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TINKER AIR FORCE BASE

TINKER AIR FORCE BASE
INSTRUCTION 15-101

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Weather

WEATHER SUPPORT DOCUMENT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Air Force Weather Operations*, Air Force Strategic Plan on Weather Reengineering, Air Force Manual (AFMAN) 10-206, *Operational Reporting*, TAFBI 10-229, *Release Of Personnel Due To Hazardous Weather Or Emergency Conditions*, AFI 15-128, *Air Force Weather Roles and Responsibilities*, DAFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, AFMAN 15-111, *Surface Weather Observations*, AFMAN 15-124, *Meteorological Codes*, DAFMAN 15-129, *Air and Space Weather Operations*. It establishes responsibilities and weather support procedures. It also provides general information for weather services, including weather observations and forecasts, weather warnings, watches, and advisories; space weather data, information dissemination, and base-wide reciprocal support. It applies to units assigned to the 72d Air Base Wing (72 ABW), Air Force Sustainment Center (AFSC/AFMC), the 552d Air Control Wing (552 ACW), the 507th Air Refueling Wing (507 ARW), the 513th Air Control Group (513 ACG), 10th Flight Test Squadron (FLTS) and STRATCOMMWING ONE (SCW-1) (USN). It does not apply to Air Force Reserve Command (AFRC) and Air National Guard (ANG) units, except where noted otherwise. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program*, and disposed of in accordance with the Air Force Records Information System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but

all direct supplements must be routed to the OPR of this publication for coordination prior to certification and approval.

SUMMARY OF CHANGES

This instruction has been rewritten and must be reviewed in its entirety.

Chapter 1

WEATHER FLIGHT SERVICES AND RESPONSIBILITIES

1.1. General. The 72d Operations Support Squadron Weather Flight (72 OSS/OSW) is the official weather information agency for Tinker Air Force Base, Oklahoma. The 72 OSS/OSW provides weather information in support of the 72d Air Base Wing (72 ABW), Air Force Sustainment Center (AFSC), the Oklahoma City Air Logistics Complex (OC-ALC), the 552d Air Control Wing (552 ACW), the 507th Air Refueling Wing (507 ARW), 513th Air Control Group (513 ACG), 10th Flight Test Squadron (10 FLTS) and STRATCOMMWING ONE (SCW-1) (USN). The 72 OSS/OSW is commonly referred to as the weather flight (WF) and is the local focal point for all weather-related support to Tinker AFB and its mission partners. This instruction will be reviewed and revised at a frequency not less than biennially or IAW with host/parent unit procedures if the time is less than biennially.

1.1.1. The 72 OSS/OSW uses DD Form 175-1, *Flight Weather Briefing* and the Mission Execution Forecast Process (MEFP) to tailor weather products to provide decision-quality environmental information for mission planning and execution for their supported unit. WF personnel will understand their unit's mission, tactics, and capabilities in order to better anticipate, exploit and integrate weather information. WF personnel are also responsible for direct interface with Air Traffic Control (ATC), Operations Centers, the servicing Operational Weather Squadron (OWS), and other operational users in the supported unit.

1.2. Concept of Operations.

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

1.2.2. The 72 OSS/OSW is the primary source of tailored weather services in support of the 72 ABW, AFSC, OC-ALC, 552 ACW, 507 ARW, 513 ACG, 10 FLTS, STRATCOMMWING ONE (SCW-1) (USN), subordinate units, local headquarters elements, and transient aircrews. 72 OSS/OSW will make every effort to anticipate and mitigate mission-limiting weather, and to maximize safety and resource protection.

1.3. Responsibilities.

1.3.1. General responsibilities of the Weather Flight (WF) are outlined in AFI 15-128.

1.3.1.1. The 72 OSS/OSW will create Mission Weather Products (MWPs) that fuse theater scale products with local mission requirements to enable the direct inject of weather impacts into warfighter planning and execution. 72 OSS/OSW's local MWPs consist of Terminal Aerodrome Forecasts (TAFs), Takeoff and Landing Data (TOLD), planners, verbal briefings, and DD Form 175-1s, *Flight Weather Briefing*. 72 OSS/OSW will also provide flight weather briefings for transient aircrews IAW 72 OSS/OSW duty priorities listed in **Table 1.1**.

1.3.1.2. The 72 OSS/OSW issues all observed/forecast watches, warnings and advisories (WWAs), with the exception of NWS flood and fire WWA's, during normal operations.

1.3.1.3. The 26 OWS may provide flight weather briefings to transient aircrews passing through Tinker AFB as requested. The 26 OWS also disseminates National Weather Service (NWS) flood and fire WWA's. The 26 OWS will issue observed and forecast watches, warnings and advisories for 72 OSS/OSW during continuity of operations (COOP) as outlined in **para 1.7** of this instruction.

1.4. Tinker AFB Installation Data Page.

1.4.1. The 26 OWS will coordinate and maintain a Tinker AFB Installation Data Page (IDP) detailing TAF specification and amendment criteria, WWA thresholds, desired lead times, mission impacts, unit information, Joint Environmental Toolkit (JET) back-up contacts and local outage back-up information. 72 OSS/OSW is responsible for communicating changes to information held in the IDP to the 26 OWS.

1.5. Duty Priorities. IAW DAFMAN 15-129, 72 OSS/OSW duty priorities are as follows:

1.6. 72OSS/OSW Duty Priority Listing.

Table 1.1. 72OSS/OSW Duty Priority Listing.

Priority	Duties
1	Wartime Defense of the Duty Site/Location
2	Perform Emergency War Order (EWO) Taskings (e.g. Deploy Personnel)
3	Execute WF Evacuation
4	Respond to Aircraft/Ground Emergencies
5	Respond to Pilot-to-Metro Service (PMSV) Contacts
6	Provide Resource Protection Weather Watches, Warnings, and Advisories (WWAs)
7	Perform Severe Weather Action Procedures (SWAP) Operations
8	Augment AN/FMQ-19 Automated Meteorological Observing System (AMOS) Observation for Mandatory Elements
9	Disseminate Urgent Pilot Reports (PIREPs) and Special Air Reports (AIREPs) Locally
10	Mission Execution Forecast Process – Produce and Disseminate
11	Disseminate Terminal Aerodrome Forecasts (TAFs)
12	Disseminate Routine PIREPs Locally
13	Transmit Surface Observations and All PIREPs/AIREPs Longline
14	Perform MISSIONWATCH
15	Provide Staff Weather Briefings
16	Provide Non-Standard Weather Products, Information, and Weather Briefings
17	Perform Weather Functional Training
18	Accomplish Administrative Tasks

1.7. Hours of Operation and Contact Information.

1.7.1. Normal airfield and mission services hours of operation are 24 hours a day, 7 days a week, 365 days a year.

1.7.2. **Contact Information**

1.7.2.1. **WF** Comm: (405) 734-3196/3540/3860/5477/3493 / DSN: (312) 884-3196/3540/3860/5477/3493

1.7.2.2. **WF AOL** Comm: (405) 734-3196/3529 / DSN: (312) 884-3196/3529

1.7.2.3. **PMSV 261.025** UHF

1.8. Continuity of Operations Plan (COOP). Weather support to Tinker AFB is susceptible to communication outages.

1.8.1. **WF COOP and WF Alternate Operating Location (AOL).** In the event of a building evacuation, 72 OSS/OSW will move to the alternate operating location at building 1027, Comm (405) 734-3196/3529 or DSN (312) 884-3196/3529. WF members will follow duty-specific standard operating procedures (SOPs) and evacuation checklists (including a list of required back-up equipment) and resume services at the AOL as soon as possible. The flight will continue operational 72 ABW support.

1.8.1.1. The status of specific WF services/support is dependent upon communication line status, equipment status, etc. Expect most services to be somewhat degraded (weather products, pilot briefings, etc.) due to limited infrastructure and loss of dedicated data services, including sensors and various data types (meteorological satellite imagery, radar imagery, etc.). In the event of relocating to the AOL, the 552 ACW/CP will be responsible for sounding the warning sirens (see **para 4.4.1.4** of this publication). For flight safety reasons, 72 OSS/OSW will not evacuate during exercises; however, every member of 72 OSS/OSW will perform an AOL evacuation annually to maintain certification. See **Attachment 9** for location of primary and alternate operating locations.

1.8.1.2. If 72 OSS/OSW experiences a full communication/electrical outage (network, phone, cell phone, power), the 26 OWS will take full responsibility for all WWAs, TAFs, and flight weather briefings until the outage can be corrected or overcome. ***NOTE:*** Further actions, dependent upon the severity and duration of the outage, will be taken by the 72 OSS/OSW flight leadership and 26 OWS leadership in cooperation as required.

Chapter 2

AIRFIELD SUPPORT FUNCTION

2.1. General. The Airfield Support Function consists of three parts: **weather observing, meteorological watch, (**Terminal Aerodrome Forecasts, Cooperative Weather Watch with Air Traffic Control, and Pilot-to-Metro Service) and **resource protection** (responding to aircraft mishaps, and Weather Watches, Warnings and Advisories).

2.2. Observations. Observations are taken, recorded, and disseminated IAW AFMAN 15-111, *Surface Weather Observations*, utilizing the AN/FMQ-19 Automated Meteorological Observing System (AMOS). During standard operations the AN/FMQ-19 continually senses and measures the atmosphere and disseminates observations with weather technician oversight. At times, it is necessary for a weather forecaster to augment the system. Automated and augmented processes are outlined in **para 2.2.7** of this instruction. 72 OSS/OSW creates and disseminates the following weather observation types:

2.2.1. **Aviation Routine Weather Report (METAR).** METAR contains a complete 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, encoded and/or plain language information that elaborates on data in the body of the report may be appended to the METAR. METARs are disseminated hourly both locally and longline between 55 and 59 minutes after the hour.

2.2.2. **Aviation Selected Special Weather Report (SPECI).** SPECI is an unscheduled observation completed and transmitted when any of the Tinker AFB special criteria listed in **Attachment 2** have been observed or sensed. SPECI will contain all data elements found in a METAR plus additional remarks that elaborate on data in the body of the report. All SPECI reports will be prepared and transmitted as soon as possible after the relevant criteria are observed. **Attachment 4** contains an example SPECI weather observation.

2.2.3. **Aviation Selected Local Weather Report (LOCAL).** A LOCAL is an unscheduled observation, reported to the nearest minute, not meeting SPECI criteria. A LOCAL will only be taken when local leadership determines there is a requirement in support of local operations or OPSEC considerations. During augmentation, WF will take LOCAL altimeter setting observations at an interval not to exceed 35 minutes when there has been a change of 0.01 inch Hg (0.3 hPa) or more since the last altimeter setting value. A METAR or SPECI taken within the established time interval will meet this requirement. All LOCAL altimeter setting reports will be prepared and disseminated as soon as possible after the relevant altimeter setting change is observed.

2.2.4. **Official Observing Points.** During normal operations, the Tinker AFB official weather observing point coincides with the location of the FMQ-19 sensors (See **Attachment 8**). When a weather technician is augmenting the FMQ-19, the observation point is approximately 125 feet away from the southeast side of building 240 near the end of the red carpet. Since building 240 obscures a significant portion of the horizon, the secondary observation point is approximately 125 feet away from the northwest side of the building. During AOL operations, when augmentation is required, the official observation point is approximately 125 feet away from the north side of building 1027. Due to the limited availability of visibility markers at this location, the secondary observation point is approximately 125 feet away from the south side of the building.

2.2.5. **Observing Point Limitations.**

2.2.5.1. The FMQ-19 is properly sited and no limitations are currently noted.

2.2.5.2. Augmented observations taken at the primary augmentation site (Building 240) are degraded not only because the observer's view to the north through west is blocked by the building, but also because airfield noise may impede the hearing of thunder. Augmented observations require the weather technician to traverse to the opposite side of the building to evaluate the horizon completely and monitor conditions such as lighting within 5 nautical miles (NM) of the airfield or hail falling on station to effectively observe thunderstorms.

2.2.5.3. Augmented observations taken at the AOL are degraded because the view is blocked to the south by building 1027 and thunder may not be heard due to airfield noise. As with augmented observations at the primary augmentation site, augmenting at the AOL requires the weather technician to traverse to the opposite side of the building to evaluate the horizon completely, and monitor conditions such as lighting within 5 NM of the airfield or hail falling on station to effectively observe thunderstorms.

2.2.6. **Automated FMQ-19 Observation.** An automated observation is any observation having been evaluated, prepared, and transmitted by an observing system without human intervention. In automated mode, the FMQ-19 observing system will record and disseminate weather observations automatically. The FMQ-19 uses time averaging of sensor data. In an automated observation, sky condition will be an evaluation of sensor data gathered during the 30-minute period ending at the actual time of the observation. All other elements evaluated are based on sensor data that is within 10 minutes or less of the actual time of the observation.

2.2.7. **FMQ-19 Augmentation.** Augmentation is the process of having a position-qualified weather technician manually add or edit data to an observation generated by a properly sited AMOS. The two augmentation processes are **supplementing** and **back-up**.

2.2.7.1. Supplementing is a method of manually adding meteorological information to an automated observation that is beyond the capabilities of the AMOS to detect and/or report. For example, the sensor cannot sense a tornado or hail.

2.2.7.2. **Supplementing procedures.** Weather personnel will supplement observations when they observe and/or forecast weather conditions in **Table 2.1** to occur within 1 hour. Weather technicians will supplement observations when a tornado watch is valid or warning has been issued for tornadic activity. This does not relieve weather personnel of their Severe Weather Action Plan (SWAP) responsibilities to respond to severe weather events during non-duty hours in accordance with **para 3.8** of this instruction. Weather personnel will continue to have a SWAP in place to respond to severe weather threats.

Table 2.1. Mandatory Supplementary Conditions Taken from AFMAN 15-111.

