BY ORDER OF THE COMMANDER
502D AIR BASE WING

JOINT BASE SAN ANTONIO
INSTRUCTION 15-101

12 MARCH 2025

Weather

WEATHER SUPPORT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the Air Force e-Publishing website at **http://www/e-publishing.af.mil/** for downloading or ordering.

RELEASABILITY: There are no releasability restrictions on this publication

---

OPR: 502 OSS/OSW — Certified by: 502 ISG/CC

Supersedes: JBSANANTONIOI 15-101, 8 September 2021 — Pages: 61

This instruction implements Department of the Air Force Policy Directive (DAFPD) 15-1, *Weather Operations,* with additional guidance from: Air Force Manual (AFMAN) 15-111, *Surface Weather Observations*; AFMAN 15-124, *Meteorological Codes*; and Department of the Air Force Manual (DAFMAN) 15-129, *Air and Space Weather Operations*. It establishes responsibilities and weather support procedures. It provides general information for weather services, including weather observations and forecasts; weather warnings, watches, and advisories; space weather support services; dissemination of information; and reciprocal support. This publication applies to Joint Base San Antonio (JBSA) and subordinate units**,** in addition to all other tenant units assigned to or supported by JBSA with the exception of Joint Base San Antonio – Randolph which is supported by the 12th Operations Support Squadron Weather Flight. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using DAF Form 847, *Recommendation for Change of Publication*; route DAF Form 847s from the field through the appropriate functional chain of command. Request for waivers must be submitted to the OPR listed above for consideration and approval. Ensure that all records generated as a result of processes prescribed in this publication adhere to Air Force Instruction 33-322, *Records Management and Information Governance Program*, and are disposed of in accordance with the Air Force Records Disposition Schedule which is located in the Air Force Records Information Management System.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. This entire instruction was rewritten to conform to current Air Force publications policies. This instruction updates all weather products and services available at JBSA.

Chapter 1

ROLES AND RESPONSIBILITIES

1.1. General. The 502d Operations Support Squadron Weather Flight (502 OSS/OSW), or Weather Flight (WF) is the primary agency that will provide or arrange weather services and support to JBSA, and other associate units assigned to JBSA with the exception of JBSA – Randolph, which is supported by the 12th Operations Support Squadron Weather Flight (JBSA-Randolph WF). Any reference to support provided by the WF given throughout this document will exclude JBSA-Randolph. This instruction establishes requirements and outlines duties and responsibilities of the WF and reciprocal support requirements with other JBSA agencies.

1.2. Implementation. This instruction covers daily operations to include exercise and contingency operations. Unless superseded by Emergency War Orders, this instruction will be followed during wartime operations.

1.3. Concept of Operations. The WF is the single point of contact for weather information and will provide or arrange all weather services for units assigned to JBSA.

1.3.1. The WF will provide watches, warnings, advisories; Pilot-to-Metro-Service (PMSV); weather observations; Mission Execution Forecasts (MEF); flight weather briefings; Terminal Aerodrome Forecasts (TAF); staff weather services; and climate data.

1.3.2. The WF will maintain 24/7 operations unless otherwise directed by the 502 OSS Commander (CC) or Director of Operations. At a minimum, services provided during WF closure will include resource protection in the form of watches, warnings, and advisories.

1.3.2.1. The WF will provide an on-call point of contact (POC) to the 502d Command Post to provide weather support for: severe weather events, Distinguished Visitor (DV), Medical Evacuation (MEDEVAC), operational contingency missions, or any resource protection issue when WF closures are scheduled.

1.3.2.2. The 26th Operational Weather Squadron (26 OWS) will provide continuity of operations support to include issuing watches, warnings, advisories, and TAFs during emergency/unforeseen situations, and an on-call forecaster is not available.

1.4. Operating Assumptions:

1.4.1. The WF assumes adequate resources, communications, personnel, and facilities will be available to execute all base weather support.

1.4.2. 26 OWS assumes adequate resources, communications, and facilities will be available to execute the Memorandum of Agreement (Installation Data Sheet) between 26 OWS and JBSA.

1.5. Release of Weather Data to Non-Department of Defense (DoD) Agencies and Individuals. No weather data will be released to any non-DoD agencies or personnel without the express approval of 502d Air Base Wing (ABW) Public Affairs, 502 ABW Staff Judge Advocate/Legal Office, 502 CONS, or 502 OSS/CC.

1.6 Additional Weather Support. Direct all requests for additional weather support to 502 OSS Commander (CC). The 502 OSS/CC will arrange or direct services IAW this instruction, Air Education and Training Command (AETC), AFI, DAFMAN and AFPD.

Chapter 2

WEATHER FLIGHT OPERATIONS

2.1. Hours of Operation:

2.1.1. The WF will maintain 24/7 operations unless otherwise directed by the 502 OSS Commander (CC) or Director of Operations.

2.1.2. Staff services will be available Monday-Friday 0700-1600L, with the exception of federal holidays.

2.1.3. In the event any of the following criteria are occurring during scheduled closure time the WF will not close until the criteria are no longer a factor.

2.1.3.1. A watch or warning for:

2.1.3.1.1. Tornadoes.

2.1.3.1.2. Winds equal to or greater than 50 knots (kts).

2.1.3.1.3. Hail equal to or greater than ¾ inch.

2.1.3.1.4. Freezing precipitation.

2.1.3.1.5. Snow accumulation equal to or greater than 1 inch.

2.1.3.2. Kelly Field remains open for any other reason.

2.2. On-Call Forecaster Recall:

2.2.1. If the WF closes, a forecaster on-call roster will be forwarded to the 26 OWS and the 502 ABW/CP. This forecaster will be available to be recalled anytime the WF leadership, 26 OWS, and/or the 502 ABW/CP notifies them of an operational or meteorological need, or as per request of the 502 ABW/CC, 502d ISG/CC or 502 OSS/CC to reopen. When recalled, the on-call forecaster will report to the WF office and will notify the 26 OWS, 502 ABW/CP and WF leadership upon arrival.

