BY ORDER OF THE COMMANDER
43D AIRLIFT WING

POPE AFB INSTRUCTION 15-101

26 NOVEMBER 2001

Weather

WEATHER SUPPORT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction establishes weather responsibilities and support procedures, and 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 43d Airlift Wing and subordinate units, and units assigned or attached to Pope AFB.

SUMMARY OF REVISIONS

This edition of POPEI 15-101 supersedes the previous POPEI 15-101 dated 5 May 99. This revision includes the following major changes due to Air Force Weather Reengineering: transfer of forecast responsibility and weather warning and weather watch responsibility to 28 Operational Weather Squadron (28 OWS). The observed advisory for thunderstorms within 10 NM has been changed to a warning for observed thunderstorms within 10 NM. In addition there are major changes to 43 OSS/OSW duty priorities, the inclusion of space weather information and the shifting of Toxic Hazard Corridor responsibilities to 43 CES. Notable changes include a name change of the Automated Weather Distribution System (AWDS) to the Advanced Meteorological Information System (AMIS) and the inclusion of two new Air Force Weather Instructions AFI 15-128, *Aerospace Weather Operations - Roles and Responsibilities* and AFMAN 15-129, *Aerospace Weather Operations - Processes and Procedures.*

1. Mission.

1.1. General.

1.1.1. 43 OSS/OSW: Provide timely, accurate, and relevant weather information and products for Air Force and Army operations at Pope AFB and the Fort Bragg ranges. Produce and disseminate Mission Execution Forecasts (MEFs), observed weather warnings and advisories, surface weather observations, and flight weather briefings for transient aircrews operating at Pope AFB and the Fort Bragg ranges. 43 OSS/OSW is organized, trained, and equipped to conduct weather operations and sustain the readiness level required to meet deployment requirements.

1.1.2. 43 OSS/OSW is co-located with Base Operations in Building 708.

1.1.3. 43 OSS/OSW Operating Hours:

1.1.4. Staff: Staff services are available from 0730(L) to 1700(L) Monday through Friday (except federal holidays).

1.1.5. Contact information (Flt/CC 4-5900; Wing Weather Officer 4-5903; and Chief, Weather Station Operations 4-5901).

1.1.6. Operations: Weather operators are on duty 24-hours a day, 7 days a week. Contact information (Forecaster; 4-6543 Observer; 4-6544).

1.2. Concept of Operations (OWS - WF Team).

1.2.1. Concept of Operations will be directed IAW Memorandum of Agreement 15-28 (MOA) between 28 OWS (609 AOG/CC) and 43 OSS/OSW (43 OG/CC). In addition, the following are the "Order of Priority Duties" of the base weather station IAW AFMAN 15-129.

1.2.1.1. Perform Emergency War Order (EWO) Taskings.

1.2.1.2. Respond To Aircraft/Ground Emergencies.

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

1.2.1.4. Provide Supervisor of Flying (SOF) Support.

1.2.1.5. Take and Disseminate Surface Weather Observations Locally/Provide “Eyes Forward” Support to OWS.

1.2.1.6. Perform Coordinated METWATCH Support.

1.2.1.7. SWAP Operations.

1.2.1.8. Produce and Disseminate Mission Execution Forecasts (MEFs).

1.2.1.9. Disseminate PIREPs Locally.

1.2.1.10. Relay Urgent PIREPs and Special AIREPs to OWS.

1.2.1.11. Transmit Surface Observations and PIREPs/AIREPs Longline.

1.2.1.12. Perform MISSIONWATCH.

1.2.1.13. Provide other Briefing Support.

1.2.1.14. Weather Function Training.

1.2.1.15. Accomplish Administrative Tasks.

1.3. Operational Support Requirements.

1.3.1. Operational Support Requirements will be conducted IAW AFMAN 15-129 and AFI 15-128.

1.4. Alternate Weather Operations Site.

1.4.1. In the event that the Base Weather Station is evacuated from Bldg 708, there are two alternates sites: Air Traffic Control (ATC) Tower and the aircrew planning room of Bldg 900 (Rm. 107). Surface observations can either be taken from Bldg 900 (primary) or the base of the ATC Tower (secondary) while "airfield services" will be conducted from Bldg 900. Surface observations can be transmitted via the Air Force Weather Agency web site (Joint Air Force and Army Weather Information Network).

2. Weather Observing.

2.1. General.

2.1.1. Surface weather observations are recorded and disseminated in accordance with AFMAN 15-111, *Surface Weather Observation*. Observations are taken every hour or as special weather criteria are met. In addition, observations are taken 24 hours a day, seven days a week, to include all holidays and other base downtimes.

2.2. Limitations.

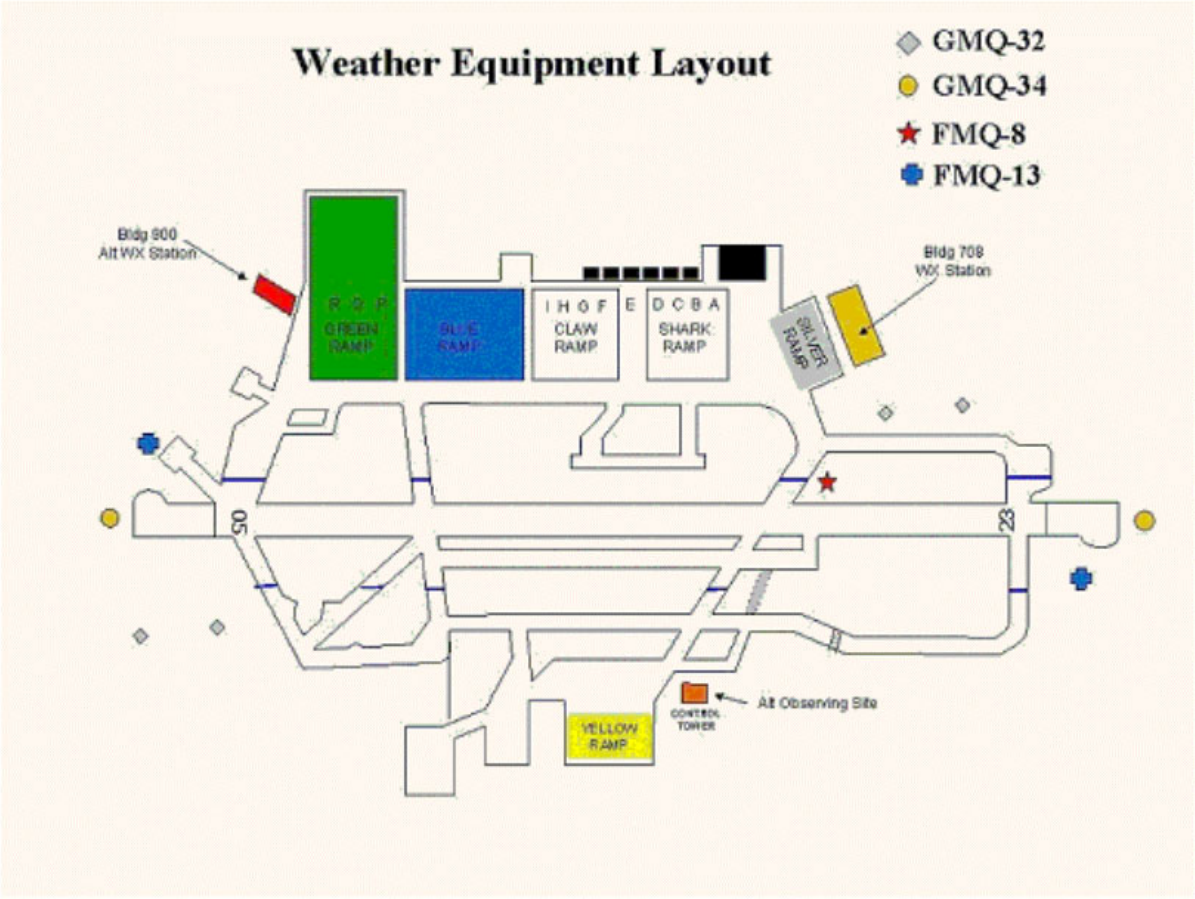
2.2.1. Observations are conducted from a point approximately 150 feet away from the southwest side of building 708 (location of Base Operations). The site has a limited view of the horizon (from 230º through 070º the horizon is limited to less than ½ mile due to buildings and trees). These obstructions do not allow the observer to see the approach end of Runway 23. These limitations are partially compensated for by the Cooperative Weather Watch program described in section **2.4.2.**, requiring control tower personnel to alert the observer to changing conditions.