Tornado (+**FC**) (**Notes** 1 & 2)
Waterspout (+**FC**) (**Notes** 1 & 2)
Funnel Cloud (**FC**) (**Notes** 1 & 2)
Freezing Precipitation (**FZDZ/FZRA**)
Ice Pellets (**PL**)
Hail (**GR**)
Sandstorm (**SS**)/Dust Storm (**DS**) (Note 3)
Volcanic Ash (**VA**)
Tower Visibility remark (Note 4)
Notes: 1. The immediate reporting of tornadic activity takes precedence over all other phenomena. 2. Be prepared to supplement whenever a tornado watch is valid or warning has been issued; regardless of airfield clousure status. 3. Based on local weather warning criteria; if no warning criteria exists, this is not required. 4. Only required during controlled airfield hours.

2.2.7.3. **Back-up is the method of manually providing meteorological data and/or dissemination to an AMOS observation when the primary automated method is not operational or unavailable due to sensor and/or communication failure.** Except for some automated remarks, back-up refers to weather personnel providing the same reporting capability as that provided by the AMOS.

2.2.7.4. **Back-up procedures.** In the event of FMQ-19 malfunction or failure, weather personnel will implement back-up procedures only during airfield operating hours except when elements triggering weather warnings are erroneously observed by the FMQ-19, or with freezing precipitation IAW AFMAN 15-111, *Surface Weather Observations*. Technicians will use alternate observing procedures when performing back-up operations.

2.3. Terminal Aerodrome Forecast (TAF) Support. 72 OSS/OSW produces and disseminates Tinker AFB TAFs IAW AFI 15-128, AFMAN 15-124, DAFMAN 15-129, and the Tinker AFB Installation Data Page. TAFs are valid for 30 hours and describe the area within 5 NM of the Tinker AFB airfield complex. TAFs are issued at 0200, 1000, and 1800 Zulu time during Local Standard Time and 0100, 0900, and 1700 Zulu time during Daylight Saving Time. **Attachment 3** lists forecast specification and amendment criteria, while **Attachment 4** lists examples of Tinker AFB TAFs.

2.4. Cooperative Weather Watch (CWW). The CWW is a program in which the WF partners with other base agencies to maximize weather situational awareness. The program includes Air Traffic Control (ATC), flying squadrons, and the 72d Security Forces Squadron (72 SFS) and is in place to ensure accurate weather conditions are reported. Under the CWW, the weather technicians will re-evaluate weather conditions whenever a reliable source (e.g., ATC, or Security Forces) reports weather conditions differing from the current observation.

2.4.1. Reliable sources will notify the WF when any of the following are seen to occur within 5 miles of Tinker airfield and are not being reported:

2.4.1.1. Tornado or funnel cloud is observed or disappears.

2.4.1.2. Hail begins or ends.

2.4.1.3. Thunder or lightning.

2.4.2. Weather certified ATC personnel will also notify the WF when any of the following occur:

2.4.2.1. Visibility decreases to less than or increases to equal or exceed four miles. If Tower Visibility is less than 4 miles, report changes in tower visibility and sector visibility to the WF.

2.4.2.2. Precipitation begins or ends.

2.4.2.3. Any other meteorological situation exists that, in the opinion of the air traffic controller, is critical to safety of flight.

2.4.2.4. Active runway changes.

2.4.2.5. Inform WF of runway light setting changes when runway visual range (RVR) observations are required.

2.4.3. Flying Squadron personnel will relay PIREPs to the WF directly or through telephone, PMSV, or ATC Tower.

2.4.3.1. ATC will obtain pilot weather reports (PIREPs) when conditions warrant, or upon request, and relay the reports to the WF within 5 minutes of receipt, unless higher priority duty exists.

2.4.4. In addition to CWW support ATC will also:

2.4.4.1. Provide indoctrination training for weather personnel, as requested.

2.4.4.2. Respond to WF requests for radio checks of the Pilot-to-Metro Service (PMSV) frequency 261.025 UHF and provide back-up to PMSV contacts when the WF PMSV is out of service.

2.4.4.3. Give weather personnel sufficient time to switch over appropriate weather sensors if an observation on an inactive runway is required.

2.4.4.4. Complete ATC Limited Observation Training. The 72 OSS/OSW oversees the Tinker AFB Limited Observation Training Program. ATC personnel requiring training should contact 72 OSS/OSW NCOIC at DSN (312) 884-3860/Commercial (405) 734-3860 or Ops Counter at DSN (312) 884-3196/Commercial (405) 734-3196 to schedule an appointment. To satisfy Limited Observation Training requirements, personnel must receive an orientation of the weather facilities, attend a weather observer briefing, complete the Weather Familiarization training and earn certification on observing procedures.

2.5. Pilot-to-Metro Service (PMSV) Support. Weather information is available via PMSV during duty hours on UHF frequency 261.025. The duty forecaster will monitor PMSV traffic for all aircraft contacts IAW duty priorities in **Table 1.1** of this instruction. For aircraft outside the range of the Tinker AFB PMSV system, 72 OSS/OSW or 26 OWS can provide PMSV support through a phone patch to the 552 ACW/CP (DSN (312) 884-7313 COMM (405) 734-7313). **Para 5.3.2** of this instruction addresses PMSV outages and procedures.

2.6. Resource Protection (RP) Support and Watches, Warnings, and Advisories (WWAs). The 72 OSS/OSW is responsible for the issuance of all forecasts and observed watches, warnings and advisories, with the exception of National Weather Service (NWS) flood and fire WWA's. The 26 OWS is responsible for mirroring on their website any NWS flood and fire WWA's that may impact Tinker AFB. Special Weather Statements (SWS) are special notices provided by the 26 OWS. These products result from both the forecast and METWATCH processes to assist military decision makers with resource and RP decisions. Watches and warnings provide notice of weather events posing a hazard to life or property. Advisories provide specific notice to an operational agency of environmental phenomena with the potential to impact operations. Supported unit responses to WWAs are listed in **Attachment 6**.

2.6.1. **Special Weather Statements (SWS).** SWSs are resource protection products issued by the 26 OWS to provide advance notice of widespread hazardous weather conditions that have the potential to affect military installation(s).

2.6.2. **Weather Watches.** A Weather Watch is a special notice to installation personnel and supported units of a **potential** for environmental conditions of such intensity as to pose a hazard to life or property. They are used by installation personnel/supported units to make force protection and risk management decisions. Watches are issued for a 5 NM radius of the center point of the Tinker AFB runway complex. Weather technicians will cancel watches when they are no longer occurring and are not expected to reoccur within the forecast timeframe of the Weather Watch, with the exception of the Lightning Watch, will only be canceled when the potential for lightning no longer exists within the next 30 minutes. Watches are defined in **Table 2.2**.

Table 2.2. Weather Watches.

Watch Type	Criteria	Desired Lead Time
Tornado	Potential for a Tornado / Funnel Cloud (detected by radar or visually observed) AND threatening Tinker AFB	2 hours
Severe Thunderstorm	Potential for Damaging Winds GTE; 50 knots associated with thunderstorms and/or Damaging Hail GTE ¾ inch	2 hours
Moderate Thunderstorm	Potential for High Winds GTE 35 knots and less than severe criteria associated with thunderstorms and/or Large Hail GTE ¼ inch and less than severe criteria	2 hours
Damaging Winds	Potential for Surface Winds not associated with Thunderstorms GTE 50 knots	2 hours
Strong Winds	Potential for Surface Winds not associated with Thunderstorms GTE 35 knots and less than severe threshold	2 hours
Freezing Precipitation	Potential for liquid precipitation of any type and intensity that freezes on contact and produces glaze ice on exposed surfaces	3 hours
Heavy Snow	Potential for Heavy Snow with new snowfall accumulation greater than or equal to 2 inches within 12 hours	3 hours
Lightning	Potential for Lightning within 5 NM	30 minutes
Fire Weather Watch	Issued when dry vegetation and conditions favoring extreme fire danger are expected 12 to 72 hours in the future.	As Required
Flash Flood Watch	Issued generally when there is the possibility of flash flooding or urban flooding over an area within the next 36 hours	As Required
Flood Watch	Issued when there is the possibility of widespread general flooding over an area within the next 36 hours	As Required

2.6.3. **Weather Warnings.** A Weather Warning is a special notice to notify installation personnel when an established weather condition of such intensity as to pose a hazard to life or property **is occurring or is expected to occur**. Weather warnings provide concise information outlining environmental threats and are used by commanders and personnel to make RP decisions and take protective action. Warnings are issued for a 5 NM radius at the center point of the runway, unless otherwise specified, and are defined in **Table 2.3**.

Table 2.3. Weather Warnings.

Warning Type	Criteria	Desired Lead Time
Tornado	Tornado / Funnel Cloud (detected by radar or visually observed) AND threatening Tinker AFB	10 minutes
Severe Thunderstorm	Damaging Winds GTE 50 knots associated with thunderstorms and/or Damaging Hail GTE ¾ inch	1 hour
Moderate Thunderstorm	High Winds GTE 35 knots and less than severe criteria associated with thunderstorms and/or Large Hail GTE ¼ inch and less than severe criteria	1 hour
Damaging Winds	Surface Winds not associated with Thunderstorms GTE 50 knots	1 hour
Strong Winds	Surface Winds not associated with Thunderstorms GTE 35 knots and less than severe threshold	1 hour
Freezing Precipitation	Liquid precipitation of any type and intensity that freezes on contact and produces glaze ice on exposed surfaces	1 hour
Heavy Snow	Heavy Snow with new snowfall accumulation greater than or equal to 2 inches within 12 hours	2 hours
Lightning	Lightning within 5 NM	Observed
Red Flag Fire Warning	Issued when dry vegetation and conditions favoring extreme fire danger are expected, generally within 24 hours.	As Required
Flash Flood Warning	Issued when flash flooding is imminent, generally within the next 1 to 3 hours. Usually issued based on observed heavy rainfall (measured or radar estimated).	As Required

2.6.4. **Observed Weather Warnings.** The Weather Warning for lightning occurring within 5 NM is the only observed warning issued for Tinker AFB, and it extends 5 NM in all directions from the airfield. The lightning warning is not issued until lightning is observed, either visually or via the National Lightning Detection Network. The lightning warning remains valid until lightning has not been observed within 5 NM for 15 minutes. Exception: A lightning warning will not be cancelled if a thunderstorm is within 5 NM (as indicated on radar).

2.6.5. **Weather Advisories.** A weather advisory is a special product notifying an end user when an established environmental condition affecting operations is occurring or is expected to occur on Tinker AFB. Observed weather advisories will remain valid at the discretion of the weather technician until the criterion is no longer occurring, has not occurred in the last 15 minutes, and is no longer forecast to occur. Tinker AFB advisories are defined in **Table 2.4**.

Table 2.4. Weather Advisories.

Criteria	Forecast/ Observed	Desired Lead Time
Forecast Snow Accumulation (GT Trace but LT 2 Inches in 12 Hours)	Forecast	2 hours
Ceiling or Visibility LT 300 ft /or 1 mile	Observed	Observed
Low-Level Wind Shear (LLWS)	Observed	Observed
Crosswinds GTE to10 knots on WR	Observed	Observed
Crosswinds GTE to 15 knots on WR	Observed	Observed
Crosswinds GTE to 15 knots	Observed	Observed
Crosswinds GTE to 25 knots	Observed	Observed
Crosswinds GTE to 35 knots	Observed	Observed
Frostbite Risk Level Low: LT 37F but GTE -18F	Observed	Observed
Frostbite Risk Level High: LTE -18F but GT-32F	Observed	Observed
Frostbite Risk Level Severe: LTE -32F but GT -52F	Observed	Observed
Frostbite Risk Level Extreme: LTE -52F	Observed	Observed
Observed conditions for Induction icing exist at Tinker AFB Temp < 07C but > M07 with RH > 70%	Observed	Observed
Observed Lightning/Thunderstorms is occurring 10 nm w/in 10 nm of Tinker AFB	Observed	Observed
Flood Advisory-flooding is imminent or occurring, generally within the next 1 to 3 hrs, but is not expected to substantially threaten life and property	Forecast	As Required

2.7. Dissemination Process.

2.7.1. **Observations.** Observations taken by either the FMQ-19 automated observing system or with back-up equipment are disseminated via JET. If JET is non-operational, 72 OSS/OSW will relay observations via the Air Force Weather – Web Services (AFW-WEBS). The on-duty technician will ensure receipt of the initial AFW-WEBS observation via telephone to each of the agencies listed in **Table 2.5**. If each agency has received the observation, the technician will continue to use AFW-WEBS to disseminate observations for the duration of the outage. If not, the technician will relay every observation via telephone to the agencies in order of priority listed in **Table 2.5** for the duration of the outage.

2.7.2. **Terminal Aerodrome Forecasts (TAFs).** 72 OSS/OSW disseminates TAFs via JET. If JET is non-operational, 72 OSS/OSW will relay TAFs via AFW-WEBS. The on-duty technician will ensure receipt of the initial AFW-WEBS TAF via telephone to each of the agencies listed in **Table 2.5**. If each agency has received the observation, the technician will continue to use AFW-WEBS for subsequent TAFs for the duration of the outage. If not, the technician will relay every observation via telephone to the agencies in order of priority listed in **Table 2.5** for the duration of the outage.

2.7.3. **Special Weather Statements (SWS) Dissemination.** SWSs provide advance notice of widespread hazardous weather conditions that have the potential to affect Tinker AFB. 26 OWS posts SWSs to the 26 OWS webpage. 72 OSS/OSW leadership will forward tailored information from the SWSs to Tinker AFB senior leadership, as required.

2.7.4. **Watches, Warnings, and Advisories (WWA).** 72 OSS/OSW will enter WWAs into JET (with the exception of NWS Flood/Fire WWAs, which will be entered by the 26 OWS), which disseminates the information to ATC, 552 ACW/CP, 72 OSS/OSAA, 507 ARW/CP, 10 FLTS, and SCW-1. If JET is non-operational, 72 OSS/OSW will notify via telephone in accordance with the pyramid notification scheme shown in **Figure 2.1**. In addition, the 552 ACW/CP disseminates all WWAs via email, LMRs, or AtHoc.

2.7.4.1. **Lightning Warnings.** All lightning warnings are disseminated by the 552 ACW/CP to the base populace via email, LMRs, the Giant Voice, and AtHoc.