2.2.2. In the event any of the following criteria occur during WF closure, the on-call forecaster will be recalled:

2.2.2.1. A watch or warning for:

2.2.2.1.1. Tornadoes.

2.2.2.1.2. Hail equal to or greater than ¾ inch.

2.2.2.1.3. Freezing Precipitation.

2.2.2.1.4. Snow accumulation equal to or greater than 1 inch.

2.2.2.1.5. Winds equal to or greater than 50kts.

2.2.2.2. Any mission that requires the airfield to open for an aircraft departure or arrival.

2.3. Meteorological (Weather) Equipment. The WF uses a wide range of equipment to determine the current state of the atmosphere. These critical systems are used continuously to provide customers the most timely, accurate and relevant weather intelligence possible.

2.3.1. FMQ-19 Fixed-Base Weather Observing System. The FMQ-19 is an integrated system of multiple weather sensors and data automation components that continually measure environmental conditions to provide responsive, reliable, accurate, real-time weather data to all supported agencies. The FMQ-19 measures airfield weather conditions to include, but not limited to, wind direction, wind speed, present weather, runway visual range, visibility, cloud heights as well as cloud coverage, temperature, dew point, station pressure, and lightning detection. FMQ-19 data is processed and accessed via the Automated Dissemination System (ADS), listed below in section 2.4.

2.3.2. Kestrel®. The Kestrel® is a hand-held, commercial off-the-shelf (COTS) weather instrument that provides measurements of 10 different environmental conditions: wind speed, temperature, wind chill, humidity, heat index, dew point, wet bulb, barometric pressure, pressure altitude and density altitude. It serves as the primary back-up for most of the FMQ-19 sensors.

2.3.3. Weather Radar Data. The Gibson/Ridge® (G/R 2&3) internet-based radar programs are the primary source of weather radar data for the WF. The G/R 2&3 software displays near real-time graphic and alphanumeric data critical to the timely detection of severe weather signatures. The primary weather radar is located at the National Weather Service (NWS) Office in New Braunfels, TX, which is approximately 30 miles northeast (NE) of the center of JBSA. The NWS owns, operates and is responsible for all maintenance and repair of this system. In the event of a primary radar outage, the WF will utilize data from one of the surrounding weather radars (Laughlin/Brackettville and Corpus Christi) that best suit the situation. In the event of a G/R 2&3 outage, backup radar web sites, such as Air Force Weather's BIFROST Portal and NWS webpages will be utilized.

2.3.4. Lightning Data. The WF obtains real-time nationwide lightning data via Air Force Weather's BIFROST Portal which provides detailed visual displays as well as audible alerts. In the event of an outage, lightning data will be obtained via the FMQ-19.

2.4. Communication Equipment:

2.4.1. The BIFROST Portal is Air Force Weather's (AFW) Automated Dissemination System (ADS) and is the primary method of disseminating observations, forecasts, and weather Watches, Warnings & Advisories (WWAs).

2.4.1.1. BIFROST is only accessible via web browser on the Local Area Network (LAN) and consists of a dedicated Sensor Collection Appliance (SCA) server located at the 502 Communications Squadron (502 CS), Building 1052, along with hardware that allows for a connection to the JBSA-Lackland/Kelly Airfield FMQ-19 and Airfield Automation System (AFAS) server located in the Tower. These servers, integrated through the LAN, provide weather information to the 502 ABW/CP, 433 AW/CP, JBSA-Lackland/Kelly Tower, Supervisor of Flying (SOF) and the 149th FW Operations Desk. Additionally, the 26 OWS has the capability to access the BIFROST portal in the absence of WF personnel. In the event of a LAN outage, data may be degraded or completely inaccessible.

2.4.2. Pilot-to-Metro Service (PMSV) Radio. The WF is assigned frequency 239.8 MHz for PMSV use. During PMSV outages, the 12 OSS/OSW at JBSA-Randolph will monitor the [shared] PMSV frequency and respond to "Kelly METRO" PMSV calls. For JBSA-Randolph outages, the JBSA WF will monitor and answer PMSV calls.

2.4.3. Local Area Network (LAN). The LAN is a vital tool for the WF. The internet and intranet are used to acquire weather data to provide mission essential weather information. In the event of LAN failure, all services will be significantly degraded.

2.4.4. Telephones in the WF Operations area have hotlines to ATC, 502 ABW/CP, 149th Ops Desk, and 433 AW/CP. Critical information such as watches, warnings, and advisories will be issued by telephone when BIFROST is not operational.

Table 2.1. WF Duty Phone Numbers.

Weather Technician	925-5709 / 5808
Lead Meteorological Technician	925-5400 / 4100
Weather Flight Chief	925-4100 / 5400

2.5. Building Maintenance and Power. Building 1610 is a leaseback facility with maintenance provided by Port San Antonio. The 502 Civil Engineer Squadron (CES) Leaseback office is the point of contact for any issues. Building 1610 has a backup generator that supplies power to all critical systems. The generator is maintained the 502 CES Power Production flight.

2.6. WF Limitations:

2.6.1. The official point of observation is the active FMQ-19 sensor. When augmenting the FMQ-19, the augmented point of observation will be out the door on the west side of building 1610. This point does not allow a clear, unobstructed 360-degree view around the runway complex. The technician's view from north through southeast is obstructed by trees, buildings, and hangars. The obstruction interferes with accurate visibility measurements and may obscure features moving in from the stated directions.

2.6.1.1. The WF has coordinated a Cooperative Weather Watch (CWW) with the JBSA-Lackland tower and is reliant on visibility and present weather data passed from the tower to construct representative weather reports. (See **paragraph 4.3** for details on CWW).

2.6.1.2. During augmentation high intensity security lights located on nearby buildings hinder the technician's ability to determine sky condition and visibility at night.