2.2.2. During rapidly changing conditions (i.e. thunderstorms), the observer may use the ROS (Representative Observing Site). The ROS is located in the alternate tower, which is directly above the weather station. The observer will use a laptop computer and information provided from the Automated Observing System to transmit observations.

2.3. Meteorological Equipment and Locations and Limitations.

2.3.1. The 43 OSS/OSW meteorological equipment is located at numerous locations across Pope AFB (see diagram below for airfield equipment). The main weather equipment used by weather personnel, the Advanced Meteorological Information System (AMIS), is located in Bldg 708. The AMIS system is made up of several components with the main support equipment located in the computer room of the weather station. There are several distribution terminals, which relay pertinent weather information to the end users. These terminals are located at Fayetteville Approach, Air Traffic Control Tower and various organizations throughout Pope AFB. Additionally, AMIS software can be added to any PC on Pope AFB to access the most current weather information.

Figure 1. Weather Equipment Location.



2.4. Observations.

2.4.1. Basic Weather Watch (BWW): The BWS requires that the weather observer checks conditions every 20 minutes when the following is occurring or is forecast to occur:

2.4.1.1. The ceiling is 1500 feet or less.

2.4.1.2. Visibility is three miles or less.

2.4.1.3. Precipitation is observed.

2.4.1.4. Fog or mist is present.

2.4.1.5. Any of the above conditions are forecast to occur within one hour.

2.4.2. Cooperative Weather Watch: The BWS observers provide the primary observation support, but it is not a continuous weather watch. Control Tower personnel supplement the observing support with a cooperative weather watch in accordance with their duty priorities. Control Tower personnel will alert the observer, via hotline, when the following weather changes occur:

2.4.2.1. Visibility increases or decreases by one reportable value or more.

2.4.2.2. Tower visibility decreases to less than 4 statute miles or, if below 4 statute miles, tower visibility increases to equal or exceed 4 statute miles.

2.4.2.3. Precipitation begins or ends.

2.4.2.4. Any indication of convective activity (lightning, rain showers or cumulonimbus clouds on the horizon).

2.4.2.5. Rapid development, clearing, lowering, or rising of cloud layers.

2.4.2.6. Any weather condition that could have an impact on the safe operation of the airfield.

2.4.3. Dissemination of Observations: Observations are disseminated hourly on AMIS and more frequently for changes in special criteria. The diagram below depicts a typical observation and gives a breakdown of the coding.

METAR KPOB 081555Z 35012G18KT 1/2SM R05/3000FT -SN FG SCT011 OVC015 01/M02 A2945 RMK PK WND 19029/16 SLP045				
	Observation Types:			
		METAR - Hourly Observation		
		SPECI - Special Observation		
		LOCAL - Local Observation		
		KPOB is the station identifier for Pope AFB. All stations will have a 4-letter identifier.		
		081555 is the date and time of the observation in UTC (Zulu).		
		35012G18KT is the wind group. (350 degrees at 12 knots with gusts to 18 knots.)		
		Direction is reported as true direction from which the wind is blowing and coded in tens of degrees using 3 digits.		
			Speed and gusts are coded in knots using 2 or 3 digits.	
			Calm winds are coded as "00000KT"	
			VRB means variable winds (no direction).	
		1/2SM is the visibility group and is reported in statute miles (Nautical Miles = Statute Miles x 0.86897624)		
		R05/3000FT is the runway visual range and is reported in feet (Runway 05 has visual range of 3000ft).		
		-SN FG is the present weather that is occurring at the station. A list of contractions is located in **Attachment 2**.		
		SCT011 OVC015 is the sky condition. (1,100 scattered and 1,500 overcast)		
			Layer amounts are measured in eighths (octas); SKC = clear, FEW = >0 to 2/8, SCT = 3/8 to 4/8, BKN = 5/8 to <8/8, OVC = 8/8	
			Coded in ascending order up to the first overcast layer.	
			VV identifies the vertical visibility into an indefinite ceiling, e.g., VV002 (vertical visibility of 200ft).	
			Heights are coded in hundreds of feet using three digits.	

			Ceilings are the first BKN or OVC layer aloft.
			FEW000 means that a layer is less than 50ft above the surface.
			Any amount of cumulonimbus or towering cumulus will be identified with "CB" or "TCU" appended to the layer height.
		01/M02 is the temperature and dew point group and coded in two digits in degrees Celsius. Sub-zero values are prefixed with an "M".	
		A2945 stands for the altimeter setting in inches of mercury.	
		RMK PK WND and SLP is the peak wind remark and the sea level pressure (peak wind from 190 at 29KT occurred at 16 min past the hour).	

3. Weather Forecasting.

3.1. General.

3.1.1. The Pope AFB Weather Station is manned 24 hours a day, 7 days per week by a weather observer. A forecaster is on duty when home station aircraft (43 AW, 23 FG, 427th SOS, and Golden Knights) are operating. During inclement (severe) weather the forecaster will be augmented by the Severe Weather Team (Flight Commander and/or Chief Weather Station Operations).

3.2. Limitations.

3.2.1. None.

3.3. Terminal Aerodrome Forecast (TAF).

3.3.1. TAFs (**Attachment 3**) for Pope AFB are issued daily at 0400L, 1200L and 2000L (The Zulu issue time changes according to Day Lights Saving Time/Eastern Standard Time). Each TAF is valid for 24 hours and is amended as necessary per criteria listed in **Attachment 1**. The TAF is disseminated from the 28 OWS via the AMIS. The following diagrams show an example of what a typical forecast looks like, and gives the breakdown of the forecast code.

KPOB TAF AMD 160808 20009KT 9999 –SHRA VCTS FEW010 BKN035 BKN075 OVC200 610758 510003 QNH2982INS T09/12 T17/23
TEMPO 0912 VRB12G18KT 9000 -TSRA SCT010 BKN025CB OVC050
BECMG 1415 VRB05KT 9999 NSW FEW020 SCT030 BKN080 BKN150 610807 510003 QNH2985INS AMD 0530;
KPOB is the station identifier for Pope AFB.
TAF means that this is a forecast; Terminal Aerodrome Forecast.
AMD is an amended forecast and COR is a corrected forecast.

160808 is the valid time for the forecast on the 16th of the month from 08Z today to 08Z tomorrow (17th of month).
20009KT is the wind direction and speed. Direction is given in 3 digits and speed in 2 digits. Wind direction is forecast to be from 200 degrees with a speed of 9 knots. Any wind characteristic such as gusts will follow.
9999 is the visibility in meters; 9999 is unrestricted visibility.
-SHRA (Rain Showers) is the significant weather at the station.
VCTS indicates thunderstorms are expected within 5-10NM of Pope.
FEW010 BKN035 BKN075 OVC200 is the sky condition group.
FEW010 means 1/8th or 2/8's coverage of a cloud layer at 1,000 feet.
SCT means a cloud layer is covering 3/8's or 4/8's.
BKN035 means a cloud layer is forecast to be 5/8-7/8's, or broken, with a base at 3,500 feet.
OVC200 means a cloud layer is forecast to cover 8/8's with a base at 20,000 feet.
QNH2982INS means the minimum altimeter setting forecast until the next change group is 29.82 inches of mercury.
The initial line of the forecast is valid until there is a change group or the valid time of the forecast expires, whichever occurs first.
BECMG 1415 stands for becoming. This means the change in the forecast will begin at 0800z and be complete by 0900Z.
TEMPO groups forecast intermittent changes in the predominant forecast and last only a short period of time (i.e. 0600-0700Z). At the completion of the TEMPO group, the previously forecasted condition remains in effect.
FM10 groups are used when a rapid change in the forecast will take place in a 30-minute period and be complete by the given time.

3.4. Mission Execution Forecasts (MEF) Products.

3.4.1. Weather Planning Sheet. The duty forecaster will prepare weather-planning sheet weekdays at approximately 0500L and 1400L for airdrop missions. These planning sheets can be found under the Weather Intranet page via the POPENET. The planning sheet provides temperature, wind, and pressure forecast for Pope AFB and the Ft. Bragg drop zones. This sheet is for planning purposes only and is not amended.