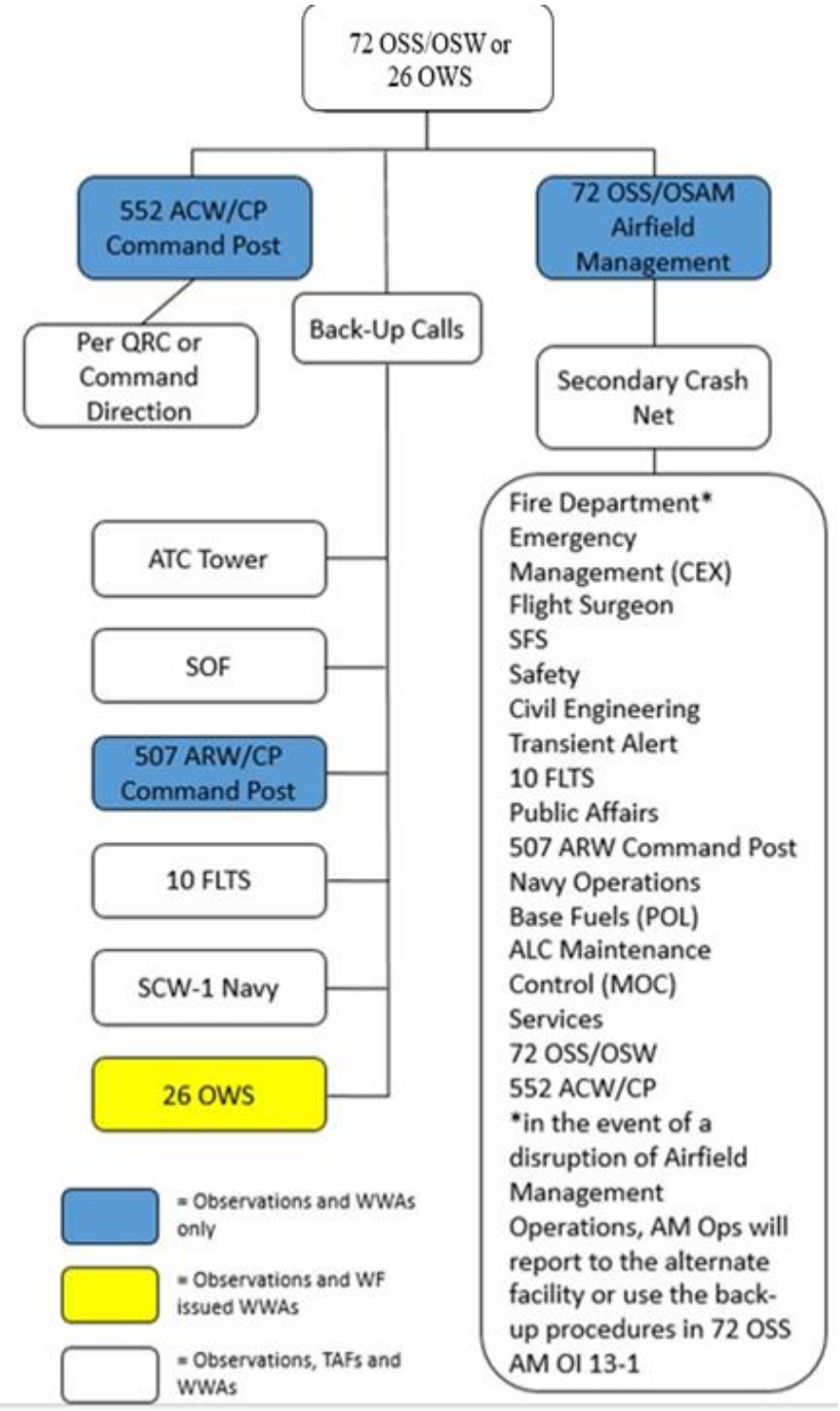
2.7.4.2. **Tornado Warnings.** 72 OSS/OSW has the primary responsibility for sounding the base siren for a tornado warning issuance. In the event the 72 OSS/OSW system is malfunctioning, 552 ACW/CP will sound the siren. 552 ACW/CP is primarily responsible for the Tornado Warning AtHoc notification.

2.7.4.3. **NWS WWA.** 72 OSS/OSAA Airfield Management Operations will not disseminate NWS Flood/Fire WWA's over the Secondary Crash Net.

Table 2.5. Notification Priority.

1. ATC Tower speed dial button or via DSN (312) 884-3554 COMM (405) 734- 3554 Or Admin line via DSN (312) 884-5232 COMM (405) 734-5232	Observations, TAFs, and WWAs
2. 552 ACW/CP hotline or via DSN (312) 884-7313 COMM (405) 734-7313	Observations and WWAs
3. 72 OSS/OSAA Airfield Management face-to-face or via DSN (312) 884-2191 COMM (405) 734-2191	Observations and WWAs
4. 507 ARW/CP via DSN (312) 884-2928 COMM (405) 734-2928	Observations and WWAs
5. 10 FLTS via DSN (312) 336-7719 COMM (405) 736-7719	Observations, TAFs, and WWAs
6. Navy via DSN (312) 884-9923/9929 COMM (405) 734-9923/9929	Observations, TAFs, and WWAs
7. 26 OWS via DSN (312) 331-2614 COMM (318) 529-2614	Observations and WF-issued WWAs

Figure 2.1. Weather Pyramid Alerting.



2.8. Aircraft Mishap. When notified of an aircraft mishap, 72 OSS/OSW will initiate a save of applicable data used in the development of any weather products provided and provide this data to investigating agencies upon request.

2.8.1. 72 OSS/OSW will notify the 26 OWS of the aircraft mishap as soon as possible after receiving notification of the event. 72 OSS/OSW will coordinate with 26 OWS to save all applicable data and products. If products from other OWSs were used, 72 OSS/OSW will coordinate with all applicable OWSs to ensure data is saved. 72 OSS/OSW will save enough data covering weather conditions before and after the mishap to fully reconstruct environmental conditions.

2.8.2. If an OWS or another WF provided the MWP, that unit will conduct the data save in coordination with any other Air Force Weather units involved.

Chapter 3

MISSION INTEGRATION FUNCTION

3.1. General. 72 OSS/OSW provides support utilizing the administrative and operational components of the Mission Execution Forecast Process (MEFP). Weather technicians use the MEFP to reliably inject timely, accurate, and relevant environmental information at every decision point in the mission planning and execution process in an effort to optimize mission success. 72 OSS/OSW supports both the Tinker AFB flying and non-flying missions using the MEFP. This chapter identifies the supported flying and non-flying missions and the weather support provided.

3.2. Flying Missions. The WF provides weather support to the flying units listed in **Attachment 6.**

3.3. Mission Weather Product (MWP). A MWP is the end result of the MEFP. MWPs fuse theater scale products with local mission requirements enabling the direct inject of weather impacts into warfighter planning and/or execution. MWPs are living documents, and any/all feedback will be applied to internal MISSIONWATCH/METWATCH processes to enhance training, forecast proficiency, and product accuracy. MWPs include flight weather briefings, Intelligence Preparation of the Operational Environment (IPOE) products, mission planning briefs, environmental inputs to mission analysis, environmental staff estimates, and any other weather product prepared to meet the needs of a supported unit. MWPs are primarily developed by WFs utilizing the MEFP. The result is a product designed to provide timely, accurate, and relevant environmental information for planning and execution. The MWPs must be horizontally consistent with (but not necessarily mirror) products issued by any OWS and the 557th Weather Wing (557 WW)

3.3.1. **Flight Weather MWPs.** Supported units desiring routine weather support should e-mail flying schedules to 72 OSS/OSW organizational box (**72OSS.OSW2@us.af.mil**). This is the primary method of requesting MWPs. Briefings and updates can be obtained by calling 72 OSS/OSW at DSN (312) 884-3196/3540 or at Commercial (405) 734-3196/3540. Supported units should provide, at a minimum, 24 hours' notice if possible.

3.3.2. **Mission Step-Briefs.** The 72 OSS/OSW will provide in-person step-briefs to 552 OG aircrew for all non-local, HHQ, and CDO missions. Step-briefs will include all pertinent weather information for the entire duration of the mission as detailed in the 175-1, briefed via PowerPoint slides.

3.3.2.1. **Reciprocal support from the 552 OG.** The 552 OSS/OSOL will identify missions requiring in-person weather step-briefs on the following days flying schedule through the use of a checked or un-checked "wx requested" block.

3.3.3. **DD Form 175-1, *Flight Weather Briefing*.** The 175-1 is the primary source of flight weather information for 552 ACW, 507 ARW, SCW-1, and transient aircraft; however, any aircrew taking off out of KTIK can request/receive a 175-1 from the WF. Flight weather briefs will be either emailed to aircrew, printed and hand carried to a step-brief (552 ACW only), or by request, posted to the WF SharePoint at: **https://usaf.dps.mil/sites/TMC719240/72OSS/OSW/SitePagesR/Home.aspx**.

3.3.4. **Takeoff And Landing Data.** Takeoff and Landing Data (TOLD) is the primary source of flight weather information for the 10 FLTS for check flights leaving and returning to Tinker AFB. 72 OSS/OSW posts the Tinker AFB TOLD to the WF SharePoint web site at: **https://usaf.dps.mil/sites/TMC719240/72OSS/OSW/SitePagesR/Home.aspx** (under the "MEF" link). For a more tailored weather brief, 10th FLTS aircrews can request a 175-1 in-place of the TOLD data or a verbal briefing.

3.3.4.1. 507 ARW will receive weather support from Tanker Airlift Control Center (TACC) during real-world missions including but not limited to deployments, exercises, and HHQ missions.

3.4. MISSIONWATCH. This is a deliberate process for monitoring terrestrial weather and/or the space environment for specific mission-limiting environmental factors.

3.4.1. **WF Briefed Missions.** The on-duty technician accomplishes MWP amendments/updates through MISSIONWATCH. When the technician identifies potential hazards, at-risk missions will be monitored continuously. To provide the most accurate weather data for safety of flight and ground personnel, WF technicians will utilize proper risk management principles during all stages of the forecast process and will remain situationally aware of weather criteria or system outages that might require further action. During rapidly changing weather, 72 OSS/OSW will inform the 26 OWS when weather products issued by the 26 OWS do not accurately reflect observed conditions and may impact flight safety. 72 OSS/OSW will amend/update MWPs as necessary. In addition, when previously unforecasted weather conditions develop that place a mission at risk, 72 OSS/OSW will contact the associated flying unit with updates. These units will pass this information to the aircrews. See **Table 3.1** for local flying units and associated agencies. 72 OSS/OSW will conduct and log MISSIONWATCH for any flight or mission supported by 72 OSS/OSW. **Note:** 72 OSS/OSW only conducts MISSIONWATCH for missions directly supported by 72 OSS/OSW.

Table 3.1. Local Flying Units and Associated Agencies.

FLYING UNIT	ASSOCIATED AGENCY
552 ACW	552 ACW/CP hotline or via DSN (312) 884-7313 COMM (405) 734-7313
507 ARW	507 ARW/CP via DSN (312) 884-2928 COMM (405) 734-2928
10 FLTS	10th Flight Test Squadron via DSN (312) 336-7719/7710 COMM (405) 736-7719/7710
SCW-1 USN	SCW-1 Navy via DSN (312) 884-9923/9929 COMM (405) 734-9923/9929
Transient Aircrews	Transient aircrews must provide contact information for weather updates.

3.4.2. **Transient Aircrew Support.** Weather technicians will provide or arrange for weather support for transient aircrews IAW the duty priorities list **Table 1.1**. The 72 OSS/OSW may provide flight weather briefings (DD Form 175-1s), and/or updates to aircrews. Weather technicians may arrange for weather support from the 26 OWS briefing cell when greater duty priorities take precedence. Transient aircrews can request and receive briefings in person at 72 OSS/OSW (see **Attachment 9** for a map of primary and alternate operating locations) or via 72 OSS/OSW contact information listed in **para 3.3.1** of this instruction. If needed for backup purposes, the 26 OWS briefing cell can be reached at DSN (312) 331-2652/2635/2633, Commercial (318)529-2652/2635/2633, or via web access from the aircrew briefing terminal located in the flight planning room. (**https://owsjet26.us.af.mil/**). 26 OWS standard lead time for a flight weather briefing is 2 hrs. All 175-1 requests will be requested at least 2 hrs in advance.

3.5. Post-Mission Analysis/Feedback. Aircrews should contact 72 OSS/OSW with post-mission information and/or requests for follow-up support. 72 OSS/OSW utilizes feedback to improve internal processes and enhance training, forecast proficiency, product content and product accuracy. Formal/informal feedback methods include:

3.5.1. Completion of 72 OSS/OSW Feedback Form. This form is located on the 72 OSS/OSW SharePoint site at **https://usaf.dps.mil/sites/TMC719240/72OSS/OSW/SitePagesR/Home.aspx.** A copy of the Feedback Form is also included with DD Form 175- 1s and had copies are available at the AMOPS counter.

3.5.2. Phone call or an e-mail to 72 OSS/OSW.

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

3.6. Non-Flying Missions. The weather flight supports various non-flying missions (e.g., Base or Wing events; change-of-command ceremonies; Morale, Welfare and Recreation events) through RP (WWAs) and weather outlooks. Specific support to non-flying missions is addressed by the Staff Integration Function in **Chapter 4**. Specialized weather information is available to support any non-flying mission upon request. Non-governmental agencies should request weather information and support through the 72 ABW Public Affairs (PA) Office at DSN (312) 884-2026, Commercial (405) 734-2026 or via e-mail at **72abw.pa.workflow@us.af.mil**. The 26 OWS will provide back up support to the weather flight in the case of an outage and can be contacted via at DSN (312) 331-2600.

3.7. Space Weather Impacts. Tinker AFB's missions have a wide-variety of parameters affected by various space-weather conditions (High Frequency and Ultra High Frequency communication, radar, Global Positioning System communications, etc.). WF provides space impacts on their MWPs.Moredetailedproductsareavailableat:
https://weather.af.mil/confluence/display/AFWWEBSTBT/Space+Weather+Main+Page.