2.6.2. Optimum weather support is dependent on fully operational communication and meteorological sensing equipment.

2.7. Transient Aircrew Services. The WF will provide flight weather briefings to transient aircrews IAW standard duty priorities. If on the rare occasion duty priorities do not allow the WF to complete the flight weather briefing, the transient aircrew may contact the 26 OWS briefing cell or their home station WF for support.

2.8. Duty Priorities. The duty priorities of the WF are outlined in **Table 2.2**. These priorities were developed IAW DAFMAN 15-129 and AFMAN 15-111 and exist to balance limited manning and mission critical tasks. Duty priorities focus efforts during peak work periods prone to task saturation and priority conflicts. Weather technicians will use sound judgment when complying with these duty priorities, especially where there is imminent danger to life and property.

Table 2.2. WF Duty Priorities.

Priority	Duties
1	Perform WF Emergency War Order Tasks
2	Execute WF Evacuation / Continuity of Operations Plan
3	Issue/Disseminate Imminent Hazardous Weather Warnings
4	Respond to Aircraft/Ground Emergencies
5	Issue/Disseminate Imminent Weather Advisories
6	Respond to PMSV
7	Disseminate Observation / Augment FMQ-19 as Required
8	Disseminate Urgent (UUA) PIREPs
9	Issue/Disseminate All Other Weather Watches, Warnings and Advisories
10	Provide Weather Information to Supervisor of Flying
11	Severe Weather Action Plan Operations / Crisis Action Team / Severe Weather Working Group Support
12	Produce/Disseminate/Amend Terminal Aerodrome Forecast
13	Produce/Disseminate/Amend Mission Execution Forecast
14	Provide Flight Weather Briefings
15	Disseminate PIREPs
16	Provide Staff Briefings / Non-Standard Weather Products / Phone Calls
17	Respond to Support Assistance Request (SAR) or Request for Information
18	Accomplish Weather Functional Training
19	Accomplish Administrative Tasks

2.9. Continuity of Operation Plan (COOP). The WF is prepared to ensure the continuity of mission essential operations and functions without significant interruption across a wide range of potential emergencies. To ensure continuity of operations during these situations, the WF has developed processes and procedures to use alternate equipment/systems, operate from an alternate location(s), or arrange transfer of critical functions to other organizations, to include reach back to 26 OWS. Both the WF and 26 OWS provide and practice COOP procedures to ensure continuity.

2.9. 1 Emergency Evacuation to Alternate Operating Location (AOL). In the event that evacuation of the primary operating facility, Building 1610, is necessary, the WF will relocate operations to the AOL, located in the Air Traffic Control (ATC) administrative office in Building 1161. The WF will call and advise the agencies in **Table 2.3** on relocation to the AOL (or other location) and on return to the primary operating location.

Table 2.3. Weather Flight Evacuation Contact List.

Agency	Phone
ATC/SOF	210-925-2547
502 ABW/CP	DSN 471-9363 Comm (210) 221-9363/1090
502 OSS/Airfield Management	Verbal / Comm (210) 925-6803
26 OWS	DSN 331-2424 Comm (318) 529-2624
502 OSS/OSW Flight Chief	See Recall Roster

2.9.2. Weather technicians resume services by following duty-specific standard operating procedures (SOPs) and an evacuation checklist. If the primary weather sensor is inoperable, manual observations are taken through backup equipment.

2.9.3. Once established at the AOL, the WF will continue to provide weather observations, Mission Execution Forecasts (MEFs), flight weather briefings, and weather related resource protection services.

2.9.4. Pilot-to-Metro Service (PMSV) radio is not available at the AOL. During AOL operations, the WF will request the JBSA-Randolph WF monitor our shared PMSV frequency and respond to Lackland/Kelly Field PMSV calls.

2.9.5. In the event of an evacuation, support limitations will be highly dependent upon the operational status of the LAN and the FMQ-19, the primary automated surface observation system.

2.9.5.1. When augmenting the FMQ-19 from the AOL, surface observation visibilities will be limited from the northwest to the northeast by buildings and trees.

2.9.5.2. If the FMQ-19 is not operational, all surface observation will be taken manually from the official AOL observation point SE of Bldg. 1161 (see **Figure A8.3**.). Weather data will be obtained utilizing the Kestrel® backup weather sensor and all pressure and wind values will be estimated.

2.9.6. OWS Reciprocal Support.

2.9.6.1. In the event the WF experiences a full communication/electrical outage (network, phone, power), the 26 OWS will take full responsibility for all WWAs, TAFs, and flight weather briefings until outages can be corrected or overcome. Further support, if needed, will be decided upon cooperatively by the WF and 26 OWS leadership.

Chapter 3

MISSION INTEGRATION FUNCTION

3.1. General. Mission integration function consists of those actions directly related to completing the customers' daily missions (e.g., MEFs, SOF briefings, flight weather briefings). The MEF and weather liaison are the primary tools used to accomplish these tasks.

3.1.1. In this area, the WF primarily supports the 149th Fighter Wing (FW) belonging to the Texas Air National Guard (TXANG), and the 433d Airlift Wing (AW), belonging to the Air Force Reserve Command (AFRC), with periodic support provided to the Special Warfare Training Wing (SWTW). With prior coordination, the WF will also support other aviation assets deployed/temporarily assigned as needed.

3.2. Area of Responsibility (AOR). The WF will prepare tailored products to meet the differing needs of all supported agencies.

3.2.1. Tenant aircraft fly in the local pattern and in a variety of Military Operating Areas (MOA), low-level and hi-level routes, and several cross-country routes throughout Texas and neighboring states. (Diagrams in **Attachment 7** indicate supported MOAs, low-level routes, and air refueling areas/tracks).

3.2.2. 37 TRW conducts the majority of its training within JBSA-Lackland and the Chapman Training Annex.

3.2.3. SWTW conducts the majority of its training within JBSA-Lackland's Chapman Training Annex and various drop zones across south Texas.

3.3. Mission Execution Forecast (MEF):

3.3.1. The MEF is a forecast product tailored to fit the daily mission needs of the 149 FW, 433 AW, and SWTW and is considered the official flight planning forecast for all local customers.