3.4.2. Weather Intranet Home Page. This page is designed to disseminate weather information to the fullest extend possible on Pope AFB. The page is not designed for operational use but does provide general planning weather, current temperature, current winds, forecast conditions (clouds, winds, and any hazards), current watches and warnings, satellite imagery, current radar imagery and other useful meteorological information. The site can be found at the following address **https://popenet/43OG/weather/index.html** or through the POPENET.

3.4.3. Aircrew Flight Briefings (DD Form 175-1, **Flight Weather Briefing,** AMC Form 181, **AMC Mission Weather Briefing**). Departure and update briefings are available at the BWS or by phone. Updates are also available through PMSV at 344.6 UHF. DD Form 175-1 and AMC Form 181 flight weather briefings will be pre-filled with information provided by the AMT and the 43 AW Flying Schedule. "Pro" missions different from the pre-determined destinations ICAOs (KAVL, KILM/KMYR, KNKT, KISO/KGSB and KFAY) should be coordinated as soon as possible in advance, if possible. Verbal flight weather briefings are made in accordance with AFMAN 15-129 and AMCI 15-101, *AMC Weather Operations* and are recorded on the Pope AFB local briefing form.

3.4.4. Out of Station Briefings/Mass Briefing Request: All Joint Mission Briefs or any other mass briefing, which will require a weather briefer to attend, must be coordinated at least one week in advance through 43 OSS/DO. 43 OSS/OSW will provide seasonal briefings and climatological studies, on request, during flying safety meetings.

3.4.5. Instrument Refresher Course/Seasonal Briefings. Briefings covering seasonal weather or the weather portion of the Instrument Refresher Course (IRC) will be presented as required (i.e., at flying safety meetings, pre-deployment briefings, etc.)

3.5. Pilot-to-Metro Service.

3.5.1. The weather flight will operate a UHF radio on assigned frequency 344.6 MHZ for voice contact with aircrews requiring weather service from Pope AFB. Alternate stations such as Charleston AFB, Andrews AFB, and Cherry Point NAS also use the same PMSV frequency. Each aircrew, time permitting, should relay a report of position, quality of reception, and weather en route or at their location to the BWS.

3.5.2. Forecasters and observers are authorized to answer the PMSV. However, an observer is only allowed to relay observations and forecasts. They are not allowed to expand upon the information provided unless a certified forecaster supervises them.

3.5.3. Aircrews are encouraged to use alternate means to contact the BWS when the PMSV is inoperative (e.g., contact tower, base ops, another PMSV facility, phone patch via the Command Post, etc.)

4. Weather Warnings/Watches.

4.1. General.

4.1.1. 43OSS/OSW and 28 OWS will provide weather warning/watch service to supported agencies for weather phenomena, either forecast or observed, which may affect operations. 43 OSS/OSW will issue all observed weather advisories. Due to the variety of operations at Pope AFB, the types and lead times of weather warnings and watches will vary. **Attachment 4** explains in detail the flow of warning and watch information from 28 OWS to the end user.

4.2. Limitations.

4.2.1. None.

4.3. Weather Watch.

4.3.1. Weather Watch (WATCH). A special notice provided to supported agencies that alerts them that the potential for weather conditions of such intensity as to pose a hazard to life or property exists. The weather watch is a "heads up" for agencies. It gives them time to consider the required protective actions should an actual weather warning be issued later.

4.3.2. Weather watches are issued by 28 OWS IAW the guidance in AFMAN 15-129 and MOA15-28. 28 OWS will issue a forecast weather watch for within 5 NM of Pope AFB when the potential for the criteria defined in **Table 1.** exists.

4.3.2.1. Severe Thunderstorm Watch. Implies the potential development of severe thunderstorms that could produce large hail (GT 1/2”), wind gusts of 50 knots or more, and/or tornadoes.

4.3.2.2. Tornado Watch. Implies that conditions are favorable for the development of tornadoes within 5 NM of Pope AFB. Tornadoes will be specified in this watch if the potential for tornado development exits.

4.3.2.3. Winter Storm Watch. Implies a storm system will produce heavy snow (greater than 2 inches in 12 hours) or freezing rain.

4.3.2.4. Lightning Watch. Issued at least 30 minutes prior to the expected onset of lightning within 5 NM of Pope AFB.

Table 1. Forecast Weather Watch Criteria and Minimum Desired Lead-Times.

Criteria	Desired Lead-Time
Tornado	4 hours
Severe Thunderstorm (Winds ≥ 50 Knots and/or Hail ≥ 1/2 Inch)	4 hours
Winter Precipitation - Includes Any Snowfall and/or Freezing Precipitation (Any Intensity)	4 hours
Thunderstorms/Lightning potential within 5 nm	30 minutes

4.4. Weather Warnings.

4.4.1. Weather Warnings are a special notice provided to supported agencies that gives them advance notification (with sufficient time to allow protective actions to be taken) that weather conditions of such intensity as to pose a hazard to life or property, are expected to effect directly a designated geographic area, or directly effect an area within a set nautical mile distance of a designated location.

4.4.2. Weather Warnings are issued by 28 OWS IAW the guidance in AFMAN 15-129 and MOA 15-28. 28 OWS will issue a weather warning when the following criteria are expected to occur within 5 NM of Pope AFB. (The only weather warning, which is not forecast are the observed lightning within 5 NM and 10 NM.). The following **Table 2.** lists the current warnings and desired lead-times for Pope AFB:

Table 2. Weather Warning Criteria and Associated Minimum Desired Lead-Times (Per AFMAN 15-129).

Criteria	Desired Lead-Time
Tornado	30 minutes
Severe Thunderstorm (Winds ≥ 50 Knots)	120 minutes
Severe Thunderstorm (Hail ≥ 1/2 Inch)	120 minutes
Moderate Thunderstorm (Winds ≥ 35 but < 50 Knots)	90 minutes
Winds Not Associated with Thunderstorms (≥ 50 Knots)	120 minutes
Winds Not Associated with Thunderstorms (≥ 35 but < 50 Knots)	90 minutes
Winter Precipitation - Includes Heavy Snowfall (GT 2 inches) and/or Freezing Precipitation	90 minutes
Lightning within 5 NM	Observed
Lightning within 10 NM	Observed

4.5. Weather Advisories.

4.5.1. Weather Advisories are a special notice provided to supported agencies, which notifies them, that non-severe weather conditions that could effect their operations are occurring within a designated geographic area or within a set nautical mile distance of a designated location. An observed weather advisory is issued on the first occurrence of the designated criteria. An observed weather advisory is used when agencies do not require advanced notification prior to the onset of the weather conditions.

4.5.2. 43 OSS/OSW will issue all weather advisories for observed weather phenomena, which may affect agencies' operation. Weather Advisory criteria are indicated in **Table 3.**:

Table 3. Pope AFB Observed Weather Advisories.

Weather Phenomena	Lead Time
Surface winds ≥ 20 KT	observed
Cross winds ≥ 15 KT	observed
Fighter Index of Thermal Stress (FITS)	observed
Heat Stress Category V (Five)	observed
Severe Thunderstorms within 25NM (as defined in Chapter 4)	observed
Icing (Moderate / Moderate-OCNL-Severe / Severe or Greater)	observed
Turbulence (Moderate / Moderate OCNL Severe / Severe or Greater)	observed
Low Level Wind Shear (Based on NEXRAD and/or PIREPS)	observed

4.6. Hurricanes/Tropical Storms:

4.6.1. When a hurricane or tropical storm develops in the Atlantic Basin or Caribbean Sea, daily e-mail updates will be disseminated, at a minimum, to all Group Commanders on Pope AFB until the system has dissipated or no longer poses a threat to Pope AFB. If a tropical system is expected to impact Pope AFB operations with winds over 50 knot within 72 hours; a copy of the graphics output from the NHC or other graphics from Air Force Weather Agency will be faxed to the 43 AW/CP, 43 AW/CC, and the 43 OG/CC as they become available from the NHC. It will contain present storm location, forecast storm positions and wind speed data. Also, a hurricane tracking board will be updated in the base weather station as these reports become available. Below are the descriptions of the HURCON conditions.