3.8. Severe Weather Action Plan (SWAP). WF will initiate SWAP in accordance with criteria listed in **Table 3.2**. SWAP ensures sufficient manpower is available to meet the increased demand for timely weather information from its supported unit(s) during significant weather events. It is imperative that timely and accurate weather watches, warnings, and advisories are disseminated to all agencies to ensure safety of personnel and RP. During normal staff duty hours, the on-duty WF technician will notify the WF Commander and/or Flight Chief when SWAP conditions are met. Outside of normal staff duty hours, the WF technician will notify the Severe Weather Action Team standby forecaster when necessary.

Table 3.2. Conditions Requiring SWAP Activation.

The on-duty weather technician will notify/activate SWAP when:
1. On-duty technician anticipates, or issues, WWAs for any of the following: Tornado, Severe Thunderstorms, Winds GTE 50KTs, and/or Hail GTE ¾ inch.
2. The National Weather Service (NWS) issues a convective Weather Watch/Warning for Oklahoma County or Tinker AFB area.
3. An overwhelming workload exists or at the technician's discretion.

3.9. Chemical, Biological, Radiological, Nuclear (CBRN), and High-yield Explosive Response.

3.9.1. The 72 OSS/OSW Flight CC will serve as the Weather CBRN subject matter expert (SME) for the installation and will routinely meet with the installation Emergency Management (EM), Fire Emergency Services and Bioenvironmental Engineering to ensure WF integration into their full mission immersion. These meetings will be documented and stored in the memorandum folder for after-action review.

3.9.2. As the Weather CBRN SME, 72 OSS/OSW Flight CC will:

3.9.2.1. Provide meteorological parameters, data, and subject matter expertise to installation Disaster Response Force elements, EOC Emergency Support Functions (ESF), and any/all Installation Emergency Management Plans.

3.9.2.2. Partner with the Civil Engineering Directorate Emergency Management Division, Fire Emergency Services, Bioenvironmental Engineering Flight, Army Installation Directors of Emergency Services, and National Guard Civil Support Teams for ANG weather organizations, as the Weather SME responsible for optimizing weather data input to Chemical Downwind Messages (CDMs), Effective Downwind Messages (EDMs), and CBRN hazard-prediction models used by these ESFs for decision assistance in the EOC, CBRN Control Center, and at the incident site.

3.9.2.3. Advise and provide the most accurate and representative observed and/or forecast alphanumeric and gridded meteorological data type appropriate to a particular CBRN event to users employing models resident in the Joint Warning and Reporting Network/Joint Effects Model/Joint Operational Effects Federation architecture and equivalent Joint guidance, to ensure consistency between CBRN hazard area predictions and the installation forecast.

3.9.2.4. Provide representative, real-time observations and forecast alphanumeric/gridded model data files used to generate the affected installation's Terminal Aerodrome Forecast (TAF) as the primary weather input to users generating automated or manual location-/installation-specific CDMs and EDMs to ensure consistency between CBRN hazard area predictions and the installation forecast. Provide or arrange for delivery of CDMs and EDMs generated from AFW-WEBS or OWS webpages.

3.10. Bioenvironmental Flight. 72 OMRS/SGXB is the lead base agency for bioenvironmental information, 72 OSS/OSW can provide heat index, wind chill, or other bioenvironmental information upon request.

Chapter 4

STAFF INTEGRATION FUNCTION

4.1. General. The staff integration element functions as a direct interface with the 72 OSS/OSW supported unit commanders and staffs, providing direct support to command, control and planning functions. The WF leadership accomplishes staff integration by providing meteorological staff briefings; organizing, training, and equipping WF personnel for day-to-day operations; and cultivating relationships with base agencies to ensure optimal meteorological support.

4.2. Staff Meteorological Functions. Staff meteorological functions aid commanders and staffs in identifying and understanding specific weather and environmental impacts. 72 OSS/OSW is available to assist supported commanders in determining weather support requirements and potential impacts to operations. Examples of staff meteorological functions are:

4.2.1. **The 72 ABW Staff Briefings.** 72 OSS/OSW will provide injects to the 72 ABW staff as requested. Standard information expected weather for the current week, and a 6-14 day Tinker AFB weather outlook. Other information including radar imagery, tropical weather, local weather stories/information, space weather, volcanic ash information, etc. will be included if expected to impact Tinker AFB at the discretion of weather personnel or by 72 ABW request.

4.2.2. **The 552 ACW Stand-Up Briefings.** 72 OSS/OSW provides injects to the daily 552 ACW stand-up briefing. Standard information includes current satellite imagery, expected weather for the current day, an operations impact matrix, a 5-day Tinker AFB weather outlook, satellite imagery of deployment areas of interest, and forecast weather for deployment areas of interest. Other information including radar imagery, tropical weather, severe weather update slides, local weather stories/information, volcanic ash information, forecasts for additional deployment areas, etc. will be included if expected to impact 552 ACW missions, at the discretion of the weather staff, or by request of 552 ACW. Climatology for the following month will be briefed at the last stand-up of the preceding month.

4.2.3. **Crisis Action Team (CAT) Briefings.** 72 OSS/OSW will provide weather support as required for CAT briefings. This includes real-world emergency, exercise, and deployment briefings. The WF tailors each briefing to provide the appropriate weather intelligence for supported units.

4.2.4. **Pre-deployment Planning Briefings.** 72 OSS/OSW will provide pre-deployment weather briefings upon request and will tailor briefing content to meet supported unit requirements.

4.2.5. **Climatology Services.** Units requiring climate information must contact WF at least one duty day in advance for mission specific climatological requests. The WF leverages the support of the 14th Weather Squadron Strategic Climatic Information Service for climate statistics.

4.2.6. **Instrument Refresher Course (IRC) Briefings.** 72 OSS/OSW provides IRC briefings upon request.

4.3. Staff Integration Functions. WF leadership will ensure the flight is adequately resourced to meet both operational and staff request. In addition to leadership and management of unit activities, Staff Integration personnel will also function as a direct interface with the supported unit commanders and staffs, and will provide direct support to command, control and planning functions. Staff Integration personnel will also ensure that the flight maintains the capability to deploy to main and forward area operating locations in support of aligned aircraft as needed. Specific integration with base agencies is outlined below.

4.3.1. **72 ABW, 552 ACW and 507 ARW CCs (XP).** 72 OSS/OSW will assist in periodic exercises tailored to upcoming seasonal weather or other environmental concerns and will educate base agencies on the purpose and applicability of weather watches, warnings and advisories.

4.3.2. **552 ACW/CP.** 72 OSS/OSW will notify the CP whenever the base weather station is evacuated and/or the AOL is activated.

4.3.3. **72 ABW/PA.** 72 OSS/OSW provides tours of the base weather station for community groups and others (including non-government agency weather requests) when coordinated by PA and can provide weather forecasts or historical weather data for public release as requested.

4.3.4. **72 OSS/OSAA.** 72 OSS/OSW provides notification of all forecasted weather watches, warnings, and advisories via Integrated Weather Warnings Capability (IWWC), telephone, email, or in-person during airfield hours of operations.

4.3.4.1. The 72 OSS/OSW will notify the 72 OSS/OSAA whenever the base weather station is evacuated and/or the AOL is activated.

4.3.4.2. WF leadership will participate as a member of the Airfield Operations Board (AOB) as directed in AFMAN 13-204, *Management of Airfield Operations.*

4.3.5. **72 OSS/OSAT.**

4.3.5.1. The 72 OSS/OSW provides notification of all weather watches, warnings, and advisories via IWWC (IDS5), telephone, or e-mail.

4.3.5.2. The 72 OSS/OSW will notify the 72 OSS/OSAT whenever the base weather station is evacuated and/or the AOL is activated.

4.3.5.3. The 72 OSS/OSW will provide limited data observing and cooperative weather watch orientation training to ATC personnel.

4.3.6. **The 72 ABW/CE.** 72 OSS/OSW will provide a climatology report and significant weather updates as needed.

4.3.7. **Supported Flying Units (552 ACW, 507 ARW, 513 ACG, 10 FLTS, SCW-1).** 72 OSS/OSW will provide services as outlined throughout this publication as well as provide monthly climatology updates as required.

4.4. Reciprocal Support.

4.4.1. **The 552 ACW/CP will:**

4.4.1.1. Ensure dissemination of weather watches, warnings, and advisories as outlined in **Chapter 2** of this instruction.

4.4.1.2. Notify 72 OSS/OSW duty technician immediately of all aircraft emergencies, incidents, or accidents in the event that 72 OSS/OSW duty technician does not acknowledge the notification over the Secondary Crash Net.

4.4.1.3. Run applicable Quick Reaction Checklists (QRCs) to notify wing leadership and various base agencies of severe weather when notified by the OWS or 72 OSS/OSW.

4.4.1.4. Serve as a back-up to activate the base emergency sirens when a tornado warning is issued.

4.4.2. **The 72 ABW/PA will:** Coordinate weather station tours and non-governmental agency weather requests with 72 OSS/OSW Flight Chief or Flight Commander.

4.4.3. **The 72 OSS/OSAA will:**

4.4.3.1. Notify WF personnel of in-flight, ground emergencies, or mishaps, and emergency and/or mishap termination, via the Secondary Crash Net.

4.4.3.2. Ensure dissemination of weather warnings and advisories as outlined in **Chapter 2** of this instruction.

4.4.4. **The 72 OSS/OSAT will:**

4.4.4.1. Participate in the Cooperative Weather Watch and ATC Limited Observation training as outlined in **Chapter 2** of this instruction.

4.4.4.2. Notify 72 OSS/OSW of all changes in active runway.

4.4.4.3. Relay pilot weather reports to weather personnel within 5 minutes of receipt, as duty priorities allow.

4.4.4.4. Provide control tower orientation training for weather personnel.

4.4.4.5. Respond to radio checks upon request to ensure proper PMSV operation and maintenance.

4.4.5. **The 72 ABW/SE will:** Request a Tinker AFB WF briefer for seasonal weather briefings and provide 2 weeks advance notice when possible.

4.4.6. **The 72 OSS/OSMA will:**

4.4.6.1. Provide, coordinate, or arrange for the installation, maintenance, and repair of all weather communication and meteorological sensing equipment, except for the communication and meteorological equipment maintained by contract (i.e. JET).

4.4.6.2. Coordinate with the duty weather technician or WF leadership prior to routine maintenance and will ensure scheduled maintenance does not degrade METWATCH and/or MISSIONWATCH during periods of inclement weather.

4.4.6.3. Utilize the restoration priorities for weather communications and meteorological sensing equipment outlined in **Chapter 5** of this instruction.

4.4.6.4. Notify the responsible service agents for weather communications and meteorological sensing equipment outages.

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

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

4.4.6.7. Ensure weather data and telephone circuits are assigned repair priorities.

4.4.6.8. Ensure established maintenance response times are met.

4.4.6.9. Ensure the availability of a 24-hour point-of-contact for reporting outages and assigning job control numbers.

4.4.6.10. Coordinate with WF duty technician prior to deactivating any equipment for maintenance.

4.4.7. **The 72 ABW/CE will:** Contact 72 OSS/OSW Flight Chief or Flight Commander to request climatological data and specialized support for projects on Tinker AFB as needed.

4.4.8. **The 72 SFS will:** Contact 72 OSS/OSW Flight Chief or Flight Commander to request climatological data and specialized support for conducting operations or training on Tinker AFB as needed.

4.4.9. **All Supported Flying Units (552 ACW, 507 ARW, 513 ACG, 10 FLTS, SCW-1) will:**

4.4.9.1. Notify on-duty weather technician of current and planned weather alternates, and any special considerations affecting duration of tour (i.e., weather categories, exercise/deployment considerations, etc.).

4.4.9.2. Notify on-duty weather technician of required additional support as soon as possible, to include monitoring of alternate observations/forecasts and tracking of weather conditions affecting local flying operations.

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

4.4.9.4. Provide PIREPs either directly to WF or through the PMSV or ATC.

4.4.9.5. Provide feedback to WF on weather support via e-mail or survey.

4.4.9.6. Submit requests to WF at least 2 weeks in advance for weather training/educational requirements (or changes in requirements) to include IRC briefings and seasonal weather briefings.

4.4.9.7. Provide 2 hours' notice for flight weather briefing requests to the maximum extent possible.

4.4.10. **Airfield Management Flight Information Publication (FLIP) Manager will:** Submit 72 OSS/OSW FLIP updates to Air Force Flight Standards Agency (AFFSA).

4.4.11. **The 72 OMRS/SGXB (Bioenvironmental Flight) will:** Provide the base populace with the Wet Bulb Globe Temperature (WBGT) as required, and issue appropriate heat stress categories through the AtHoc network as required.

4.4.12. **The 72 ABW/SCOO will:**

4.4.12.1. Provide secondary software upgrade support for the JET sensor collection appliance (SCA) in the event that the 557 WW is unable to remotely load upgrades or patches.

4.4.12.2. Provide 557 WW backup support touch maintenance to assist in troubleshooting tasks to diagnose system errors and implement solutions in the event that remote maintenance is unable to establish contact with the JET SCA.

4.4.13. **All Weather Support Recipients will:**

4.4.13.1. Notify WF through proper chain of command when new weather support requirements or requests are identified.

4.4.13.2. Coordinate changes/additions to or stoppage of weather support requirements as soon as possible.

Chapter 5

METEOROLOGICAL & COMMUNICATION EQUIPMENT

5.1. General. This chapter provides a brief description of the meteorological and communications equipment used by 72 OSS/OSW. Additionally, it provides information on backup systems, maintenance, and restoring priorities.

5.2. Meteorological Equipment. WF uses the FMQ-19, GR2Analyst/GR3 weather radar, and Mark IVB meteorological satellite software to determine the current state of the atmosphere. These critical systems enable forecasters to accurately assess the current state of the atmosphere.