3.3.2. The MEF will include at a minimum the forecast weather conditions at Kelly Field, to include takeoff and recovery; flight level winds; flight hazards; and space weather data, Additional information such as Military Operating Areas (MOAs), target acquisition data, illumination data for Night Vision Goggles (NVG), low level route forecasts, aerial refueling track forecasts, and drop zone forecasts will be provided as mission requirements dictate. The MEF is considered a legal flight weather briefing for local flying. An example of the MEF is in **Attachment 3**.

3.3.3. MEF Publishing. The WF will publish the MEF no later than 4 hours prior to the first scheduled takeoff of the day. The WF will e-mail the MEF to the supported unit as a backup if the primary means is unavailable.

3.3.4. No MEF will be produced for 433 AW cross county missions for which In-Flight Management (IFM) support exists. These missions will be supported by the Tactical Airlift Control Center (TACC) at Scott AFB, IL.

3.3.5. MISSIONWATCH. MISSIONWATCH is the deliberate process for monitoring terrestrial weather or the space environment for specific mission-limiting environmental factors or exploitable opportunities for local flying missions and transient missions briefed by the WF. MISSIONWATCH compels the WF to monitor missions and weather and, as

required, issue changes or amendments to respective weather products. As conditions dictate, the WF will amend the MEF, and contact the SOF and Operations Desk to pass on impacts to missions.

3.3.6. MEF Amendments. The MEF is amendable until the last mission is complete. The WF will amend the MEF anytime amendment criteria occur or is expected to occur but is not forecast or, is forecast but does not occur at the specified time unless atmospheric conditions indicate occurrence is imminent or the WF deems it to be unrepresentative of the current or forecast conditions at any location covered by the MEF. Amendment criteria can be found in **Table 3.1**. Amendments will be issued as soon as possible IAW duty priorities.

Table 3.1. MEF Amendment Criteria.

CEILING	VISIBILITY	SURFACE WIND
3,000 Ft	3 SM	GTE 50 Knots (KTS)
2,000 FT	2 SM	GTE 35 KTS
1,500 FT	1 ½ SM	Speed error of GTE 10 KTS
1,000 FT	1 SM	30° Directional error when wind is GTE 10 KTS
700 FT	½ SM	CROSSWIND GTE 25 KTS
500 FT		CROSSWIND GTE 15 KTS
200 FT		
OTHER CRITERIA		
THUNDERSTORMS	Occurring at Kelly Field, scheduled MOA or drop zone, or coverage greater than isolated within 20 nm of route	
TURBULENCE / ICING not associated with thunderstorms	Moderate or greater occurring at Kelly Field, scheduled MOA or drop zone	
Low Level Wind Shear	Occurring within 25 NM of Kelly Field	
Freezing Precipitation	Any occurrence at Kelly Field	
Weather Warning	Any other Weather Warning criteria not listed	

3.4. Flight Weather Briefings. Aircrew should request briefings from the WF at least 2-hours prior to brief time. The WF will provide a DD 175-1 *Flight Weather Briefing*, or verbal briefing to all aircrew, as duty priorities allow. If WF is unable to accommodate aircrew, the 26 OWS briefing cell will provide the flight weather briefing. Although the WF is manned whenever the airfield is open, the WF duty priorities place briefings for Kelly Field aircrews ahead of transient aircrews.

3.5. Space Weather. The WF will include space weather events in the MEF, focusing on impacts to communications. Space weather products are available via Air Force Weather Web Services (AFW-WEBS) and BIFROST. The WF will submit any reported space weather impacts through AFW-WEBS.

Chapter 4

AIRFIELD SUPPORT FUNCTION

4.1. Airfield. Airfield support function include those actions and areas that affect the JBSA-Lackland/Kelly Field aerodrome or other JBSA locations (excluding JBSA-Randolph). Services include weather observing and reporting, resource protection (detailed in **Chapter 6**) and pilot-to-metro service (PMSV), as outlined further below.

4.2. Weather Observing. Surface weather observations will be taken and disseminated IAW AFMAN 15-111, *Surface Weather Observations*. Any observation provided by the FMQ-19 is considered an official observation. Weather technicians can verify accuracy of observations and augment, when necessary, prior to dissemination. When in automated mode, the FMQ-19 continually senses and reports the following weather elements: wind, visibility, precipitation/obstructions to vision, cloud height, sky cover, temperature, dew point, altimeter setting (ALSTG) and lightning.

4.2.1. Types of Weather Observations. There are two types of observations that are used at JBSA-Lackland/Kelly Field (Routine and Special). See **Attachment 4** for observation format and decoding.

4.2.2. Aviation Routine Weather Report (METAR). A METAR is a regularly scheduled observation recorded and disseminated every 55-59 minutes after the hour. METARs are disseminated locally and longline.

4.2.3. Aviation Selected Special Weather Report (SPECI). A SPECI is an unscheduled observation recorded and disseminated when an operationally significant weather criteria has been observed as a predominant condition listed within **Attachment 2**. SPECIs contain all data elements found in a METAR plus additional remarks elaborating the data within the body of the report. All SPECI reports are prepared and transmitted after the last relevant criteria is observed and will be disseminated locally and longline.

4.2.4. Official Point of Observation. The official point of observation is the active FMQ-19 sensor group. When augmenting the FMQ-19, the observation point is located outside the WF backdoor on the west side of building 1610.

4.2.5. Observation Site Limitations. When augmenting the FMQ-19, the view from the observation point is restricted by buildings from the NE-SE, and high intensity security lights limit the ability to determine nighttime visibility, cloud amounts and heights.

4.2.6. FMQ-19 Operations. The WF will operate the FMQ-19 in full automated mode to provide the official observations for Kelly Field, except when augmentation is required IAW AFMAN 15-111.