4.6.1.1. HURCON 4 - 72 hours prior to arrival of sustained 50KT winds

4.6.1.2. HURCON 3 - 48 hours prior to arrival of sustained 50KT winds

4.6.1.3. HURCON 2 - 24 hours prior to arrival of sustained 50KT winds

4.6.1.4. HURCON 1 - 12 hours prior to arrival of sustained 50KT winds

5. Dissemination of Weather Information.

5.1. General

5.1.1. All watches, warning and advisories transmitted via AMIS and the Secondary Crash Net will share the following components:

ENTRY	FORMAT
Month / warning or watch number	#mm-nnn
Valid time (GMT with local in parenthesis)	V.T. dd/hhhh - dd/hhhh
Plain Language Text	Plain Language
Minutes past the hour / forecaster initials	xx/ii
EXAMPLE WEATHER WATCH: WEATHER WATCH #06-009. THE POTENTIAL EXISTS FOR SEVERE THUNDERSTORM DEVELOPMENT AT POPE AFB DURING THE PERIOD 21/1600Z - 21/2300Z. WINDS OF 50 KNOTS OR GREATER AND/OR HAIL 1/2 INCH OR GREATER ACCOMPANYING SEVERE THUNDERSTORMS. A WARNING WILL BE ISSUED LATER IF REQUIRED. 08/AH	
EXAMPLE WEATHER WARNING: WEATHER WARNING #06-004. SEVERE THUNDERSTORMS WITH WIND GUSTS TO 55 KNOTS AND 1 INCH HAIL IS EXPECTED AT POPE AFB DURING THE PERIOD 21/1900Z - 21/2300Z. 07/SV	
EXAMPLE WEATHER ADVISORY MESSAGE: WEATHER ADVISORY 03-018 VALID 18/2100Z (18/1600L) TO UFN SURFACE WINDS GREATER THAN 20 KNOTS HAS BEEN OBSERVED AT POPE AFB. 35/JO	

5.2. Advanced Meteorological Information System.

5.2.1. AMIS is the software for the New Tactical Forecast System (NTFS). This software is the first step toward the DoD standard and Defense Information Infrastructure and Common Operating Environment (DII COE) compliant weather information system. AMIS is fielded in both in-garrison and tactical versions to provide weather personnel "same in peace as in war" operating capability.

5.3. Alternate Weather Operations Site.

5.3.1. The Alternate Weather Operations Site, located in Bldg 900, Room 107A, contains an AMIS system. There will be no interruption to service except for the time it takes to evacuate the weather station and re-locate to Bldg 900 Rm. 103.

5.3.2. The Alternate Observing Site for the weather observer will be the Air Traffic Control (ATC) Tower. The weather observer will notify the tower that they are evacuating to the tower. The ATC Tower personnel will grant access to the weather observer upon arrival.

5.4. Weather Watch, Warning and Advisory Notification.

5.4.1. The 43 OSS/OSW forecaster and/or the 28 OWS will issue Weather Warnings/Watches via the AMIS. The AMIS automatically alerts each agency with an AMIS terminal. In addition, Base Operations will disseminate the Weather Warning/Watch over the Secondary Crash Net.

5.4.2. With the exception of "Lightning Within 5 NM", only one weather warning can be valid for Pope AFB at one time. All warnings will follow the numbering format illustrated in Chapter 4. When a warning is no longer representative of current conditions, the warning will either be

amended or canceled. The BWS will also cancel advisories as soon as the weather phenomena is no longer occurring, or is not likely to occur again.

5.4.3. If amended, a new warning will be issued with the next available warning number. This new warning will include the statement “This warning (upgrades / downgrades) supersedes WW# (previous warning number).

5.4.4. If extended, re-notification will take place to the appropriate agencies with the new valid time for the warning / watch in effect.

5.4.5. Back-up telephone notification will also be made to Base Operations and Command Post to ensure receipt of the tornado warnings.

5.4.6. Base Operations will verbally disseminate warnings for "Lightning within 5 NM of Pope AFB" immediately upon notification via the secondary crash net.

5.4.7. Base Operations will disseminate the following Weather Advisories via the secondary crash net: Observed surface winds greater than 20 knots, Observed Heat Stress Category V (Five), and Observed Thunderstorms within 10 NM. Weather Watches are not transmitted via the Secondary Crash Net.

5.4.8. If the AMIS is inoperable, the following agencies will be notified of all advisories via telephone:

Table 4. Advisory Backup Notification.

Agency	Method
Base Operations	Direct Line
Command Post	Direct Line
Tower	Direct Line
SOF	Direct Line
14th ASOS	4-2721
427th Special Ops	4-6417

6. Space Weather Support and Service.

6.1. General.

6.1.1. Space weather is defined as weather occurring from the upper atmosphere to the sun. Space weather is divided into four regions as shown below:

Region	Region Location or Size of Region	Time-scales of Features Important to AFW	Examples of Space Weather Features	Importance to Military Operations
Solar	Sun's atmosphere (photosphere, chromosphere & corona)	- 11-year solar cycle. - 27-day rotation cycle of active regions/sunspots. - Days to weeks for active regions. - Minutes to hours for flares and radio burst.	Sunspots, Flares, Coronal Holes, Filaments, Prominences, Coronal X-Ray Emissions, Particle (proton and electron) Ejections, Radio Bursts.	Source of energy that drives space weather phenomena.
Interplanetary Space	Between sun's corona and earth's magnetosphere	- 8 minutes for radiation to reach earth. - 15 minutes to few hours for high-energy particles to reach earth. - 1 to 3 days for low to medium energy particles to reach earth.	Solar Wind, Interplanetary Magnetic Field (IMF), Solar Particles.	Region dominated by the solar wind, which impacts the earth's magnetic field.
Magnetosphere	Measured along earth-sun line: 10 times radius of earth (10 Re) toward the sun & 1000 Re behind the earth	- Minutes to months.	Radiation Belts, Electrical Currents, Earth's Magnetic Field (geomagnetic field), Geomagnetic storms.	Region of most satellite orbits, effects radio propagation.
Ionosphere	50 km - 1000 km + - Seasonal & daily variations	- Minutes to days. - Dramatic variations resulting from increased solar activity.	Ionized Layer (D- E- F1, & F-2 Regions), Aurora, Ionospheric Disturbances.	Region effects radio propagation, satellite comm, GPS receivers, missile warning, and space surveillance and space track radars.

6.2. Limitations.

6.2.1. The 43 OSS/OSW does not have the capability to produce warning level or space related products. However, 43 OSS/OSW must be aware of the existence of these products and use them as needed by the customer.

6.3. Space Weather Alerts and Warnings.

6.3.1. Strategic centers prepare many alerts, warnings and advisories that are used to provide resource protection for valuable satellite assets. Dissemination to customers is accomplished through the Automated Weather Network (AWN) and Defense Message System (DMS).

Warning/Advisory	Criteria	Desired Lead-Time
Solar Radar Event	> 1500 SFU radio burst occurred on any frequency.	- None. Issued when observed.
Solar Radio Event (Preliminary)	> 5000 SFU radio burst occurred on any frequency.	- None. Issued when observed.
Solar Radio Event (Final)	> 5000 SFU radio burst has ended.	- None. Issued when observed.
Energetic Particle Alert	- Potential exist for > 50 MeV protons flux to reach 10 particles per square centimeter per second per steradian.	- None. Issued when observed.
Energetic Particle (In Progress)	> 50 MeV protons flux has reached 10 particles per square centimeter per second per steradian.	- None. Issued when observed.
Energetic Particle (Forecast)	- Forecast for > 50 MeV protons flux to reach 10 particles per square centimeter per second per steradian.	- Based on model output.
Energetic Particle (Cancel)	- An "Energetic Particle Alert" was issued, but Proton potential no longer exists.	- Based on model output.
Energetic Particle (Alert-Update)	> 50 MeV protons flux has reached 10 particles per square centimeter per second per steradian, and potential exists for increased proton flux and or duration of event.	- None. Issued when observed.
Energetic Particle (End)	> 50 MeV protons flux has been consistently below 10 particles per square centimeter per second per steradian for 3 hours, and is not expected to be > 50 MeV protons flux to reach 10 particles per square centimeter per second per steradian during the next 24 hours.	- Based on model output.
Short Wave Fade (Initial Alert)	- X-Ray flux has equaled or exceeded M1.0.	- None. Issued when observed.
Short Wave Fade (Major Alert Update)	- X-Ray flux has equaled or exceeded X1.0.	- None. Issued when observed.