5.2.1. **FMQ-19.** The FMQ-19 samples, measures, and reports: temperature, wind speed and direction, visibility, cloud base height and amount of coverage, pressure, liquid equivalent precipitation accumulation, and ice accretion during freezing precipitation. These measurements are processed to create properly formatted, fully automated observations that comply with applicable various reporting standards and protocols defined in the Federal Meteorological Handbook (FMH-1), the World Meteorological Organization (WMO), the Federal Aviation Administration (FAA), National Weather Service (NWS), and military reporting standards. See **Attachment 8** for the Tinker Airfield sensor locations.

5.2.2. **GR2Analyst/GRLevel3.** WF utilizes the GR2Analyst/GRLevel3 as the primary source of radar data. WF technicians use this software to analyze complex radar signatures, indicate lightning positions, and obtain detailed information on storm intensity, movement, internal circulation, and general wind flow. Weather technicians will routinely incorporate the latest radar information into mission execution forecasts and RP products.

5.2.3. **Mark IVB.** Mark IVB is an Air Force meteorological satellite software that receives data from polar orbiting and geostationary meteorological satellites. This unique meteorological analysis/forecasting tool allows weather technicians to interrogate current weather data in detail and is useful in data sparse areas (lack of weather reporting stations).

5.2.4. **Kestrel 4000/4500/5500.** The Kestrel is a hand-held device that provides temperature, dew point, wind speed/direction, and pressure readings. The Kestrel is the primary source of backup meteorological data during FMQ-19 outages.

5.2.5. **TMQ -53.** The TMQ-53 is the tactical, portable, version of the FMQ-19. It has all the capabilities of the FMQ-19 listed in **para. 5.2.1**. Weather personnel will be trained and certified on set-up/tear-down and operating procedures for the TMQ-53 on an annual basis.

5.2.6. **Manual Observing Kit.** The 72 OSS/OSW will maintain three manual observing kits which come equipped with a lightning detector, Kestrel, ruler, and rain gauge. These kits are in place to aid with outages to the FMQ-19 or when augmented observations are needed.

5.3. Communications Equipment. The systems comprise the WF communications architecture:

5.3.1. **Joint Environmental Toolkit (JET).** JET is the primary system for disseminating terminal aerodrome forecasts, weather observations, and Weather Watches, Warnings, and Advisories. Telephones are used as a backup for key aircraft-controlling agencies. JET access providing real-time Tinker airfield weather data is available to users with .mil access, via this link: **https://owsjet26.us.af.mil/portal/private/GuestTinkerAFB/Sensor**

5.3.2. **PMSV Radio.** The PMSV Radio (UHF 261.025) allows WF to communicate with aircrews, both on the ground and flying, as well as ATC personnel. If the PMSV is out- of-service, aircrews can contact Tinker AFB Tower at VHF 124.45 or UHF 251.05 MHz, 552 ACW/CP at VHF 141.65, VHF 139.95, UHF 305.6, or UHF 225.875 MHz.

5.3.3. **Telephones/Hotlines.** Telephones and hotlines serve as a primary method for rapidly relaying critical, time-sensitive information. Telephones and hotlines also serve as a back-up to weather dissemination services IAW **Table 2.5** and **Figure 2.1** of this instruction.

5.3.4. **Local Area Network (LAN).** 72 OSS/OSW relies heavily on the LAN to assure the timeliness and accuracy of weather intelligence to supported units.

5.3.5. **SIPR Connectivity.** 72 OSS/OSW does have a SIPR suite in their office. However, access to the SIPRNET is limited due to lack of mission necessity.

5.4. Maintenance. The following organizations provide preventative maintenance and repair weather and communication equipment:

Table 5.1. Equipment Servicing Organization.

Equipment	Servicing Organization
FMQ-19, PMSV Radio, TMQ-53	72 OSS/OSMA (Radar, Airfield, and Weather Systems)
JET	JET Helpdesk (Comm: 402-232-2785, DSN: 312-272-2785)
Mark IV-B	557 WW Senior Duty Officer (Comm: 402-294-6657)
Phones/Hotlines	72 ABW/SCOII (Telephone Systems)
LAN/Internet Connectivity	72 ABW/SCOOA (Network Maintenance)

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

Table 5.2. Equipment Restoral Priorities.

Equipment	Organization	Response Times Significant/Minimal
FMQ-19	72 OSS/OSMA	Immediate/1 Hour
TMQ-53	72 OSS/OSMA	Routine/72 hours
PMSV Radio	72 OSS/OSMA	Immediate/1 hour
JET	JET Helpdesk	Immediate/1 hour
Mark IVB	557 WW Senior Duty Officer	Routine/72 hours
Telephones/Hotlines	72 ABW/SCOII	Immediate/12 hours
LAN/Internet Connectivity	72 ABW/SCOOA	Immediate/12 hours

5.5. Power Interruption. In the event of a commercial power interruption, building 240 will automatically switch to a back-up generator.

ABIGAIL L.W. RUSCETTA, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 13-204V1, *Management of Airfield Operations*, 21 July 2020

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

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

AFI 33-322, *Records Management and Information Governance Program*, 27 July 2021

AFMAN 11-202V3 AFMC SUP, *Flight Operations*, 13 June 2021

AFMAN 11-202V3, *Flight Operations*, 09 January 2022

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

AFMAN 11-2B-1V3, *B-1 Operations Procedures*, 13 December 2020

AFMAN 11-2B-52V3, *B-52 Operations Procedures*, 11 March 2019

AFMAN 11-2E-3GV3, *E-3G Operations Procedures*, 02 November 2022

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

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

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

DAFI 10-2501, *Emergency Management Program*, 16 October 2023

DAFMAN 15-129, *Air and Space Weather Operations*, 06 September 2023

TAFBI 10-229, *Release of Personnel Due to Hazardous Weather*, 11 December 2023

TAFBI 13-204, *Airfield Operations*, 06 January 2021

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

DD Form 175-1, *Flight Weather Briefing*

Abbreviations and Acronyms

+FC—Tornado

ACW—Air Control Wing

AFB—Air Force Base

AFFSA—Air Force Flight Standards Agency

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSC—Air Force Sustainment Center

AFW-WEBS—Air Force Weather Web Services

AGL—Above Ground Level

AIREP—Air Report

AMOS—Automated Observing System

ANG—Air National Guard

AOB—Air Operations Board

AOL—Alternate Operating Location

ARW—Air Refueling Wing

ATC—Air Traffic Control

CAT—Crisis Action Team

CB—Cumulonimbus

CBRN—Chemical, Biological, Radiological, Nuclear, and High-yield Explosive

CC—Commander

CDM—Chemical Downwind Message

CE—Civil Engineering Directorate

CONUS—Continental United States

COOP—Continuity of Operations Plan

CP—Command Post

CWW—Cooperative Weather Watch

DS—Dust Storm

DSNT—Distant

EDM—Effective Downwind Message

EM—Emergency Management

ESF—Emergency Support Functions

ESTMD—Estimated

EWO—Emergency War Orders

FAA—Federal Aviation Administration

FC—Funnel Cloud

FLIP—Flight Information Publication

FMH-1—Federal Meteorological Handbook 1

GR—Hail

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IPOE—Intelligence Preparation of the Operational Environment

IRC—Instrument Refresher Course

IWWC—Integrated Weather Warnings Capability

JET—Joint Environmental Toolkit

KT—Knots

LAN—Local Area Network

LOCAL—Aviation Selected Local Weather Report

LTG—Lightning

LWR—Lower

MEFP—Mission Execution Forecast Process

METAR—Aviation Routine Weather Report

METSAT—Meteorological Satellite

METWATCH—Meteorological Watch

MHz—Megahertz

MOV—Moving

MOVD—Moved

MWP—Mission Weather Product

NM—Nautical Miles

NWS—National Weather Service

OC-ALC—Oklahoma City Air Logistics Complex

OHD—Overhead

OK—Oklahoma

OPR—Office of Primary Responsibility

OSAA—Airfield Management

OSAT—Tower

OSMA—Radar Airfield Weather Systems (RAWS)

OSS—Operations Support Squadron

OWS—Operational Weather Squadron

PA—Public Affairs

PIREP—Pilot Report

PK WND—Peak Wind

PL—Ice Pellets

PMSV—Pilot-to-Metro Service

POC—Point of Contact

RDS—Records Disposition Schedule

RVR—Runway Visual Range

RWY—Runway

SC—Communications Directorate

SCA—Sensor Collection Appliance

SCW-1—Strategic Communications Wing ONE

SE—Safety Office

SFS—Security Forces Squadron

SM—Statute Mile

SME—Subject Matter Expert

SOP—Standard Operating Procedure 5

SPECI—Aviation Selected Special Weather Report

SS—Sandstorm

SWAP—Severe Weather Action Procedures

SWS—Special Weather Statement

TAF—Terminal Aerodrome Forecast

TCU—Towering Cumulus

TOLD—Takeoff and Landing Data

TWR—Tower

UFN—Until Further Notice

UNKN—Unknown

USN—United States Navy

VA—Volcanic Ash

VFR—Visual Flight Rules

VIS—Visibility

WF—Weather Flight

WMO—World Meteorological Organization

WSHFT—Wind Shift

WWA—Air Force Instruction

XP—Plans and Programs

Attachment 2

SPECIAL WEATHER OBSERVATION CRITERIA

A2.1. A Special weather observation will be taken and disseminated for the following criteria:

A2.1.1. **Visibility.** When the prevailing visibility decreases below or, if below, increases to equal or exceeds any of the values listed below:

Table A2.1. Visibility Levels.

Visibility (Statue Miles)	3	**2 3/4**	**2 1/2**	**2 1/4**	**2**	**1 3/4**	**1 1/2**	**1 3/8**	**1 1/4**	**1 1/8**	**1**	**7/8**	**3/4**	**5/8**	**1/2**	1/4
Note: Items in **bold/underline** indicate criteria found in the high and low altitude FLIPs.																

A2.1.2. **Ceiling.** When the ceiling goes below or, if below, increases to equal or exceeds any of the values listed below:

Table A2.2. Ceiling Levels.

Height (feet)	3,000	2,000	1,500	1,000	**800**	**700**	**600**	**500**	**400**	300	**200**	100
NOTE: Items in **bold/underlined** indicate criteria found in the high and low altitude FLIPs												

A2.1.3. **Sky Condition.** A layer of clouds (it does not have to be a ceiling) or obscuring phenomena aloft is observed below 800 feet and no layer was reported below this height in the previous METAR or SPECI.

A2.1.4. **Wind.**

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

A2.1.4.2. **Squall.** A strong wind characterized by a sudden onset in wind speed increasing at least 16 knots and sustained at 22 knots or more for at least 1 minute. A SPECI is not required to report a squall if one is currently in progress.

A2.1.5. **Volcanic Eruption/Ash.** Eruption or volcanic ash cloud first noted.

A2.1.6. **Thunderstorm.**

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

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

A2.1.7. **Precipitation.**

A2.1.7.1. Hail begins or ends.

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

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

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

A2.1.8. **Tornado, Funnel Cloud, or Waterspout.** Is observed, disappears from sight, or ends.

A2.1.9. **Runway Visual Range (RVR).** WF will provide RVR output according to the specifications listed in **Table A2.3**.

Table A2.3. RVR Reporting.

- RVR will be reported when prevailing visibility is first observed ≤ 1SM/1600 meters and again when prevailing visibility goes above 1SM/1600 meters.		
RVR for active runway decrease to less than or, if below, increase to equal or exceed:		
6,000 feet	**4,000 feet**	1,200 feet
5,500 feet	**3,500 feet**	1,000 feet
5,300 feet	**2,400 feet**	600 feet
5,000 feet	2,000 feet	
4,500 feet	1,600 feet	

A2.1.10. **Tower Visibility.** Transmit a SPECI with the tower visibility as a remark:

A2.1.10.1. When notified by the control tower that tower visibility has decreased to less than or, if below, increased to equal or exceed 1, 2, or 3 statute miles, (1600, 3200 or 4800 meters) and the control tower visibility differs from the prevailing visibility.

A2.1.10.2. When notified by the control tower that tower visibility has decreased to less than or, if below, increased to equal or exceed locally developed tower special criteria (if applicable) and the control tower visibility differs from the prevailing visibility.

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

A2.1.12. **Aircraft Mishap.** When notified of an aircraft mishap, 72 OSS/OSW will immediately take a SPECI observation IAW AFMAN 15-111. The disseminated observation will not indicate the occurrence of an aircraft mishap.

A2.1.13. Any other meteorological situation that the weather technician deems critical.

Attachment 3

FORECAST SPECIFICATION AND AMENDMENT CRITERIA

A3.1. Specification and Amendment Criteria. The TAF will specify the time of occurrence, duration, and the intensity (if applicable) of expected weather conditions. If the TAF does not meet the specified criteria listed, an amendment will be issued. The following weather criteria will be specified in TAFs if expected to occur during the forecast period:

A3.1.1. Ceiling and/or visibility is forecast to decrease less than or if below, is forecast to equal or exceed any of the thresholds in **Table A3.1**.

Table A3.1. Ceiling/Visibility Forecast levels.

Ceiling	Visibility	Category
GT 2000 FT	GT 3 SM (4800 M)	E
LT 2000 FT but GT 1000 FT	LT 3 SM (4800 M) but LT 2 SM (3200 M)	D
LT 1000 FT but GT 700 FT	LT 3 SM (4800 M) but GT 2 SM (3200 M)	C
LT 700 FT but GT 200 FT	LT 2 SM (3200 M) but GT 1/2 SM (800 M)	B
LT 200 FT	LT 1/2 SM (800 M)	A

A3.1.2. **Wind:**

A3.1.2.1. The difference between the predominant wind speed and the forecast wind speed is GT 10 knots.

A3.1.2.2. The difference between observed gusts and the forecast is GT 10 knots.

A3.1.2.3. A change GT 30 degrees when the predominant wind speed or gusts are expected to be 15 knots or greater.

A3.1.3. **Icing.** The beginning or ending of icing first meets, exceeds, or decreases to less than moderate (or greater) thresholds and was not specified in the forecast from the surface to 10,000 feet Above Ground Level (AGL).

A3.1.4. **Turbulence.** The beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds (for CAT II aircraft) and was not specified in the forecast from the surface to 10,000 feet AGL.