4.2.6.1. Augmentation. Augmentation is the process of having certified weather technicians manually edit or add additional data to an observation generated by the FMQ-19. The two augmentation processes are supplementing and back-up.

4.2.6.2. Supplementing. Supplementing is the process of manually adding observed weather conditions to the observation that is beyond the capability of the FMQ-19 to detect and/or report. Technicians will supplement observations during controlled airfield hours

and check the weather at intervals not to exceed 20 minutes whenever mandatory supplemental criteria listed below are observed or forecast to occur within 1 hour.

4.2.6.2.1. Tornado (+FC) (Note) (also required when airfield is closed).

4.2.6.2.2. Funnel Cloud (FC) (Note) (also required when airfield is closed).

4.2.6.2.3. Freezing Precipitation (FZDZ/FZRA).

4.2.6.2.4. Hail (GR) (local warning criteria of ½ inch or greater).

4.2.6.2.5. Ice Pellets (PL).

4.2.6.2.6. Volcanic Ash (VA).

4.2.6.2.7. Sandstorm (SS)/Dust Storm (DS).

4.2.6.2.8. Tower Visibility Remark (TWR VIS) (Only during controlled airfield hours).

4.2.6.2.9. Immediate reporting of a tornado or funnel cloud takes precedence over all other phenomena.

4.2.6.3. Back-up. Back-up is the process of manually editing/adding data or dissemination capability when the primary method is not operational, unavailable, or suspected to be providing erroneous data.

4.2.6.3.1. Back-up is required during controlled airfield hours and may be required during uncontrolled airfield hours when elements triggering weather warnings are erroneously reported and/or when required for supplementation criteria above; otherwise, there is no requirement to back-up the system/sensor outside controlled airfield hours.

4.2.6.3.2. If the technician is backing up the wind sensor, all wind data will be estimated and WND DATA ESTMD will be added in the remarks of the observation.

4.2.6.3.3. If the technician is backing up any pressure sensor, all pressures will be estimated and SLP/ALSTG ESTMD will be added in thew remarks of the observation.

4.2.6.3.4. Altimeter Updates: When ATC does not have access to real-time altimeter settings an altimeter setting observation will be disseminated at an interval not to exceed 35 minutes when there has been a change of 0.01 inches of mercury or more since the last disseminated altimeter setting value. A METAR or SPECI taken within the established time interval fulfills this requirement.

4.2.6.4. The technician will maintain situational awareness of local weather conditions and the FMQ-19 observations during airfield operating hours. Weather technicians will also monitor area observation and forecast products to keep abreast of changes expected to affect the AOR.

4.3. Back-up Dissemination Procedures. During BIFROST or communications outages, the WF will use AF Weather Web Services (AFW-WEBS), the 26 OWS or another WF to disseminate observations longline and disseminate weather observations locally to Tower / SOF and record on the local dissemination log when required.

4.4. Terminal Aerodrome Forecast (TAF).

4.4.1. The TAF is issued at:

4.4.1.1. 0200 Zulu (Z) [(2100L Central Daylight Time (CDT) / 2000L Central Standard Time (CST)].

4.4.1.2. 1000Z (0500L CDT / 0400L CST).

4.4.1.3. 1800Z (1300L CDT / 1200L CST).

4.4.2. The TAF is disseminated locally and longline using BIFROST. During BIFROST or communications outages, the WF will notify the applicable agencies in **para 4.5** via email or phone.

4.5. Cooperative Weather Watch (CWW). The WF will maintain a CWW program with ATC personnel, SOF and the 502 Security Forces Group.

4.5.1. The WF will:

4.5.1.1. Notify tower personnel when prevailing visibility decreases to less than or increases to equal or exceed 4 statute miles and differs from the prevailing visibility by at least one reportable value.

4.5.1.2. Evaluate weather information received from a reliable source (ATC, SOF, PIREP, local law enforcement, etc.) when reported weather conditions differ from the last disseminated observation:

4.5.1.3. Generate a SPECI observation if the conditions warrant immediate dissemination and continue with back-up procedures until the FMQ-19 is back in service.

4.5.1.4. Consider information for possible inclusion into the MEF.

4.5.1.5. Provide limited weather observer training for newly-assigned ATC personnel to include documenting AF Form 3622, *Air Traffic Control/Weather Certification and Rating Record*, in their training record and weather orientation.

4.5.2. ATC personnel will:

4.5.2.1. Notify the WF when any of the following are observed:

4.5.2.1.1. Tower visibility is less than 4 statute miles and differs from the prevailing visibility by at least one reportable value.

4.5.2.1.2. Any precipitation begins or ends.

4.5.2.1.3. Lightning is observed.

4.5.2.1.4. Tornado or funnel cloud is observed.

4.5.2.1.5. Any other significant meteorological condition.

4.5.2.2. Pass WF all pertinent PIREPs received as soon as practical within established duty priorities.

4.5.2.3. Upon request, conduct ATC orientation and tour of tower for WF personnel.

4.5.3. SOF will:

4.5.3.1. Pass WF all pertinent PIREPs received as soon as practical after receipt within established duty priorities.

4.5.3.2. Notify WF of any flying schedule change due to weather.

4.5.4. 802 SFS will notify the WF of sighting:

4.5.4.1. Tornadic Activity.

4.5.4.2. Hail.

4.5.4.3. Freezing precipitation (precipitation solidifying on contact with the frozen ground).

4.6. PMSV. The WF will respond to all PMSV contacts (radio or phone patch) IAW WF Duty Priorities. The WF will provide current, relevant weather data to include observations, forecasts, watches/warnings/advisories and all weather hazards along the flight route. The WF is assigned PMSV frequency 239.8 MHz and is available for phone patches (DSN 945-5709/5808 COMM 210- 925-5709/5808).