Warning/Advisory	Criteria	Desired Lead-Time
Short Wave Fade (Maximum reached)	- X-Ray flux has reached its peak from the event (1).	- None. Issued when observed.
Short Wave Fade (Continuation)	- Issued if the assigned duration of the current Short Wave Fade (frequencies effected) has expired and the event is still in progress.	- None. Issued when observed.
X-Ray Flare Event	- Expect HF radio blackouts up to specified frequency and duration on sunlight side of the earth.	- None. Issued when observed.
Geomagnetic (Forecast)	- The 24-hour Ap, valid for the end of the next UTC day, is expected to be > 30.	- 24 hours.
Geomagnetic Storm Warning (Forecast Amendment)	- A Geomagnetic Forecast was issued the previous UTC day, and the 24 hour Ap is no longer expected to reach > 30, however, > 30 is expected by the end of the next UTC day.	- 24 hours.
Geomagnetic Storm Warning (Cancel)	- A Geomagnetic Forecast was issued the previous UTC day, and the 24 hour Ap is no longer expected to reach > 30.	- ASAP.
Geomagnetic Storm Warning (In Progress)	- Running 3-Hour Ap index > 30 (Minor), > 50 (Major).	- None. Issued when observed.
Geomagnetic Storm Warning (End)	- Running 3-Hour Ap index < 30	- None. Issued when observed.
3B Flare Event	- Optical flare > 3B observed	- None. Issued when observed.
Polar Cap Absorption (Forecast)	- Forecast for: > 10 MeV protons flux to reach 40 particles per square centimeter per second per steradian or Thule Riometer Daytime absorption > 2.0 decibels (db) or Nighttime absorption > 0.5 (db)	- Based on model output.
Polar Cap Absorption (Forecast Amendment)	- Polar Cap Absorption Forecast issued with different valid time and/or absorption levels.	- Based on model output.
Polar Cap Absorption (In Progress)	> 10 MeV protons flux has reached 40 particles per square centimeter per second per steradian or Thule Riometer reads Daytime absorption > 2.0 decibels (db) or Nighttime absorption > 0.5 (db)	- None. Issued when observed.
Polar Cap Absorption (End)	- Proton and Absorption below event levels for 6 hours, and not expected reach event levels again during the next 24 hrs.	- None. Issued when observed.
Internal charging Advisory (Forecast)	- Forecast for the 72 hour > 2 MeV electrons flux > 1.0E9 particles per square centimeter per second per steradian	- 24 hours.

Warning/Advisory	Criteria	Desired Lead-Time
Internal charging Advisory (Forecast Cancellation)	- Forecast for the 72 hour > 2 MeV electrons flux > 1.0E9 particles per square centimeter per second per steradian no longer expected	- ASAP.
Internal charging Advisory (In Progress)	- 72 hour > 2 MeV electrons flux is >1.0E9 particles per square centimeter per second per steradian	- None. Issued when observed.
Internal charging Advisory (Fcst)	- Electron fluence below event levels	- None. Issued when observed.

6.4. Additional Space Weather Products and Support.

6.4.1. None.

7. Special Mission Requirements.

7.1. General.

7.1.1. Mutual support and cooperation are key elements in the weather flight's ability to provide complete and timely weather service to its customers. Responsibilities of various base agencies are addressed in this chapter.

7.2. 43d Airlift Wing Commanders and Staff.

7.2.1. 43 OSS/OSW will provide a weather brief during each 43d Airlift Wing Commanders weekly staff meeting, unless directed otherwise. The weather briefs will consist at a minimum: current weather, satellite imagery and a 5-day forecast. The weekly briefer may brief other pertinent slides as appropriate (drop zone forecasts, hurricane formation, severe weather recaps, and monthly climo slides).

7.3. 43d Operations Support Squadron Airfield Operations (43 OSS/OSA and 43 OSS/OSAT).

7.3.1. Ensure dissemination of Weather Warnings and Advisories as outlined in previous chapters of this instruction.

7.3.2. Notify the BWS immediately of all aircraft emergencies, incidents, or accidents.

7.3.3. Notify 43 OSS/OSW Chief, Weather Station Operations or Flight Commander of all changes to published approach minimums at Pope AFB.

7.3.4. Notify the base weather station of any outages of the AMIS system that they encounter.

7.3.5. Provide Runway Condition Reports (RCR/RSC) to the weather observer for local and longline dissemination. Weather will be notified of initial conditions and all changes in RCR/RSC (GMQ-32 on RWY 05 is non-operational).

7.3.6. When the BWS GMQ-32 (transmissometer) is inoperative on the active runway and prevailing visibility is less than one mile (1 nm), Base Operations will:

7.3.6.1. Visually determine RVR by counting observable runway lights. The senior duty controller (or as designated by the airfield manager) will stand at the first light on the runway touchdown end and count the number of lights visible.

7.3.6.2. Relay this data as quickly as possible (radio, telephone, etc.) to the base weather station. If priorities permit, remain at the runway to take additional observations.

7.3.7. Participate in a Cooperative Weather Watch IAW Chapter 2.

7.3.8. Advise the BWS of all changes in active runway.

7.3.9. Relay pilot weather reports to weather personnel.

7.3.10. Provide control tower orientation training for weather personnel.

7.3.11. Allow use of the tower cab, Bldg 241, as an AOS should the weather station have to be evacuated.

7.4. 43d Airlift Wing, Safety Office (43 AW/SE).

7.4.1. 43 OSS/OSW will provide, when formally tasked by 43 AW/SE through 43 OSS/DO, to provide seasonal and refresher weather briefings.

7.4.2. 43 OSS/OSW will turn over any and all weather information pertaining to an aircraft mishap or aircraft damage as requested by 43 AW/SE.

7.5. 43d Communications Squadron (43 CS).

7.5.1. 43 CS will maintain all authorized government weather sensing and display equipment. Contract equipment, is maintained by contractors (Sprint, General Dynamics, etc). The NEXRAD and AMIS are covered under government contract except for the communication lines, which are handled by 43 CS and Sprint. A description of equipment/facilities, restoration priorities, and response codes is listed in Table.5 below.

Table 5. Fixed Weather Equipment.

Equipment	Outage Priority
AN/FMQ-13 (Runway Winds)	I
AN/GMQ-34 (Cloud Height Indicator)	I, II
AN/GMQ-32 (Transmissometer)	I, II
ML658 (DBASI) *	III
AN/FMQ-8 (Temp/Dewpoint)	III
PMSV (Maintained by ground radio maintenance)	I
AMIS (LAN lines and telephone lines only)	I
WSR-88D Doppler Weather Radar PUP (Comm Lines only)	I
- Outage priority is determined by the forecaster based on the weather and current situation RESTORATION CODES: I. Immediate (1 Hour) response II. 24-Hour response III. Next Duty day response IV. As soon as possible--other work permitting during normal duty hours * Repair work/calibration performed on the ML658 is performed by PMEL	

7.5.2. Tactical weather equipment will be repaired as necessary. 43 OSS/OSW will contact METNAV to coordinate this repair.

7.5.3. Ensure that scheduled maintenance does not degrade the METWATCH performed by 43 OSS/OSW during periods of inclement weather and notify 43 OSS/OSW 4-6543 prior to performing routine maintenance.

7.5.4. 43 OSS/OSW will:

7.5.4.1. Report equipment/circuit malfunctions to the 43 CS as follows: For Air Force and contract maintained equipment/circuits, report malfunctions to the Communications Focal Point (CFP) as soon as possible. Keep the CFP informed of any equipment status changes (e.g., contract maintenance arrival; restoration action, etc.).

7.5.4.2. Provide 43 CS with the mission impact of the outage. The mission impact will be either "significant" or "minimal." The "significant" or "minimal" will equate to 43 CS "Red" or "Amber." The 43 CS will submit mission impact reports (MIREPS) through 43 CS channels for all "Red" outages. In addition, the weather flight will provide all appropriate circuitry numbers for AMIS and NEXRAD in the event of an equipment outage.

7.6. 43d Services Squadron (43 SVS).

7.6.1. None.

7.7. 43d Civil Engineer Squadron (43 CES).

7.7.1. None.

7.8. 43d Logistics Group, Maintenance Data (43 LG).

7.8.1. None.

7.9. 43d Civil Engineer Squadron, Readiness Flight (43 CES/CEX).

7.9.1. In the interest of flying safety, the disaster preparedness office will require only simulated weather station evacuation during disaster preparedness exercises.

7.9.2. 43 OSS/OSW will provide fallout winds at the request of disaster preparedness personnel.

