Above Ground Level
ASOS—Automated Surface Observing System
CWT—Combat Weather Team
C—Degrees Celsius
DLT—Desired Lead Time
F—Degrees Fahrenheit
FAA—Federal Aviation Administration
FCST—Forecast
FLIP—Flight Information Publication
Hg—Atomic Symbol for Mercury
JAAWIN—Joint Army-Air Force Weather Information Network
LLWS—Low Level Wind Shear
MAF—Missile Alert Facility
METWATCH—Meteorological Watch
MISSIONWATCH—Mission Watch
MHz—Megahertz (unit for the measurement of frequency)
MSL—Mean Sea Level (height above the average sea level)
NEXRAD—Next Generation Weather Radar (Doppler radar)
NLDN—National Lightning Detection Network
NM—Nautical Mile (Unit for measuring distance)
NOTAM—Notice to Airman
N-TFS—New Tactical Forecast System
NWS—National Weather Service (Department of Commerce)
OWS—25th Operational Weather Squadron (Davis-Monthan AFB, AZ)
PIREP—Pilot Report
PMSV—Pilot-to-Metro Service
RAWS—Remote Automated Weather System
SWAP—Severe Weather Action Procedures

SWAT—Severe Weather Action Team

TEMPO—Temporary Conditions

WA—Weather Advisory

WATCH—Weather Watch

WW—Weather Warning

VC—Vicinity (between 5 and 10 SM from the helipad located near Bldg. 144)

Terms

Ceiling—the height of the lowest broken (mostly cloudy) or overcast (cloudy) layer, when combined with coverage below it.

Celsius—a metric unit used to measure temperature.

Cloudy—Cumulative sky condition is 8/8 covered with clouds (Overcast in aviation format).

Cooperative Weather Watch—Cooperation between the Combat Weather Team, 40 HF, TCC, and personnel deployed in the missile field to ensure critical weather data is passed to the weather agencies.

Desired Lead-time—the amount of advance notice a supported agency needs to react to an advisory or warning (within the limits of state-of-the-art forecast capabilities).

Eyes Forward—Refers to CWT's responsibility to provide real-time weather observations to the OWS (The CWT will act as the "eyes forward" for providing the OWS with conditions at Malmstrom AFB.)

Fahrenheit—an English Standard unit to measure temperature.

Forecast Weather Advisory (FWA)—An advisory issued when critical weather conditions are forecast to occur. It's accompanied by a valid time and a desired lead-time.

Meteorological Watch—The process of the 25th Operational Weather Squadron monitoring the Montana weather. The purpose of a METWATCH is to identify when and where observed conditions are different from forecast conditions so the forecast product can be amended and designated agencies notified.

Mission Watch—The process of the Combat Weather Team monitoring the weather for a specific mission. The purpose of a MISSIONWATCH is to identify and alert 341 SW customers to changes in the Mission Execution Forecast or provide a new MEF because of changes to the mission itself.

Mostly Cloudy—Cumulative sky condition is 4/8 to 7/8 covered with clouds (Broken in aviation format).

Mostly Sunny—Cumulative sky condition is 1/8 covered with clouds (Few in aviation format).

Observed Weather Advisory (OWA)—an advisory issued when critical weather conditions are observed to occur. No valid times or desired lead times accompany this advisory.

Partly Cloudy—Cumulative sky condition is 2/8 to 3/8 covered with clouds (Scattered in aviation format).

Pilot-to-Metro Service (PMSV)—a two-way radio service used for exchange of weather information between the Combat Weather Team and aircraft.

Severe Thunderstorm—a thunderstorm with 50 knot wind or greater and/or $\frac{3}{4}$ inch hail, or greater.

Sunny—Cumulative sky condition is 0/8 covered with clouds (Sky Clear in aviation format).

Weather Advisory—a special notice provided to a supported agency when an established weather condition that could affect its operation is occurring or is expected to occur.

Weather Warning—a special notice provided to a supported agency when an established weather condition of such intensity as to pose a hazard to property or life is occurring or is expected to occur. A weather warning is issued for situations that require the supported agency to take protective action.

Weather Watch—a special notice provided to customers to alert them that atmospheric conditions are favorable for the development of severe weather. Watches will be upgraded to warnings if severe weather activity appears imminent.

Zulu—a system of time, also known as Greenwich Mean Time or Universal Time Coordinate.

Attachment 2

25 OWS AND 341 OSS/OSW (CWT) LIST OF DUTY PRIORITIES

Table A2.1. CWT Duty Priorities.

Priority	Duties
1	Perform Emergency War Order Taskings
2	Respond to Aircraft/Ground Emergencies
3	Provide Products and Services in Support of Combat, Contingency, & Military Operations Other Than War
4	Provide Airborne Aircrew Support (Phone Patch)
5	Provide Resource Protection (Forecast Weather Watches, Warnings and Advisories)
6	Disseminate UUA Pilot Reports
7	Provide Scheduled Flight Weather MEFs and Tactical-level, Non-Contingency MEFs (175-1, Flimsies, Pre-Departure, Combat Readiness Forces, etc.)
8	Provide Aerospace Weather Products, Information and Weather Briefings (Climatology, Plain Language Requests)
9	Accomplish Other Routine Weather Support

Table A2.2. 25 OWS Duty Priorities.

Priority	Duties
1	Perform Emergency War Order Tasks, and/or Support Combat, Contingency and Military Operations Other Than War (MOOTW)
2	Support Organizations During Aircraft/Ground Emergencies
3	Provide Airborne Aircrew Support
4	Provide Resource Protection Forecasts (Weather Watches, Warnings and Advisories)
5	Disseminate UUA Pilot Reports
6	Prepare and Disseminate TAFs, MOAFs and/or RCFs
7	Provide Scheduled Flight Weather MEFs
8	Provide Unscheduled Flight Weather MEFs
9	Prepare and Disseminate Forecast Graphics and Discussion Products
10	Provide All Other Weather Support

Attachment 3

COMMUNICATION AND EQUIPMENT RESTORAL PRIORITIES

Table A3.1. Communication and Equipment Restoral Priorities.

EQUIPMENT/COMMUNICATIONS	RESTORAL PRIORITY
Base Weather UHF Radio (239.8)- PMSV	Outage – 2
	Impairment – 3
WSR-88D (NEXRAD) Weather Radar PUP	Outage – 1
	Impairment – 3
Automated Surface Observation System (ASOS)	Outage/Impairment – 3

Restoral PriorityNormal Response Times*

1	Immediate
2	ASAP (NLT 24 hrs)
3	Next duty day

NOTES:

1. Discrepancies turned over to civilian contractors will be responded to as per their contract.
2. May request quicker response times than outlined in this table and 341 CS OI 21-9. If mission requirements dictate this, submit a request through the Mission Systems Flight Commander who will in turn make the final determination on restoral priority.