A3.1.5. **Weather Warning / Forecast Advisory.** Occur, or are expected to occur during the forecast period, but were not specified in the forecast, or are specified in the forecast but are no longer expected to occur during the forecast period.

A3.1.6. **Altimeter Setting.** Altimeter setting meets or exceeds (if below) 31.00 inHg and was not specified in the forecast. Drops below (if above) 31.00 inHg and was not specified during the forecast period. Drops below (if above) or increases above (if below) 28.00 inHg and was not specified in the forecast.

A3.1.7. **Thunderstorms.** Change in beginning or end time is incorrect.

A3.1.8. **Temporary Conditions:**

A3.1.8.1. If temporary conditions become predominant.

A3.1.8.2. If temporary conditions do not occur during the first hour of the forecast for temporary conditions.

A3.1.8.3. If temporary conditions are no longer expected to occur.

A3.1.9. **Changes to Predominant Conditions.** Amend if forecast change conditions occur before the specified period of change, do not occur within 30 minutes of the forecast change, or are no longer expected to occur.

A3.1.10. **Representative Conditions.** Forecast conditions are not considered representative of existing or forecast conditions and amending the forecast improves safety, flight planning, operations efficiency, or assistance to in-flight aircraft.

Attachment 4

SAMPLES – WEATHER PRODUCT DISSEMINATION FORMAT /INTERPRETATION OBSERVATION/TAF/WWA

A4.1. Weather Observations.

Table A4.1. Sample Weather Observations.

1	2	**3**	4	**5**	6	**7**	8	**9**	10
SPECI KTIK **1506Z** AUTO **17013G22KT** 2 1/2 **R18/1200** TSRA **BKN015CB OVC030** 25/20									
A2999 RMK AO2 TS OHD MOV NE									
11	12								

Table A4.2. Body of Report.

Body of Report - Consists of 11 Groups		
Group	Reference	Brief Description
Type of Report	A4.1.	Indicates type of report.
Station Identifier	A4.2.	A four-character group used to identify the observing location.
Date and Time of Report	A4.3.	Date and time of the report.
Report Modifier	A4.4.	A report modifier **(COR**) identifying report as a correction, or **AUTO** indicating the weather observation is a fully automated report with no human intervention. Gusts are appended if available.
Wind	A4.5.	Indicates wind direction and speed.
Visibility	A4.6.	Provides prevailing visibility from the designated point of observation in statute miles or meters.
Runway Visual Range	A4.7.	10-minute RVR or varying RVR in hundreds of feet or meters.
Present Weather	A4.8.	Any weather occurring at the observing location, obscurations to vision, or other phenomena.
Sky Condition	A4.9.	State of the sky in terms of sky cover, layers and heights, ceilings and obscurations.
Temperature and Dew Point	A4.10.	Measure of hotness/coldness of ambient air. Dew point measures saturation point temperature.
Altimeter Setting	A4.11.	The pressure value an aircraft altimeter must be set in order to indicate altitude above mean sea level.

Remarks	A4.12.	Remarks generally elaborate on parameters reported in the body of the report and will be included in all METAR and SPECI observations.

A4.1.1. Type of Report. METAR or SPECI.

A4.1.2. Station Identifier – International Civil Aviation Organization (ICAO). This code identifies the location of the observation (in this case, KTIK indicates Tinker AFB).

A4.1.3. Date and Time of Report. In Zulu (GMT) the actual time the report is transmitted longline or when the criteria for a SPECI is met or noted. If the report is a correction to a previously disseminated report, the time of the corrected report will be the same time used in the report being corrected.

A4.1.4. Report Modifier. The report modifier can be either of the following two elements:

A4.1.4.1. COR is entered into the report modifier group when a corrected METAR or SPECI is transmitted.

A4.1.4.2. AUTO identifies the report as a fully automated report with no human intervention.

A4.1.4.2.1. AUTO is automatically included in reports when the weather technician signs off the AMOS indicating the observations are no longer being augmented.

A4.1.4.2.2. AUTO and COR will not be seen in the same observation. If the term COR is used, the observation cannot be reported as AUTO, since a weather technician is manually correcting the observation.

A4.1.5. Wind. The true direction the wind is blowing from is encoded in tens of degrees using three figures. Directions less than 100 degrees are preceded with a "0." The wind speed is entered as a two- or three-digit group immediately following the wind direction.

A4.1.5.1. Gust. The wind gust is encoded in two or three digits immediately following the wind speed. The wind gust is encoded in whole knots using the units and tens digits and, if required, the hundreds digit.

A4.1.5.2. Variable Wind Direction (speeds 6 knots or less). Variable wind direction with wind speed 6 knots or less may be encoded as VRB in place of the direction.

A4.1.5.3. Variable Wind Direction (speeds greater than 6 knots). Wind direction varying 60 degrees or more with wind speed greater than 6 knots will be encoded immediately follow the wind group. The directional variability will be encoded in a clockwise direction. For example, if the wind is variable from 180 degrees to 240 degrees at 10 knots, it would be encoded 21010KT 180V240.

A4.1.5.4. Calm Wind. Calm wind is encoded as 00000KT.

A4.1.6. Visibility. The furthest predominant distance (at least 50% of the aerodrome, not necessarily contiguous) seen from the airfield, reported in whole statute miles with fractions as required.

A4.1.7. Runway Visual Range. The 10-minute average Runway Visual Range on the touch-down end of active runway in feet or meters. A measurement in feet will be followed by FT. If the RVR is not available, it will be encoded as RVRNO in the Remarks (RMK) section when prevailing visibility is 1 mile (1600 meters) or less, or RVR is 6,000 feet (1830 meters) or less.

A4.1.8. Present weather. Weather occurring within 5 statute miles (unless directed elsewhere, in nautical miles for thunderstorms and lightning) of the point of observation (at the station) is encoded in the body of the report. Weather occurring in the vicinity of the station (between 5 and 10 statute miles unless directed elsewhere, in nautical miles for thunderstorms and lightning) is also encoded in the body of the report. **Table A4.3** lists the present weather codes.

Table A4.3. Weather Phenomena Codes.

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

A4.1.9. Sky Condition and Cloud Height. Describes the coverage of clouds, in eighths, present at the airfield, and the base of each cloud deck in hundreds of feet. Sky condition is encoded in ascending order up to the first overcast layer. Sky condition will be annotated with the following categories:

A4.1.9.1. SKC – Sky Clear.

A4.1.9.2. FEW – 1/8 to 2/8 coverage.

A4.1.9.3. SCT – Scattered; 3/8 to 4/8 coverage.

A4.1.9.4. BKN – Broken; 5/8 to 7/8 coverage. Coverage 5/8 or more constitutes a ceiling.

A4.1.9.5. OVC – Overcast; 8/8 coverage.

A4.1.9.6. VV – Vertical visibility; normally used during heavy fog, indicates how far the weather technician or sensor can see directly upwards into the surface obscuration. The vertical visibility height is also the ceiling height.

A4.1.9.7. FEW000, SCT000, BKN000 – A surface-based partial obscuration; a cloud deck or other phenomenon that has its base at the surface and is obscuring a portion of the sky. Surface-based partial obscurations will always have a height of 000. The exact obscuration will be clarified in the remarks section. For example, fog obscuring 5/8 of the sky would be encoded as sky condition BKN000 with a remark of FG BKN000.

A4.1.9.8. Cloud Height. Three-digit number provides the height of the base of the cloud in hundreds of feet (e.g., 015 equals 1,500 feet). The CB and TCU descriptors may be appended to the cloud height to indicate the cloud is a cumulonimbus or towering cumulus.

A4.1.10. Temperature and Dew Point (Celsius). The temperature is separated from the dew point following it by a solidus (/). The temperature and dew point are encoded as two digits rounded to the nearest whole degree Celsius Subzero temperatures and dew points will be prefixed with an M. For example, a temperature of 4C with a dew point of -2C is encoded as "04/M02."

A4.1.11. Altimeter Setting. The altimeter group always starts with an A (the international indicator for altimeter in inches of mercury). The altimeter is encoded as a four-digit group immediately following the A using the tens, units, tenths, and hundredths of inches of mercury. The decimal point is not encoded.

A4.1.12. Remarks. **Table A4.4** contains some of the most commonly seen remarks in observations.

Table A4.4. Remarks Listing.

AO2—Automated sensor indicator
CB—Cumulonimbus
DA—Density Altitude
DSNT—Distant
ESTMD—Estimated
FG FEW000—Surface Based Obscuration
FROPA—Frontal Passage
LTG—Lightning
LWR—Lower
MOV—Moving
MOVD—Moved
OHD—Overhead
PA—Pressure Altitude
PK WND—Peak Wind
PRESFR—Pressure Falling Rapidly
PRESRR—Pressure Rising Rapidly
RWY—Runway
TCU—Towering Cumulus
TWR—Tower
UNKN—Unknown
VIS—Visibility
WSHFT—Wind Shift

A4.2. TAF. The forecast follows the same general format as the observation with the following exceptions noted:

A4.2.1. Valid Date/Time. Forecasts are valid for a 30-hour period. In this example, the forecast is valid from the first at 0800Z until the second at 1400Z.

A4.2.2. BECMG – This is a code to indicate the predominant conditions will change to (or become) the conditions listed in the line of the forecast. The conditions will change during the time period follows the BECMG code (1700 to 1800Z in the example above).

A4.2.3. TEMPO – This code means the conditions listed on the line may occur for periods of an hour or less (1 hour and 15 minutes or less for thunderstorms) anytime between the time frame following the TEMPO code (1900Z to 2200Z in this example).

A4.2.4. Max Temp/Min Temp. T24 indicates a maximum temperature in Celsius to occur at 20Z. T10 indicates a minimum temperature of 10 Celsius to occur at 10Z (**Note:** M indicates a minus sign in front of the number: M05 = -5 C).

Table A4.5. Sample TAF.

KBLV 0108-0214 31005KT 7 SCT015 SCT250 ALSTG30.15INS BECMG 17-18 12010KT 4 SHRA SCT010 BKN025 OVC080 ALSTG30.05INS TEMPO 19-22 VRB10G20KT 1/2 TSRA SCT008 BKN015CB OVC030 T24/20Z T10/10Z

A4.3. Weather Warnings, Watches, and Advisories.

Table A4.6. Example Observed Weather Warning.

TINKER AFB WEATHER WARNING 09- 003 VALID 17/1921Z (17/1421L) TO UFN OBSERVED LIGHTNING IS OCCURING WITHIN 5NM OF TINKER AFB 21/MKC

Table A4.7. Example Forecast Weather Warnings.

TINKER AFB WEATHER WARNING 05-003 VALID 06/2007Z (06/1507L) TO 06/2037Z (06/1537L) TORNADO OR FUNNEL CLOUD WITHIN 5NM FORECAST VALUE: 5NM OF TINKER AFB 07/CA TINKER AFB WEATHER WARNING 07-019 VALID 11/2124Z (11/1624L) TO 12/0130Z (11/2030L) SEVERE THUNDERSTORMS WITH DAMAGING WINDS GREATER THAN OR EQUAL TO 50KTS. FORECAST VALUE: 50 KTS AND DAMAGING HAIL GREATER THAN OR EQUAL TO ¾ IN. FORECAST VALUE: ¾ IN. FORECAST VALUE 19/TS

Table A4.8. Example Weather Watches.

TINKER AFB WEATHER WATCH 12-014
VALID 06/1500Z (06/0900L) TO 07/0300Z (06/2100L)
POTENTIAL FOR WINTER STORM WITH SNOW ACCUMULATION GREATER THAN OR EQUAL TO 2 IN. WITHIN 12 HRS. FORECAST VALUE: 2 IN. IS IN EFFECT AT TINKER AFB.
12/MA

TINKER AFB WEATHER WATCH 02-003
VALID 19/1800Z (19/1200L) TO 19/2200Z (19/1600L)
POTENTIAL FOR LIGHTNING EXISTS WITHIN 5 NM OF TINKER AFB.
52/VP

Table A4.9. Example Observed Weather Advisories.

TINKER AFB WEATHER ADVISORY 04-014
VALID 19/1107Z (19/0607L) TO UFN
OBSERVED CROSSWIND GREATER THAN OR EQUAL TO 25 KTS. OBSERVED 25 KTS AT TINKER AFB.
07/CLH

TINKER AFB WEATHER ADVISORY 05-002
VALID 08/0922Z (08/0422L) TO UFN
OBSERVED LOW LEVEL WIND SHEAR IS OBSERVED AT TINKER AFB.
22/PJB

Table A4.10. Example Forecast Weather Advisory.

TINKER AFB WEATHER ADVISORY 01-019 VALID
22/1730Z (22/1130L) TO 23/0530Z (22/2330L)
SNOW ACCUMULATION GREATER THAN TRACE BUT LESS THAN 2 IN. FORECAST VALUE 1 IN. IS FORECAST TO OCCUR AT TINKER AFB.
07/JH

Attachment 5

SUPPORTED UNIT RESPONSE MATRIX

Table A5.1. Supported Unit Response Matrix.