7.9.3. 43 OSS/OSW will provide information for the computation of toxic corridor forecasts upon request of the disaster preparedness personnel in the event of a ground emergency.

8. Reciprocal Support.

8.1. General.

8.1.1. 43 OSS/OSW will provide reciprocal support the following agencies below:

8.2. Command Post (43 AW/CP).

8.2.1. None.

8.3. Airfield Operations (43 OSS/OSA).

8.3.1. Provide weather indoctrination training to newly assigned air traffic control personnel.

8.3.2. The Chief, Weather Station Operations will provide task training for tower visibility observations to the Chief, ATC Training and Standardization (TSN), and document their certification on

AF Form 3622, **Air Traffic Control/Weather Certification and Rating Record.** Upon completion of the certification training, the TSN will become the task certifier for this task, and will administer training and certification of other controllers.

8.3.3. Once the newly assigned controller has completed task training, and certification by the TSN, the Chief, Weather Station Operations will administer a written test, and document certification on the controllers AF Form 3622.

8.3.4. Initiate radio checks to ensure proper PMSV operation.

8.3.5. Notify the Control Tower if the BWS is evacuated.

8.3.6. Notify the Control Tower of long-term PMSV outages.

8.3.7. Relay weather observations, watches, advisories, and warnings whenever the AMIS system has failed.

8.4. 43d Communications Squadron (43 CS).

8.4.1. None.

8.5. 43d Airlift Wing Public Affairs Office (43 AW/PA).

8.5.1. Any off base agency requesting weather information for Pope AFB must first go through 43 AW/PA in order to request the weather information. 43 AW/PA will contact base weather with authority to release the information.

8.5.2. Coordinate tours of the base weather station by community groups and others with the Flight Commander or Chief, Weather Station Operations.

8.6. 43 Contracting Squadron (43 CONS).

8.6.1. When civilian contractors, operating on Pope AFB, request climate weather information they will be referred to Base Contracting. Base Contracting can retrieve weather information via the Weather Intranet Homepage. The web page can be found through the "POPENET" or directly through this site: **https://popenet/43OG/weather/index.html**.

8.7. Security Forces (43 SFS/CC).

8.7.1. Promptly inform the BWS of any hazardous weather reported by Security Forces personnel (Tornado, Hail, etc).

8.8. Forms Prescribed DD Form 175-1, AMC Form 181, and Flight Weather Briefing.

8.8.1. Formal weather briefings will be briefed on either DD Form 175-1, or AMC Form 181, as a local verbal weather brief. The type of briefing form used will be dependent upon the type of mission flown. All PRO Missions will be pre-filled with the agreed upon ICAOs of KAVL, KILM/KMYR, KFAY, KGSB/KISO and KNKT. If a change to the PRO mission is known ahead of time, the AC or designated representative will contact base weather as soon as possible to coordinate the change. All AM/PM TAC missions will be pre-filled with information provided from the 43 AW Flying Schedule and the 43 AW AMT. Pass any last minute changes to weather as soon as possible at 4-6543.

8.9. Weather Support to Tenant Units.

8.9.1. Weather Support for tenant units of the 43d Airlift Wing will be coordinated with 43 OSS/OSW (Weather Flight) and established (as necessary) in a Host-Tenant Support Agreement (HTSA) between the 43d Airlift Wing and the tenant unit.

8.10. Weather Support to Transient Units.

8.10.1. IAW with AFMAN 15-129, those aircraft not assigned to Pope AFB (i.e. transient aircraft), will obtain their weather support from 28 OWS. 43 OSS/OSW may provide, workload and manning permitting to provide weather support to these aircrews if 28 OWS is unable to support.

8.10.2. Aircraft, which are staging out of Pope AFB, JA/ATT missions, aircraft documented on the Air Movement Table (AMT), or previous coordination with home station weather station to pick-up support, will be provided weather support by 43 OSS/OSW.

8.10.3. IAW with AFMAN 15-129, aircraft staging out of Pope AFB during exercises such as Large Package Week (LPW) will furnish their own weather support from the wing or group designated as Lead Wing/Group. If weather personnel from the home station (Lead Wing/Group) can not send personnel due to manning shortfalls, they will contact 43 OSS/OSW and 43 OSS/DO 30 days in advance to coordinated needed support.

RICHARD CASEY, Brigadier General, USAF
Commander

ATTACHMENT 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DOD Flight Information Publication (FLIP)

Memorandum of Agreement 15-28

AFI 10-229, *Responding to Severe Weather Events*

AFI 15-114, *Weather Support Evaluation*

AFI 15-118, *Requesting Specialized Weather Support*

AFI 15-128, *Aerospace Weather Operations – Roles and Responsibilities*

AFPD 15-1, *Atmospheric and Space Environmental Support*

AMCI 15-101, *AMC Weather Operations*

AMCI 15-102, *AMC Weather Mobility Training Requirements*

AFMAN 15-111, *Surface Weather Observations*

AFMAN 15-124, *Meteorological Codes*

AFMAN 15-125, *Weather Station Operations*

AFMAN 15-129, *Aerospace Weather Operations – Processes and Procedures*

FMH 11, *Parts A - D, and AF Supplement, Parts A and D, Doppler Radar Meteorological Observation*

POPEI 11-250, *Local Flying Operating Instructions*

POPEI 33-101, *Communications Equipment Restoral Priorities*

43d Airlift Wing Base OPLAN 32-1, *Base Disaster Preparedness Operations Plan*

Abbreviations and Acronyms

ACC—Altocumulus Castellanus

ACFT MSHP—Aircraft Mishap

ACSL—Altocumulus Standing Lenticular Cloud

ADWS—Automatic Digital Weather Switch

AEROB—Airborne Environmental Release Observation

AFB—Air Force Base

AFCCC—Air Force Combat Climatology Center

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFW—Air Force Weather

AFWA—Air Force Weather Agency

AFWIN—Air Force Weather Information Network

AIREP—Air Report

ALP—Airport Location Point

ALSTG—Altimeter Setting

AMT—Air Movement Table

AMC—Air Mobility Command

AMCI—Air Mobility Command Instruction

AMIS—Advanced Meteorological Information System

AOG—Air Operations Group

AO1—Automated Station Without Precipitation Discriminator

AO2—Automated Station With Precipitation Discriminator

AOS—Alternate Observing Site

APRNT—Apparent

APRX—Approximately

ASOS—Automated Surface Observing Systems

ATC—Air Traffic Control

AUTO—Automated Report

AW—Airlift Wing

AWDS—Automated Weather Distribution System

AWN—Automated Weather Network

B—Began

BC—Patches

BKN—Broken

BL—Blowing

BR—Mist

BWS—Base Weather Station

BWW—Basic Weather Watch

C—Center (With Reference To Runway Designation)

CA—Cloud-Air Lightning

CB—Cumulonimbus Cloud

CBMAM—Cumulonimbus Mammatus Cloud

CC—Commander

CC—Cloud-Cloud Lightning

CCSL—Cirrocumulus Standing Lenticular Cloud

CES—Civil Engineer Squadron

CEX—Readiness Flight

CFP—Communications Focal Point

CG—Cloud-Ground Lightning

CHI—Cloud-Height Indicator

CIG—Ceiling

CINC—Commander In Chief

CLR—Clear

COE—Common Operating Environment

CONS—Continuous

CONS—Contracting Squadron

CONTRAILS—Condensation Trails

CONUS—Continental United States

COR—Correction to a Previously Disseminated Report

CP—Command Post

CS—Communications Squadron

CWW—Continuous Weather Watch

DD—Department of Defense

DII—Defense Information Infrastructure

DMS—Defense Message System

DO—Director of Operations

DOC—Department of Commerce

DoD—Department of Defense

DOT—Department of Transportation

DR—Low Drifting

DS—Duststorm

DSNT—Distant

DU—Widespread Dust

DZ—Drizzle

E—East, Ended

ESTMD—Estimated

EWO—Emergency War Order

FAA—Federal Aviation Administration

FC—Funnel Cloud

FEW—Few Clouds

FG—Fog

FG—Fighter Group

FIBI—Filed But Impracticable To Transmit

FIRST—First Observation After A Break In Coverage At Manual Station

FLIP—Flight Information Publication

FMH-1—Federal Meteorological Handbook No. 1, Surface Weather Observations & Reports