4.6.1. The WF will solicit a PIREP during each PMSV contact with aircrew and will log them on JBSANANTONIO Form 4, *Pilot to Metro Service (PMSV) Log.*

4.6.2. The WF will request radio check daily from ATC and will log them on JBSANANTONIO Form 4.

4.7. Aircraft/Ground Mishap Data Save . When notified of any aircraft or ground mishaps (weather-related or not) requiring a weather data save as determined by AFI 51-307, *Aerospace and Ground Accident Investigations*, 502 OSS/OSW will:

4.7.1. Save all applicable and available terrestrial and space weather data. Coordinate with applicable units (e.g., 557 WW, 618 AOC (TACC)/WXD) to ensure required data is saved.

4.7.2. Ensure all data used in the development of any weather information, product, or service provided to a supported unit are saved, including but not limited to:

4.7.3. Meteorological Satellite (METSAT) imagery (e.g., Visible, Infrared, Water Vapor).

4.7.4. Radar data files or images if available (e.g., Base Reflectivity, Velocity-Azimuth Display Winds, Echo Tops, Composite Reflectivity, Base Velocity).

4.7.5. Upper air package.

4.7.6. Aviation hazard charts and information (e.g., thunderstorm, lower and upper-level turbulence, icing, etc.).

4.7.7. PIREPs, AIREPs, significant meteorological information (SIGMETs).

4.7.8. TAFs and observations for departure point, destination, and any alternate(s).

4.7.9. Weather warnings, watches, and advisories.

4.7.10. Upper air soundings enroute and nearest the mishap site.

4.7.11. Briefing material provided to the mishap aircrew (e.g., DD Form 175-1, MEF).

4.7.12. Gather and retain the saved data until requested. Send the data to the valid requesting organization (accident investigation board, safety investigation board, etc.).

4.7.13. Maintain and dispose of the data IAW the DAF Records Disposition Schedule and provide disposition instructions to respective organizations involved.

Chapter 5

STAFF WEATHER SUPPORT

5.1. General. Staff weather support includes, but is not limited to, staff weather briefings, briefing at IRC, SOF briefings, mass deployment briefing, assisting in the planning and execution of exercises, and participation in the CAT. The WF Flight Chief may delegate duties to any qualified personnel within the flight. Staff weather services are built to be flexible and are tailored to meet the needs of the staff customer. Staff weather services are available Monday - Friday during normal duty hours. These staff briefs can be provided during non-duty hours when coordinated at least 72 hours in advance.

5.2. 502 ABW Staff Brief. Upon request from the Wing Staff**,** the WF will prepare the ABW Weather Slides as shown in **Figure A10.1**, for the weekly wing stand up briefing. The WF will brief weather impacts, if any, to JBSA operations, events and visits from distinguished visitors.

5.3. Crisis Action team (CAT) Support. The WF is a regular member of the JBSA CAT. In cases when a weather representative's presence is required, the 502 ABW Chief of Readiness Plans will notify the WF as soon as the requirement is known. Unless otherwise requested, after notification a representative from the WF will prepare the briefing utilizing the standard Severe Weather Matrix Weather Slide format as shown in **Figure A10.2**. A representative from the WF will dial in or report to the CAT as required to brief and answer any questions. The weather representative will then relay any further CAT briefing or products requirement to WF personnel. Subsequent CAT weather briefings for the same event will be as detailed as the situation and wing leadership require.

5.4. Severe Weather Working Group (SWWG). The WF is a key member of the JBSA SWWG. The notification and briefing process is the same as that of the JBSA CAT, listed in section 5.3. The SWWG is normally triggered by a Special Weather Statement or notification from the WF of weather that will have an operational impact on JBSA operations and/or personnel.

5.5. Special Weather Statements (SWS). The WF will communicate potential of significant weather events and provide threat assessments via SWS to JBSA leadership. The SWS is an e-mail sent directly to senior leaders, describing the type, onset, duration, and area impacted by the event, and may also include a graphical depiction of the forecast event.

5.6. Mass Deployment/Concept Briefings. Upon request, the WF will provide a weather briefing in the event of any mass deployment of personnel or aircraft from any JBSA location. The WF requests notification 24-hours in advance of mass briefings or special situations.

5.7. IRC Weather Briefings. Upon request, the WF will brief the weather portion of all local IRC briefings. The briefing covers WF services and focuses on seasonal climatology and flight hazards. The WF requests at least 5 duty days advance notification (when possible) to prepare.

5.8. SOF Weather Briefings. The WF will brief the weather portion of all local SOF briefings, which will cover WF services and focuses on seasonal climatology and flight hazards. The WF requests at least 5 duty days advance notification (when possible) to prepare.

5.9. Exercise Planning and Input. The WF is part of the 502 ABW Wing Inspection Team and participates in planning exercises and evaluating weather support provided. Upon request, the WF will provide real and exercise weather data for exercise scenarios.

5.10. Climatology Support. The 14th Weather Squadron tracks climate statistics for JBSA. The WF will distribute climatology data to base agencies upon request.

5.11. Flight Information Publication (FLIP) Weather Updates. The WF is responsible for ensuring all Kelly Field weather information in the FLIP is accurate. All weather related updates will be requested through 502 OSS/OSAA. Information will be updated as soon as a change is confirmed, and the FLIP information will be checked for accuracy as soon as published.

5.12. Unit Radar Committee (URC). The WF is a principal member of the URC for the WSR-88D Doppler Weather Radar located, owned, and maintained by the National Weather Service office in New Braunfels, Texas.

5.13. Emergency Planning and Preparedness Team (EP2T). The WF will attend EP2T meetings in person or virtually, acting as the official point of contact for weather information and climatological data.

5.14. Airfield Operations Board (AOB). The WF will participate as a member of the AOB as requested IAW AFMAN 13-204V1, *Management of Airfield Operations*.

Chapter 6

RESOURCE PROTECTION

6.1. General. This section details resource protection support.

6.1.1. The WF provides resource protection support for JBSA Lackland (including Kelly field/KSKF), Chapman Training Annex (SKF1), JBSA Fort Sam Houston (TX17) and JBSA Camp Bullis (1TX7). Resource protection support for JBSA-Randolph and Seguin Auxiliary Airfield is provided by the 12 OSS/OSW. Resource protection support for Canyon Lake MWR is provided by the 26 OWS. The criteria below is only for areas supported by the WF.