Weather Watches	Agency	Agency Actions	Operational Impacts
Tornado Watch **All agencies alert personnel and run internal checklists.**	**WF**	Brief/Inform 72 ABW/CC	552 ACW aircraft dispersal depending on available personnel, aircraft on-station, ramp space, 2-8 hours to accomplish.
	72 ABW AFSC		For ¼" or greater hail,
	552 ACW	Disperse Aircraft	
	552 ACW/CP	Run appropriate QRC	
	SCW-1	Attempt aircraft evacuation	
	507 ARW		
	10 FLTS		
	38 CEIG		
	DISA	Notify all customers in facilities	
	FSS / AAFES		
	SFS		
	AFNWC/NCM		
	AFLCMC		
	DLA		

Severe Thunderstorm with Damaging Hail (GTE ¾") and/or Damaging Winds (GTE 50kts) Watch	**WF**	Notify 72 OSS/CC	GTE 60KTs, ATC will move from the CAB down to the 1st floor. Tower rated up to 215KTs Winds GTE; 65kts: Remove all support equipment from the flight line, set parking brakes on all aircraft, SFS evac Birdcage Tower.
	72 ABW AFSC		
	552 ACW		Winds GTE 85kts have:
	552 ACW/CP	Alert personnel	Wing aircraft refueled to maximum load, faced into wind, SFS evac Triple A Tower; Tie- down aircraft; 2-8 hrs to accomplish.
	SCW-1	Run appropriate QRC	For ¼" or greater hail, SCW-1 will attempt aircraft evacuation
	507 ARW		
	10 FLTS	Alert personnel	
	38 CEIG	Alert personnel	
	DISA		
Weather Watches	**Agency**	**Agency Actions**	**Operational Impacts**
	72 ABW		Consider aircraft tie- down
	AFSC		
	552 ACW		For ¼" or greater hail, SCW-1 will attempt aircraft evacuation.
	552 ACW/CP	Run appropriate QRC	
	SCW-1	Notify Personnel	
	507 ARW		

Moderate Thunderstorm with Large Hail (GTE ¼" but LT ¾") and/or High Winds (35-49kts) Watch	10 FLTS 38 CEIG DISA **72 MSG**	Have personnel secure equipment	
Damaging Winds (GTE 50kts) not associated with thunderstorms Watch	**WF** 72 ABW AFSC **552 ACW** **552 ACW/CP**	Notify 72 OSS/CC Alert personnel Run appropriate QRC	GTE 60KTs, ATC will move from the CAB down to the 1st floor. Tower rated up to 215KTs. Winds GTE 65kts: Remove all support equipment from the flight line, set parking brakes on all aircraft, SFS evac Birdcage Tower. Winds GTE 85kts have: Wing aircraft refueled to maximum load, faced into wind, SFS evac Triple A Tower; Tie- down aircraft; 2-8 hrs to accomplish.
	SCW-1		
	507 ARW 10 FLTS **38 CEIG** DISA	Alert personnel Alert personnel	
	72 ABW		

Strong Winds (35-49kts) not associated with thunderstorms Watch	AFSC		Consider aircraft tie-down
	552 ACW	Run appropriate QRC	
	552 ACW/CP		
	SCW-1		
	507 ARW		
	10 FLTS		
	38 CEIG		
	DISA		
	72 MSG	Notify Personnel	

Weather Watches	Agency	Agency Actions	Operational Impacts
Freezing Precip Watch (Note 1)	**WF**	Notify and Brief 72 ABW/CC	Delay or Cancel shifts/CE extend or put crews on standby for road / runway clearing operations.
	72 ABW AFSC	Run appropriate QRC	Delay or Cancel shifts.
	552 ACW		Leadership determines if aircraft should RTB.
	552 ACW/CP		
	SCW-1		
	507 ARW	Alert Personnel	
	10 FLTS 38 CEIG	Check for ice on tanks / trucks	
	DISA		
		All Commanders (Squadron level and above or equivalent) will determine the reporting and hours of duty for their military personnel.	

		As the Installation Commander, the 72 ABW/CC will consider authorized delay, base closures and liberal leave and make a final determination for all civilian personnel assigned to Tinker AFB.	
Lightning Watch	72 ABW AFSC 552 ACW **552 ACW/CP** SCW-1 507 ARW 10 FLTS 38 CEIG DISA **72 MSG**	Run appropriate QRC	Operations and/or activities may continue, however, all personnel must be prepared to implement warning procedures without delay. Alert that A/C fuel svc may be stopped.

Weather Watches	Agency	Agency Actions	Operational Impacts
Heavy Snow Watch (Snow Accumulation GTE 2 inches expected within 12 hours)	**WF**	Notify and Brief 72 ABW/CC	Delay or Cancel shifts/CE Extend or put crews on standby for road / runway clearing operations.
	72 ABW AFSC	Run appropriate QRC	Delay or Cancel shifts/Leadership determine if aircraft should RTB
	552 ACW		
	552 ACW/CP		
	SCW-1	Alert Personnel	
	507 ARW	Check for ice/snow on tanks / trucks	
	10 FLTS		
	38 CEIG	All Commanders (Squadron level and above or equivalent) will determine the reporting and hours of duty for their military personnel.	
	DISA		
	72 MSG	As the Installation Commander, the 72 ABW/CC will consider authorized delay,	
		base closures and liberal leave and make a final determination for all civilian personnel assigned to Tinker AFB	

Weather Warnings	Agency	Agency Actions	Operational Impacts
Tornado Warning **All agencies alert personnel and run internal checklists.**	**WF**	Sound Base sirens. Coordinate OPREP3 w/ 552 ACW/CP if required	
	72 ABW		All airfield and Tinker AFB operations immediately cease. Personnel seek shelter until all clear given. Account for personnel.
	AFSC 552		
	ACW	552 ACW/CP will transmit the AtHoc base notification for	ABW consider activating EOC for coordination.
	552 ACW/CP	Tornado warning	
	SCW-1	Run appropriate QRC, send OPREP 3 if required	
	507 ARW		
	10 FLTS		
	38 CEIG		
	DISA		
	AFNWC/NCM		
	AFLCMC		
Severe Thunderstorm with Damaging Hail (GTE ¾”) and/or	**WF**	Coordinate OPREP3 w/ 552 ACW/CP if required	GTE 60KTs, ATC will move from the CAB down to the 1st floor. Tower rated up to 215KTs

Damaging Winds (GTE 50kts) Warning			Aircraft tie-down required if not hangared
	72 ABW		
	AFSC		
	552 ACW		
	552 ACW/CP	Run appropriate QRC, send OPREP3 if required.	
	SCW-1		
	507 ARW		
	10 FLTS	Personnel secure equipment and climbing tanks / trucks.	
	38 CEIG		
	DISA		
	72 MSG		

Weather Warnings	Agency	Agency Actions	Operational Impacts
Moderate Thunderstorm with Large Hail (GTE ¼" but LT ¾") and/or High Winds (35-49kts) Warning	72 ABW AFSC 552 ACW **552 ACW/CP** **SCW-1** 507 ARW 10 FLTS 38 CEIG DISA **72 MSG**	Notify Personnel	Consider aircraft tie- down For ¼" or greater hail, SCW-1 will attempt aircraft evacuation
Damaging Winds (GTE 50kts) not associated with thunderstorms Warning	**WF** 72 ABW AFSC 552 ACW **552 ACW/CP** SCW-1 507 ARW	Coordinate OPREP3 w/ 552 ACW/CP if required Run appropriate QRC, send OPREP3 if required	GTE 60KTs, ATC will move from the CAB down to the 1st floor. Tower rated up to 215KTs Aircraft tie-down required if not hangared
	10 FLTS		

	3 CCG 38 CEIG DISA **72 MSG**	Personnel secure equipment and climbing tanks / trucks.	
Strong Winds (35-49kts) not associated with Thunderstom Warning	72 ABW AFSC 552 ACW **552 ACW/CP** **SCW-1** 507 ARW 10 FLTS 38 CEIG DISA **72 MSG**	Run appropriate QRC. Notify Personnel.	Consider aircraft tie- down.

Weather Warnings	Agency	Agency Actions	Operational Impacts
Freezing Precip Warning (Note 1)	**WF** **72 ABW** AFSC **552 ACW** **552 ACW/CP** SCW-1 507 ARW 10 FLTS 38 CEIG **DISA** 72 MSG	Notify and Brief 72 ABW/CC Run appropriate QRC Alert Personnel All Commanders (Squadron level and above or equivalent) will determine the reporting and hours of duty for their military personnel. As the Installation Commander, the 72 ABW/CC will consider authorized delay, base closures and liberal leave and make a final determination for all civilian personnel assigned to Tinker AFB.	Delay or Cancel shifts Treat surfaces Airfield operations restricted Treat sidewalks Consider 59 min Leave Rule or Liberal Leave

Weather Warnings	Agency	Agency Actions	Operational Impacts
Heavy Snow Warning (Snow Accumulation GTE 2 inches expected within 12 hours)	**WF**	Notify and brief 72 ABW/CC	Delay or Cancel shifts/CE Extend or put crews on standby for road / runway clearing operations.
	72 ABW		Delay or Cancel shifts.
	AFSC		Consider 59 min Leave Rule or Liberal Leave.
	552 ACW		
	552 ACW/CP	Run appropriate QRC	
	SCW-1	Alert Personnel	
	507 ARW		
	10 FLTS		
	38 CEIG	All Commanders (Squadron level and above or equivalent) will determine the reporting and hours of duty for their military personnel.	
	DISA	As the Installation Commander, the 72 ABW/CC will consider authorized delay, base closures and liberal leave determination for all civilian personnel assigned to Tinker AFB	

Weather Warnings	Agency	Agency Actions	Operational Impacts
Lightning w/in 5NM (Observed)	**WF**	Issue via JET	Cease all outdoor activities, seek shelter.
	72 ABW		
	AFSC		
	552 ACW	Restrict outdoor work	Aircraft restricted from Take-off/Landings. No refueling or maintenance.
	552 ACW/CP	Run appropriate QRC	
	SCW-1		
	507 ARW		
	10 FLTS		
	38 CEIG		
	DISA		
	72 FSS/MSG	Close Facilities	
Note: The FMQ-19 detects freezing precipitation, but WF personnel back-up observations from the FMQ- 19 if it is deemed unrepresentative of conditions. Freezing precipitation is only reported by WF personnel if ice collects upon contact with the ground, objects in flight (from PIREP's), or objects on the ground. The Tinker AFB standard ground object for observation of freezing precipitation is the hand railings outside of Airfield Management Operations. A forecast warning will be issued 1 hour prior to the expected occurrence.			

Weather Advisories	Agency	Agency Actions	Operational Impacts
Low-Level Wind Shear	**WF** 552 ACW **552 ACW/CP** **SCW-1** 507 ARW 10 FLTS	Issue via JET Run appropriate QRC.	Possible No Take-off/Landings. Dependent on weight/strength of low- level wind shear.
Ceiling/Visibility Less than 300 FT and/or 1 NM	**WF** 72 ABW **552 ACW** **552 ACW/CP** SCW-1 507 ARW 10 FLTS	Issue via JET; Notify 72 OSS/CC Notified of Airfield Restrictions Run appropriate QRC	E-3 Aircraft restricted from Take-off/Landings less than 200 ft and/or ½ NM visibility without OG approval
Crosswinds GTE 10 knots with wet runway	**WF** **552 ACW** **552 ACW/CP** SCW-1 507 ARW 10 FLTS	Issue via JET Run appropriate QRC	No touch and goes E-3 No landings E-6 with wet runway and wind GTE 12.5 knots

	WF	Issue via JET	No touch and goes E-3
Crosswinds GTE 15 knots	**552 ACW** **552 ACW/CP** **SCW-1** 507 ARW 10 FLTS	Run appropriate QRC	
Crosswinds GTE 15 knots with wet runway	**WF** **552 ACW** **552 ACW/CP** SCW-1 507 ARW 10 FLTS	Issue via JET Run appropriate QRC	Landings permitted at 15 knots or less on wet runway; OG waiver needed for GTE 15 knots and wet runway. No landings E-6 with wet runway and wind GTE 12.5 knots

Weather Advisories	Agency	Agency Actions	Operational Impacts
Crosswinds GTE 25 knots	**WF**	Issue via JET	
	552 ACW		No Take-off / Landings
	552 ACW/CP	Run appropriate QRC	
	SCW-1		
	507 ARW		No Take-off / Landings
	10 FLTS		Limit Take-off / Landings B-1B
Crosswinds GTE 35 knots	**WF**	Issue via JET	
	552 ACW		No Take-off / Landings
	552 ACW/CP	Run appropriate QRC	
	SCW-1		No Take-off / Landings
	507 ARW		No Take-off / Landings
	10 FLTS		No Take-off / Landings B-1B, B-52
Snow Accumulation (Greater than a Trace but LT 2")	72 ABW		CE extend or put crews on standby for road/runway clearing operations.
	AFSC		Consider 59 min Leave Rule or Liberal Leave
	552 ACW		
	552 ACW/CP	Run appropriate QRC	

	SCW-1 507 ARW 10 FLTS 38 CEIG **DISA** 72 MSG	Alert Personnel	
Frostbite Risk LOW Less than 37°F and greater than HIGH Risk Level (Observed)	**WF** **72 ABW AFSC** **552 ACW** **552 ACW/CP** **SCW-1** **507 ARW** **10 FLTS** **38 CEIG** **DISA** **72 MSG**	Issue via JET	ALL personnel outside will refer to AFPAM 48-151, Table A4.3, list of preventive measures for Frostbite LOW Risk Level

Weather Advisories	Agency	Agency Actions	Operational Impacts
Frostbite Risk HIGH LTE -18°F and greater than SEVERE Risk Level (Observed)	**WF** **72 ABW** **AFSC** **552 ACW** **552 ACW/CP** **SCW-1** **507 ARW** **10 FLTS** **38 CEIG** **DISA** **72 MSG**	Issue via JET	ALL personnel outside will refer to AFPAM 48-151, Table A4.3, list of preventive measures for Frostbite HIGH Risk Level
Frostbite Risk SEVERE LTE -32°F and greater than EXTREME Risk Level (Observed)	WF **72 ABW** **AFSC 552** **ACW** **552 ACW/CP** **SCW-1** **507 ARW** **10 FLTS**	Issue via JET	ALL personnel outside will refer to AFPAM 48-151, Table A4.3, list of preventive measures for Frostbite SEVERE Risk Level

	38 CEIG **DISA** **72 MSG**		
Frostbite Risk EXTREME LTE -52°F (Observed)	WF **72 ABW** **AFSC 552** **ACW** **552 ACW/CP** **SCW-1** **507 ARW** **10 FLTS** **38 CEIG** **DISA** **72 MSG**	Issue via JET	ALL personnel outside will refer to AFPAM 48-151, Table A4.3, list of preventive measures for Frostbite EXTREME Risk Level

Weather Advisories	Agency	Agency Actions	Operational Impacts
Lightning w/in 10NM (Observed)	**WF**	Issue via JET	Airfield Ops with OG approval only
	72 ABW AFSC		FSS outdoor facilities closed
	552 ACW		
	552 ACW/CP	Potential restriction of outdoor work	
	SCW-1	Run appropriate QRC	
	507 ARW		
	10 FLTS		
	38 CEIG		
	DISA		
	72 FSS	Close facilities	
NOTE: The FMQ-19 detects freezing precipitation, but WF personnel back-up observations from the FMQ- 19 if it is deemed unrepresentative of conditions. Freezing precipitation is only reported by WF personnel if ice collects upon contact with the ground, objects in flight (from PIREP's), or objects on the ground. The Tinker AFB standard ground object for observation of freezing precipitation is the hand railings outside of Airfield Management Operations. A forecast warning will be issued 1 hour prior to the expected occurrence.			