FROPA—Frontal Passage

FRQ—Frequent

FT—Feet

FU—Smoke

FZ—Freezing

FZRANO—Freezing Rain Sensor Not Available

G—Gust

GEN—General Type Contraction

GR—Hail

GS—Small Hail and/or Snow Pellets

hPa—Hectopascals (millibars)

HURCON—Hurricane Condition

HTSA—Host-Tenant Support Agreement

HZ—Haze

IAW—In Accordance With

IC—Ice Crystals, In-Cloud Lightning

ICAO—International Civil Aviation Organization

IFR—Instrument Flight Rules

IRC—Instrument Refresher Course

KT—Knots

L—Left (With Reference To Runway Designation)

LAST—Last Observation Before A Break In Coverage At A Manual Station

LBC—Laser-Beam Ceilometer

LPW—Large Package Week

LST—Local Standard Time

LG—Logistics Group

LTG—Lightning

LWDS—Local Weather Dissemination System

LWR—Lower

M—Minus, Less Than

MACOM—Major Army Command

MAJCOM—Major Command

MEF—Mission Execution Forecasts

METNAV—Meteorological Navigational

METAR—Aviation Routine Weather Report

MI—Shallow

MIREP—Mission Impact Reports

MOA—Memorandum of Agreement

MOV—Moved/Moving/Movement

MSL—Mean Sea Level

MT—Mountains

N—North

NM—Nautical Miles

NAS—Naval Air Station

N/A—Not Applicable

NE—Northeast

NEXRAD—Next Generation Weather Radar

NHC—National Hurricane Center

NIL—Transmitted When Report Not Ready On Time

NLT—Not Later Than

NM—Nautical Miles

NOSPECI—No SPECI Reports Are Taken At The Station

NTFS—New Tactical Forecast System

NW—Northwest

NWS—National Weather Service

OCNL—Occasional

OG—Operations Group

OVC—Overcast

OHD—Overhead

OSS—Operational Support Squadron

OSW—Weather Flight

OWS—Operational Weather Squadron

P—Greater Than

PA—Public Affairs

PC—Personal Computer

PCPN—Precipitation

PK WIND—Peak Wind

PIREP—Pilot Report

PL—Ice Pellets

PMSV—Pilot to Metro Service

PO—Dust/Sand Whirls (Dust Devils)

POPEI—Pope Instruction

PR—Partial

PRESFR—Pressure Falling Rapidly

PRESRR—Pressure Rising Rapidly

PV—Prevailing Visibility

PWINO—Precipitation Identifier Sensor Not Available

PWS—Post Weather Station

PY—Spray

R—Right (With Reference To Runway Designation)

RA—Rain

RBC—Rotating Beam Ceilometer

RCR—Runway Condition Reading

RCRNO—Runway Condition Reading Not Available

RMK—Remark

ROS—Representative Observing Site

RSC—Runway Surface Condition

RVR—Runway Visual Range

RVRNO—RVR System Not Available/No Ten Minute RVR Average Readout Capability

RWY—Runway

S—South

SA—Sand

SAFWIN—Secure Air Force Weather Information Network

SCSL—Stratocumulus Standing Lenticular Cloud

SCT—Scattered

SE—Southeast

SE—Safety

SFC—Surface

SFS—Security Forces

SG—Snow Grains

SH—Shower (S)

SKC—Sky Clear

SLP—Sea-Level Pressure

SLPNO—Sea-Level Pressure Not Available

SM—Statute Miles

SN—Snow

SNINCR—Snow Increasing Rapidly

SOF—Supervisor of Flying

SOS—Special Operations Squadron

SPECI—An Unscheduled Report Taken When Certain Criteria Have Been Met

SQ—Squall

SS—Sandstorm

SVS—Services Squadron

SW—Southwest

TAF—Terminal Aerodrome Forecast

TCU—Towering Cumulus

TEMPO - —Temporary

TS—Thunderstorm

TSN—Training and Standardization

TSNO—Thunderstorm Information Not Available

TWR—Tower

UHF—Ultra-High Frequency

UNKN—Unknown

UP—Unknown Precipitation

US—United States

UTC—Coordinated Universal Time

UTO—Universal Time Observed

V—Variable

VA—Volcanic Ash

VC—In The Vicinity

VFR—Visual Flight Rules

VIS—Visibility

VISNO—Visibility At Secondary Location Not Available

VRB—Variable

VV—Vertical Visibility

W—West

WW—Weather Warning

WMO—World Meteorological Organization

WND—Wind

WSHFT—Wind Shift

Z—Zulu, I.E., Coordinated Universal Time

Terms

28th Operational Weather Squadron (28 OWS).—Located at Shaw AFB, SC. Weather Hub for Pope AFB.

Air Force Weather Agency (AFWA).—Formerly Air Force Global Weather Center (AFGWC) at Offutt AFB, NE.

Automated Weather Distribution System (AWDS).—The primary weather communications system. It is used to disseminate all Terminal Aerodrome Forecasts (TAFs), weather observations, Pilot Reports (PIREPs), Weather Watches, Weather Warnings and Weather Advisories. Replaced early 2001 but legact

still remain on Pope AFB and Fayetteville Approach (Grannis Field).

Advanced Meteorological Information System (AMIS).—Replaced AWDS in early 2001 with new software and hardware.

Base Weather Station (BWS) or Combat Weather Team (CWT).—43 OSS/OSW, 393 Surveyor St. Suite A, Bldg 708, Pope AFB.

Basic Weather Watch (BWW).—A BWW is a weather watch conducted from the base weather station by weather personnel, who because of other weather operations duties cannot monitor the weather continuously. See Chapter 3, Observing Services, for a more detailed description.

Cooperative Weather Watch (CWW).—A program where accredited non-weather personnel assist the BWS observer in monitoring weather conditions for significant changes. At Pope AFB, the 43 OSS/OSAT, air traffic controllers, participate in the cooperative weather watch, IAW AFMAN 15-111 and Letter of Agreement.

Effective Downwind Message.—Teletype bulletin containing forecast of direction/distance nuclear fallout will travel in specific times. Provided by the weather flight, upon request.

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

Runway Visual Range (RVR).—The maximum distance of visibility, in feet, measured by fixed equipment or the counting of runway lights for take-off/landing on a specific runway.

Severe Weather.—At Pope AFB, is defined as surface winds greater than or equal to 50KT and/or ½ inch hail. This also includes all tornadic activity.

Toxic Corridor Forecasts.—Toxic Hazard corridors are not generated by the 43 OSS/OSW. 43 OSS/OSW will provide meteorological parameters (wind direction, speed, and variability) to installation disaster control agencies, as required.

Vicinity.—The area between 5 and 10 Nautical Miles (NM) from the point of observation (IAW AFMAN 15-111).

Weather Advisory (WA).—A special notice provided when an established weather condition that could affect operations has occurred. A weather advisory will only issued as an observed advisory.

Forecast Weather Warning (WW).—A special notice provided when an established weather condition of such intensity as to pose a hazard to property or life is occurring or is expected to occur.

Forecast Weather Watch.—A special notice to alert of the potential development of lightning, tornadoes, severe thunderstorms, and winter storms.

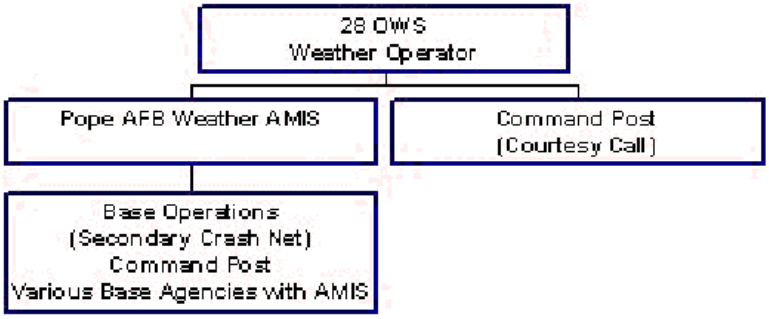
Lead-Time.—Time from issuance of weather watches and warnings to the time of occurrence. Aviation Routine Weather Reports (METAR). METAR is a routine scheduled observation as well as the primary observation code used by the United States to satisfy requirements for reporting surface meteorological data. METAR contains a report of wind, visibility, runway visual range, present weather and obscurations, sky condition, temperature, dew point, and altimeter setting collectively referred to as "the body of the report." In addition, coded and/or plain language information, which elaborate, on data in the body of the report may be appended to the METAR. This significant information can be found in a section referred to as "Remarks." The contents of the remarks will vary according to the type of weather station.