6.2. Unit Requirements. Units are responsible for coordinating additional watch, warning and advisory support.

6.2.1. Customers requesting support must validate the requirement by providing the WF with a list of protective actions taken each time the watch/warning/advisory is received.

6.2.2. If the requirement falls within the operational capabilities of the WF, the requested support will be provided.

6.3. Weather Watches. A weather watch alerts units for the potential of weather conditions that may threaten life and property. When a weather watch is issued, all units should prepare to take protective actions in the event the weather watch is upgraded to warning status. See **Attachment 6**, Watch/Warning/Advisory Format, for watch format.

Table 6.1. Weather Watch Criteria.

CRITERIA	Desired Lead Time
Tornado**	As Potential Warrants
Severe Thunderstorm – winds GTE to 50 knots and/or hail GTE to 3/4 inch**	As Potential Warrants
Moderate Thunderstorm – winds GTE to 35 but less than 50 Knots and/or GTE to 1/2 inch but less than ¾ inch < 3/4 in**	As Potential Warrants
Damaging Winds GTE 50 knots**	As Potential Warrants
High Winds GTE 35 knots but less than 50 knots**	As Potential Warrants
Freezing Precipitation**	As Potential Warrants
Heavy Rain (2 inches of rain within 12 hours**	As Potential Warrants
Heavy Snow (1 inch of snow within 12 hours) */**	As Potential Warrants
Sandstorm/Duststorm (prevailing visibility less than or equal to 5/8sm due to blowing sand or dust) **	As Potential Warrants
Lightning	30 minutes prior to start of thunderstorm
Note: * Deviation from AFMAN 15-129. **Note**: ****** With the exception of Lightning w/in 5 NM, the Chapman Training Annex will be covered under Watches issues for JBSA-Lackland/Kelly Field.	

6.3.1. A Watch can never be a substitute for a Warning. Units will issue Warnings, as required, regardless of whether or not a Watch had previously been issued.

6.3.2. All Watches and Warnings are issued for specific and distinct locations. Local sensing equipment/observation locations are shown in **Attachment 8**, Meteorological Sensing Equipment/Observation Locations.

6.4. Forecast Weather Warning. A weather warning alerts units to an imminent or in-progress weather event that could pose a hazard to life and/or property. When warnings are issued all personnel should take protective actions immediately. See **Attachment 6**, Watch/Warning/Advisory Format, for example warning format.

Table 6.2. Weather Warning Criteria.

CRITERIA	Desired Lead Time
Tornado	15 Minutes
Severe Thunderstorm (Wind equal to or greater than 50 knots And/or Hail equal to or greater than 3/4 in)**	120 Minutes*
Moderate Thunderstorm (Wind equal to 35 but less than 50 knots and/or hail equal to or greater than 1/2in but less than 3/4 in) **	90 Minutes*
Damaging Winds (Wind equal to or greater than 50 knots) **	120 Minutes*
High Winds (Wind equal to or greater than 35 knots but less than 50 knots) **	90 Minutes*
Freezing Precipitation	90 Minutes*
Heavy Rain (equal to or greater than 2 inches of rain within 12 hours) **	90 Minutes*
Heavy Snow (equal to or greater than 1 inch of snow within 12 hours) */**	90 Minutes*
Sandstorm/Duststorm (prevailing visibility less than or equal to 5/8sm due to blowing sand or dust) **	90 Minutes*
Lightning within 5 NM	Observed
Note: * Deviation from AFMAN 15-129. **Note**: ****** With the exception of Lightning w/in 5 NM, the Chapman Training Annex will be covered under Warnings issues for JBSA-Lackland/Kelly Field.	

6.5. Observed Weather Warning. An observed weather warning will be issued for lightning. An observed warning will only be issued when the condition occurs. During airfield closure hours, or in the event the WF is unable to issue, 26 OWS will issue an observed warning. See **Attachment 6** for sample warning format.

6.6. Weather Advisories. Weather advisories are weather information bulletins to alert base units to specific mission-impacting criteria not defined as weather watch or warning criteria.

6.6.1. Observed Weather Advisories:

6.6.1.1. Upon initial occurrence, the technician will issue the advisory with a valid time of Until Further Notice (UFN).

6.6.1.2. Once issued, observed advisories are canceled when the forecaster can reasonably determine that atmospheric conditions no longer support reoccurrence. Example advisory format is found in **Attachment 6**.

Table 6.3. Observed Weather Advisory Criteria.

CRITERIA	VALID
Moderate or Greater Turbulence W/IN 25 NM of Kelly Field	UFN
Icing (any intensity) W/IN 25 NM of Kelly Field	UFN
Low Level Wind Shear at Kelly Field	UFN
Crosswind 15-25 KTS	UFN
Crosswind greater than 25 KTS	UFN
Ice FOD Conditions*	UFN
Index Thermal Stress (ITS) Conditions (Caution & Danger)	+1 Hour after last Local Fighter sortie
Note: * Issued by the 26 OWS if the WF is closed.	

6.6.2. Forecast Weather Advisories.

Table 6.4. Forecast Weather Advisories Criteria.

CRITERIA	Desired Lead Time
Winds GTE 25kts but less than 35kts*	1-Hour
Hard Freeze (Temp less than or equal to 25°F)	6-Hours
Note: * Issued for Kelly Field only	

6.7. Dissemination. Dissemination of watches, warnings and advisories, extensions, and cancellations are done via BIFROST. The WF will confirm receipt through BIFROST. (See **Attachment 6** for more information on dissemination).

6.7.1. In the event of a BIFROST or communications outage, watches, warnings, and advisories will only be disseminated by phone or e-mail notification to the agencies listed in **Table 6.5**.

Table 6.5.