Attachment 6

SUPPORTED FLYING UNITS AND MISSION-LIMITING ENVIRONMENTAL CONDITIONS

Table A6.1. Flying Units Supported.

Organization	Mission
552 ACW (E-3)	Provides airborne command and control during war, peacetime, and contingency operations.
507 ARW (KC-135R) *AFRC*	Provides air-refueling services for war, peacetime, and contingency operations.
OC-ALC: 10 FLTS (B-1B, B-52, KC-135)	Provides aircraft and engine depot maintenance with flight testing prior to delivery.
SCW-1 (E-6B)	Provides command and control of the strategic nuclear weapons arsenal for war, peacetime, and contingency operations.

A6.1. Mission Limiting Thresholds.

A6.1.1. **Airframe-Specific Weather Limitations. Table A6.2** thru **Table A6.10** provide the general airframe weather limitations based on AFMAN 11-202V3, *Flight Operations*, and the limitations from aircraft specific AFI 11-2.

Table A6.2. USAF General Flight Rules Weather Limitations.

(Ref: AFMAN 11-202V3, 4.16.2.1, 4.16.4.1, 4.20.2)		
Weather Condition	Impact	Supported Unit Action
Cig/Vis LT 2,000 / 3	Alternate required	Add fuel to allow divert
Cig/Vis LT 1,000/ 2 if MAJCOM approved	Alternate required	Add fuel to allow divert
Cig/Vis LT 500 / 2	Terminal not suitable for alternate	Select another alternate

Table A6.3. E-3 Weather Sensitivities.

Condition	Limit	Response Action
Dry Crosswind Landing	Greater than 25KT	Delay or proceed to ALT
Wet Crosswind Landing	Greater than 15KT	Delay or proceed to ALT
RVR	1000	No takeoff; Delay or proceed to ALT
Icing	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Icing	Moderate observed or forecasted	Avoid prolonged operation
Turbulence	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Turbulence	Moderate observed or forecasted	Avoid
Turbulence (Mountain Wave)	Moderate or Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Lightning/Thunderstorms	Within 10 NM	GP/CC May authorize approach/departure
Lightning/Thunderstorms	Within 5 NM	No takeoff; Delay or proceed to ALT
Freezing Precipitation	Observed	No takeoff; Delay or proceed to ALT
Ceiling/Visibility	Less than 300 feet and/or less than 1NM	Qual’d AC will conduct takeoff/landing

Table A6.4. E-3 Training Maneuver Restrictions.

(Ref: AFMAN 11-2E-3GV3 *E-3 Operations Procedures*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Touch-and-go landings (**Para 4.4.**)	Minimum ceiling of 300 feet AGL and visibility of 1 SM.	1. Not accomplished when crosswinds exceed (including gusts): Dry runway--15 knots; Wet runway--10 knots. 2. Not accomplished on wet runways with moderate to heavy precipitation occurring. 3. Not accomplished on slush, ice, or snow-covered runways.
(Ref: ATP 3.3.4.2 (D) and National-SRD)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Air Refueling (**Part 2, Chapter 1)**	Minimum visibility of 1 SM at flight level.	Any turbulence that results in the moderate control of aircraft. (Cat II)

Table A6.5. KC-135 Weather Sensitivities.

Condition	Limit	Response Action
Dry Crosswind Landing	Greater than 25KT	No takeoffs, Delay or proceed to ALT
Icing	Severe observed or forecasted	No takeoffs, Delay or proceed to ALT
Turbulence	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Turbulence	Moderate observed or forecasted	Avoid
Lightning/Thunderstorms	Within 10 NM	Avoid below FL230
Lightning/Thunderstorms	Within 5 NM	No takeoff; Delay or proceed to ALT
Snow depth	LT 4” of dry snow accumulation	No takeoff; Delay or proceed to ALT

Table A6.6. KC-135 Maneuver Restrictions.

(Ref: AFMAN 11-2KC-135V3 *K/C-135 Operations Procedures*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Touch-and-Go Landings (**Para 9.3.)**	Minimum ceiling of 300 feet AGL and visibility of 3/4 SM	1. Min RVR 4,000 feet 2. Not accomplished on runways with RCR of less than 9 3. Not accomplished on slush, ice, or snow-covered runways. 4. Not accomplished with crosswinds greater than 15 knots, 10 knots for non-instructors
(Ref: ATP-56(B) *Air-to-Air Refueling*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Air Refueling (**Part 2, Chapter 1)**	Minimum visibility of 1 SM at flight level.	Any turbulence that results in the moderate control of aircraft.

Table A6.7. B-1B Weather Sensitivities.

Condition	Limit	Response Action
Dry Crosswind Landing	greater than 26KT	No takeoffs, Delay or proceed to ALT
Icing	Any	No takeoffs, Delay or proceed to ALT
Turbulence	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Turbulence	Moderate observed or forecasted	Avoid
Lightning/Thunderstorms	Within 10 NM	Avoid below FL250
Lightning/Thunderstorms	Within 5 NM	No takeoff; Delay or proceed to ALT
Induction Icing	Temperature LT 47F with RH GT 50% and visible moisture	Delay engine start-up procedures

Table A6.8. B-1B Maneuver Restrictions.

(Ref: AFMAN 11-2B-1V3 *B-1 Operating Procedures*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Touch-and-Go Landings (Normal) (**Table 6.2)**	Minimum ceiling of 500 feet AGL and visibility of 1 NM.	1. Not accomplished on wet runways and/or RCR 12 or higher 2. Not accomplished on slush, ice, or snow-covered runways. 3. Not accomplished with crosswinds greater than 20 knots
(Ref: ATP-56(B) *Air-to-Air Refueling*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Air Refueling (**Part 2, Chapter 1)**	Minimum visibility of 1 SM at flight level.	Any turbulence that results in the moderate control of aircraft.

Table A6.9. B-52 Weather Sensitivities.

Condition	Limit	Response Action
Dry Crosswind Landing	Greater than or equal to 34KT	No takeoffs, Delay or proceed to ALT
Icing	Any	No takeoffs, Delay or proceed to ALT
Turbulence	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Turbulence	Moderate observed or forecasted	Avoid
Lightning/Thunderstorms	Within 10 NM	Avoid below FL250
Lightning/Thunderstorms	Within 5 NM	No takeoff; Delay or proceed to ALT
Induction Icing	Temperature LT 47F with any RH and visible moisture	Delay engine start-up procedures
Wet Runway	0.10 inches or greater on runway	Can cause hydroplaning; No takeoff; Delay or proceed to ALT

Table A6.10. B-52 Maneuver Restrictions.

(Ref: AFMAN 11-2B-52V3 *B-52 Operations Procedures*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Touch-and-Go Landings (**Para 3.6.2.)**	Minimum ceiling of 1,000 feet AGL and visibility of 3 SM	1. Not accomplished on runways with a RCR 9 or lower 2. Not accomplished on slush, ice, or snow-covered runways. 3. Visibility can be 2 SM if under radar contact.
(Ref: ATP-56(B) *Air-to-Air Refueling*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Air Refueling (**Part 2, Chapter 1)**	Minimum visibility of 1 SM at flight level.	Any turbulence that results in the moderate control of aircraft.

Table A6.11. E-6 Weather Sensitivities.

Condition	Limit	Response Action
Dry Crosswind Landing	Greater than or equal to 34KT	No takeoffs, Delay or proceed to ALT
Wet Crosswind Landing	Greater than 12.5KT	Delay or proceed to ALT
Icing	Any	No takeoff, Delay or proceed to ALT
Turbulence	Severe observed or forecasted	No takeoff; Delay or proceed to ALT
Turbulence	Moderate observed or forecasted	Avoid
Lightning/Thunderstorms	Within 10 NM	Avoid below FL250
Lightning/Thunderstorms	Within 5 NM	No takeoff; Delay or proceed to ALT
Induction Icing	Temperature LT 47F with any RH and visible moisture	Delay engine start-up procedures
Wet Runway	0.50 inches or greater on runway	Can cause hydroplaning; No takeoff; Delay or proceed to ALT
Snow on Runway	1.5 inches or greater	No takeoffs, Delay or proceed to ALT

Table A6.12. E-6 Maneuver Restrictions.

(Ref: ATP-56(B) *Air-to-Air Refueling*)		
Maneuver	Ceiling/Visibility Minimums	Other Restriction
Air Refueling (**Part 2, Chapter 1)**	Minimum visibility of 1 SM at flight level.	Any turbulence that results in the moderate control of aircraft.

Attachment 7

TAKEOFF AND LANDING DATA

A7.1. General. The Takeoff and Landing Data (TOLD) is a Mission Weather Product produced by 72 OSS/OSW. The TOLD is a consolidated airfield weather resource for local flying units and is tailored to support unit requirements. For changes to the TOLD delivery, content, or format, contact 72 OSS/OSW Flight Chief or Flight Commander.

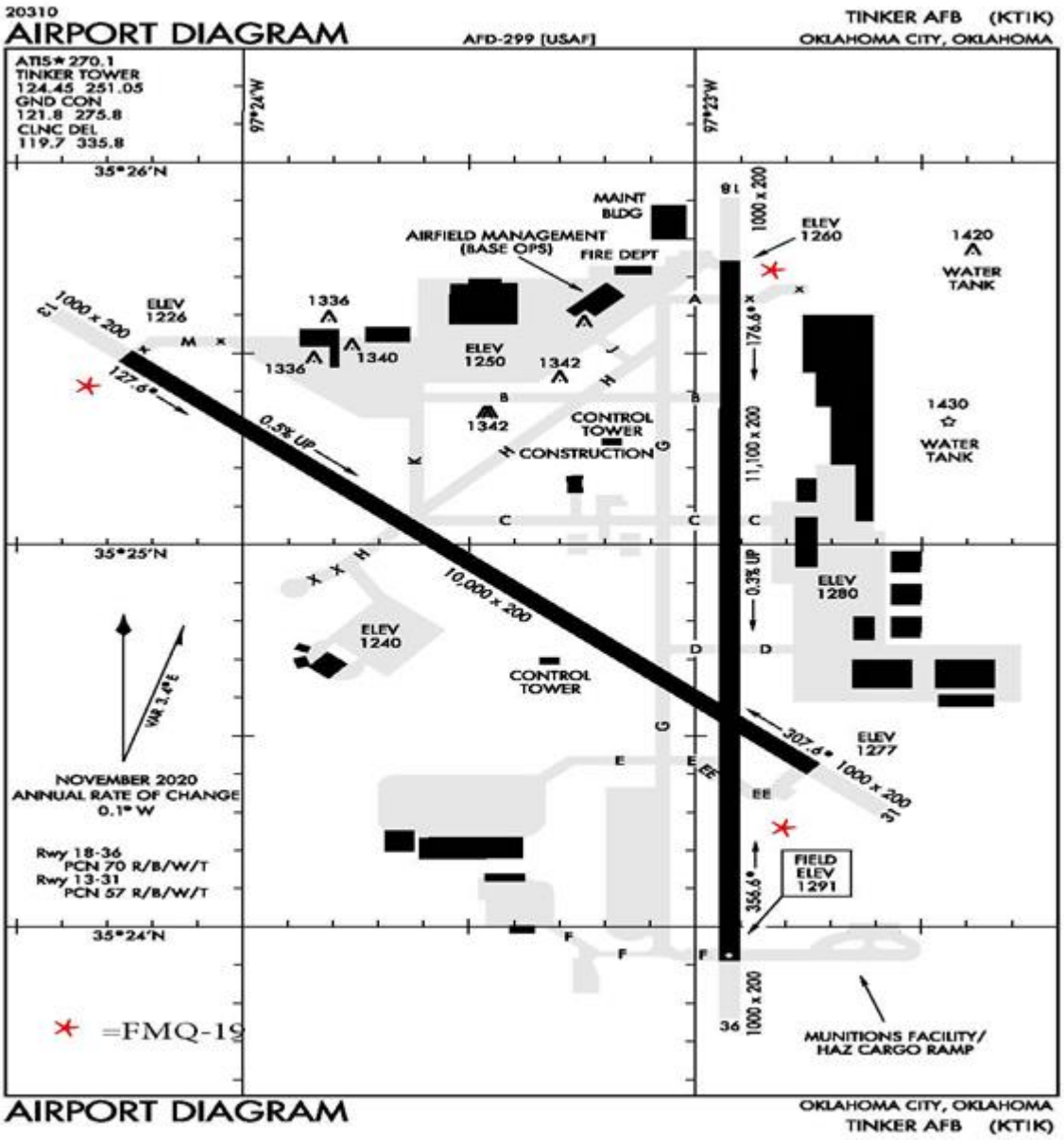
A7.2. TOLD Content. The Tinker AFB TOLD consist of an hour-by-hour forecast of temperature in degrees Celsius and Fahrenheit, wind direction and speed in knots, altimeter setting in inches of mercury and pressure altitude in feet. The heading of the form will contain contact information and valid times, as well as PMSV data.

A7.3. The TOLD form is: Issued at the same times as the TAFs, at 0900, 1700, and 0100 Zulu time during daylight savings time, and 1000, 1800, and 0200 Zulu time during standard time, when flying is scheduled during those time blocks.

Attachment 8

LOCATION OF AIRFIELD WEATHER SENSORS

Figure A8.1. Map of FMQ-19 sensors on Tinker AFB airfield.



Attachment 9

MAP OF PRIMARY AND ALTERNATE OPERATING LOCATIONS

Figure A9.1. The 72 OSW/OSW Primary and Alternate Operating Locations.