ATTACHMENT 2

WEATHER WATCH, WARNING, AND ADVISORY NOTIFICATION SYSTEM

A2.1. Due to limited staffing and the time-critical nature of this information, 28 OWS personnel cannot individually notify every agency requiring weather watches, warnings, and advisories; hence, the application of a notification chain that exploits installation command and communications channels. Procedures developed to this end ensure weather personnel do not spend more time communicating than monitoring weather conditions. All units receiving these weather products must be involved in a continuous program of evaluation and improvement of the weather dissemination system, including inter-unit dissemination. Agencies must make certain that weather dissemination procedures ensure those needing information receive it. Individual commanders of units in need of weather information are responsible for having their units listed in the notification chain that follows.

28 OWS To Pope AFB Notification Chain



ATTACHMENT 3

TERMINAL AERODROME FORECAST (TAF) AND AMENDMENTS

A3.1. General: The TAF is the official forecast for Pope AFB. The forecast will cover a 24-hour period issued every 8 hours at 0400L, 1200L and 2000L. The forecast will be transmitted by 28 OWS via AWDS/AMIS. The forecast will be transmitted NLT 15 minutes after the valid time.

A3.1.1. Specification Criteria: The TAF will specify time of occurrence to the nearest hour, duration, and intensity, when one or more of the following weather elements are expected to occur within the valid period of the forecast.

A3.2. An increase in ceiling or visibility to a condition equal to or greater than, or a decrease in ceiling or visibility to a condition lower than:

A3.2.1. Ceiling:

3,000 feet
1,500 feet
1,000 feet
700 feet
500 feet
300 feet

A3.2.2. Visibility:

3 statute miles
2 statute miles
1 ½ statute miles
1 statute mile
¾ statute mile

A3.2.3. A change in wind speed of 10 knots or more, or a change in direction of greater than 30 degrees when the predominant wind speed (including gusts) is expected to be over 15 knots.

A3.2.4. Precipitation.

A3.2.5. All established weather warning and advisory criteria.

A3.2.6. Icing and/or turbulence not associated with thunderstorms from surface to 10,000 feet (MSL). (Turbulence forecasts will be based on Category II aircraft.)

A3.2.7. Thunderstorms.

A3.2.8. Non-convective low-level wind shear.

A3.3. Amendment Criteria.

A3.3.1. Forecasters may amend the TAF any time 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 forecast conditions.

A3.3.2. Forecasters will amend the TAF:

A3.3.2.1. When an unforecast change is expected to occur, or is expected to last more than 30 minutes and is not correctly forecast by the next whole hour.

A3.3.2.2. When an unforecast change occurs is expected to last at least 30 minutes and is not forecast by the next whole hour from the time of occurrence.

A3.3.2.3. When a forecast condition does not occur by the specified hour and is not expected to occur within the next 30 minutes.

A3.3.2.4. Temporary (TEMPO) groups will be amended when they become predominant.

A3.3.2.5. Amendments will be valid for the period starting at the whole hour prior to the amendment, and will cover the remaining time of the original forecast.

A3.3.3. Amend for the following criteria:

A3.3.3.1. A predominant out of category ceiling/visibility condition:

Ceiling/Visibility Categories	
D	Cig/Vis $\geq$ 3,000 ft/3 miles
C	< 3,000 ft/3 miles to 1,000 ft/2 miles
B	< 1,000 ft/2 miles to 300 ft / ¾ mile
A	< 300 ft/ ¾ mile
NOTE: Ceiling/visibility categories are determined by the lowest of the ceiling or visibility. For example, a ceiling of 2,500 ft and a visibility of one mile is category B.	

A3.3.3.2. A forecast wind speed error of 10 knots or more.

A3.3.3.3. A wind direction error of greater than 30 degrees when the predominant wind speeds or gusts are, or are forecast to be in excess of 15 knots.

A3.3.4. Weather Warning / Advisory Criteria:

A3.3.4.1. Occurs or is expected to occur during the forecast period but was not specified in the forecast.

A3.3.4.2. Was specified in the forecast but is no longer expected to occur during the forecast period.

A3.3.4.3. Valid times of all warning criteria will match TAF exactly for representativeness.

A3.3.4.4. Moderate or greater icing and/or turbulence not associated with thunderstorms from surface to 10,000 ft above MSL not specified in the forecast.

A3.3.4.5. Any condition deemed unrepresentative by the forecaster.

A3.3.4.6. Non-convective Low Level Wind Shear.

ATTACHMENT 4

SPECIAL AND LOCAL CRITERIA

A4.1. General: The following is a list of criteria to aid the duty observer in determining whether a local or special observation is required.

A4.1.1. Take and disseminate a special observation when the following criteria is/are met:

A4.1.1.1. When ceiling or visibility decreases to less than or, if below, increases to equal or exceed:

Ceiling	Source		Visibility	Source
3000’	AFMAN 15-111		3 miles	AFMAN 15-111
------	--------		2 1/2 miles	FLIP
1500’	AFMAN 15-111		2 miles	AFMAN 15-111 AND FLIP
1000’	AFMAN 15-111		1 3/4 miles	FLIP
			1 1/2 miles	FLIP
700’	FLIP AND AFMAN 15-111		1 1/4 miles	FLIP
600’	FLIP		1 mile	AFMAN 15-111 AND FLIP
500’	FLIP AND AFMAN 15-111		1/2 mile	FLIP
200’	AFMAN 15-111 and FLIP		--------	--------

A4.1.1.2. When a layer of clouds and/or obscuring phenomena aloft is observed below 700’ and not reported in previous observation.

A4.1.1.3. When tower visibility is reported at less than 4 miles and changes by one or more reportable values. Include the remark “TWR VSBY” and the value when surface or tower visibility is less than 4 miles (IAW AFMAN 15-111 para. 2.7.10)

A4.1.1.4. Tornado or funnel cloud is observed, disappears.

A4.1.1.5. Thunderstorm begins or ends.

A4.1.1.6. Precipitation:

A4.1.1.6.1. Hail begins or ends.

A4.1.1.6.2. Freezing precipitation or ice pellets begin, end, or change in intensity.

A4.1.1.6.3. Any other type of precipitation begins or ends. Note that, except for freezing rain, freezing drizzle, hail, and ice pellets, a special observation is not required for changes in type or the beginning or ending of one type while another is in progress.

A4.1.1.7. Winds and Wind Shifts:

A4.1.1.7.1. Squall. A strong wind characterized by a sudden onset in which the windspeed increases at least 16 knots and is sustained at 22 knots or more for at least one minute.

A4.1.1.7.2. Wind Shift: Wind direction changes 45 degrees or more in less than 15 minutes and is sustained at 10KT or more throughout the windshift.

A4.1.1.7.3. Runway conditions. Upon receipt from Base Operations, append to hourly or special observation.

A4.1.1.7.4. Tower visibility: Upon receipt of a reportable tower visibility value, when either tower or weather visibility is less than 4 miles (1600 meters), transmit a special observation with the tower visibility as a remark.

A4.1.1.7.5. Real-World Nuclear Accident. When notified of a real-world nuclear accident, take and disseminate (locally and longline) a special observation. Append the remark "AEROB" as the last remark on the longline disseminated observations.

A4.1.1.7.6. Volcanic Ash. When first observed.

A4.1.1.7.7. The weather observer deems a special observation would be beneficial to airfield operations.

A4.1.1.7.8. Upon resuming service (e.g. after evacuation, temporary service stoppage, etc).

A4.1.1.7.9. RVR is observed to decrease to less than, or if below, increase to equal or exceed 2400 feet.

A4.2. Take and disseminate a local observation when any of the following criteria are met:

A4.2.1. Aircraft mishap (within 25 NM of the airfield). Take a full element local observation when notified or upon first sighting when no hourly or record special has been taken.

A4.2.2. Altimeter change. Take a single element local observation within 35 minutes if there is a change of .01 or more.

A4.2.3. RVR. Take a single element local observation when visibility conditions are first observed and when the conditions are observed to no longer exist. RVR for the active runway is observed to decrease to less than or, if below, increase to equal or exceed:

RVR	SOURCE
6000'	AFMAN 15-111 AND FLIP
5000'	AFMAN 15-111 AND FLIP
4000'	FLIP

A4.2.4. Runway change. Change equipment, wait 10 minutes, then take a full element local.