Order of Dissemination
ATC / SOF
502 ABW/CP
Airfield Management
149th FW/Ops Desk
433 AW/CP
149th FW/MOC

6.8. Numbering of Weather Alerts. Weather alerts include Watches, Warnings (observed and forecasted) and Advisories (observed and forecasted). Numbers are assigned sequentially, by month and the number of the watch, warning, or advisory. For example, warning number 04-001 would be the first warning during the month of April.

6.9. Operational Reports (OPREP). 502 ABW/CP will initiate the process of reporting weather-related damage on JBSA to higher headquarters. The weather flight will provide the following to the 502 ABW/CP, the 502 OSS/CC and 19 AF/A3OW:

6.9.1. Officially reported severe weather phenomena that occurred at JBSA.

6.9.2. Operational status of all-weather equipment.

6.9.3. Weather-related damage called in to or observed by WF personnel.

6.9.4. Valid Weather Watches, Warnings, and Advisories at time of occurrence.

6.10. Chemical/Effective Downwind Message:

6.10.1. The WF can create a web-based or manual Chemical Downwind Message (CDM) and Effective Downwind Message (EDM) upon request.

6.10.2. WF members serve as Subject Matter Experts and will provide weather data to 902 CES/CEX upon request.

6.11 Severe Weather Action Plan (SWAP).

6.11.1. The purpose of SWAP is to ensure sufficient personnel are available for the WF to systematically and collectively manage the additional strain and decision making processes that accompany severe weather.

6.11.2. When directed by the 502 OSS/CC, Weather Flight Chief or 502 ABW/CP, the WF will activate the Severe Weather Action Team (SWAT). Once activated, the SWAT will provide clear and timely notification of any severe weather threats. The SWAT Leader will recall additional members as needed to intensify METWATCH, operate the radar, and record and disseminate observations.

6.11.3. SWAP will be implemented and the SWAT will be activated any time:

6.11.3.1. Severe Weather Watch or Warning has been issued for JBSA.

6.11.3.1.1. Severe weather is defined as:

6.11.3.1.1.1. Tornadic Activity.

6.11.3.1.1.2. Damaging Winds GTE 50 Knots.

6.11.3.1.1.3. Large Hail GTE ¾ inch.

6.11.3.1.1.4. Freezing Precipitation.

6.11.3.1.1.5. Snowfall greater than or equal to 1 inch.

6.11.3.2. Severe weather has been observed.

6.11.3.3. The shift leader determines the potential for severe weather is strong enough to warrant SWAT activation. **Note:** If the event poses an imminent threat to life and/or property the WF will issue the appropriate Weather Warning prior to calling SWAT leader.

6.11.4. The WF Chief or duty forecaster may activate the SWAT but can delay actual formation anytime the potential or expected onset time of severe weather is more than 2-hours beyond notification time.

6.11.5. When the WF is closed, 26 OWS will pass all watches, warnings, and advisories to the 502 ABW/CP, who will then pass any *severe* watches or warnings to the on-call forecaster or the WF Flight Chief if the on-call forecaster is not available. The on-call forecaster will assess the situation and determine the need to activate the SWAP.

6.12. Hurricane/Tropical Storm Notifications:

6.12.1. Hurricane/Tropical Storm Bulletins are issued to alert agencies of the potential for winds 50 knots or greater within 72, 48, 24, or 12 hours respectively. These special bulletins are based on the National Hurricane Center (NHC) forecasts and outlined in the Hurricane Contingency Response Plan. Information will include current storm location, forecast track with maximum wind speeds and intensity trend. IAW DAFMAN 15-129, the WF will not deviate from the official NHC forecast track and intensity but may depict weather impacts to JBSA based on localized effects expected. (**Note:** Tropical Cyclone Outlooks beyond 48-hours contain a high degree of uncertainty and should be utilized with caution.)

Table 6.6. Hurricane/Tropical Storm Condition Advisories.

HURCON	CRITERIA
5	Surface winds in excess of 50 kts (58 mph) are possible within 96 hours
4	Surface winds in excess of 50 kts (58 mph) are possible within 72 hours
3	Surface winds in excess of 50 kts (58 mph) are possible within 48 hours
2	Surface winds in excess of 50 kts (58 mph) are possible within 24 hours
1	Surface winds in excess of 50 kts (58 mph) are possible within 12 hours
1C	Caution: Winds of 35-49 kts (40-57 mph) sustained are occurring
1E	Emergency: Winds of 50 kts (58 mph) sustained and/or gusts of 60 kts (69 mph) or greater are occurring
1R	Recovery: Destructive winds have subsided and are no longer forecast to occur; survey and work crews are permitted to determine the extent of the damage and to establish safe zones around hazards (e.g. downed power lines, unstable structures). Non-essential personnel are asked to remain indoors

6.12.2. Once tropical activity has begun, the NHC will issue forecast bulletins every 6 hours at 03Z, 09Z, 15Z, and 21Z. The WF will provide updates to hurricane bulletins locally as required. The WF will brief JBSA leadership and local flying customers on any tropical depression, tropical storm, or hurricane that is physically, or is forecast into the area, as depicted in **Attachment 9**.

6.12.3. 502 ABW/CC will issue updates to the HURCON status as necessary. The WF will attend CAT meetings and provide detailed reports on the progress of the tropical storm/hurricane upon request.

6.13. Bio-environmental Weather Information.

6.13.1. The WF will issue Index of Thermal Stress advisories during local flying hours only.

6.13.2. The WF will provide forecast heat index/wind chills on the Daily Weather Slide as shown in **attachment 11**. The WF will provide current heat index/wind chills values when requested based on what the FMQ-19 data is reporting. Heat Index values are not the same as Wet Bulb Globe Temperature (WBGT).

6.13.3. The 559 AMDS Bioenvironmental Engineering Flight is responsible for providing WBGT (Flag Conditions) information. Upon request, the WF will provide the daily forecasted high temperature to the Bioenvironmental Engineering Flight.

Chapter 7

RECIPROCAL SUPPORT

7.1. General. The WF requires mutual support in order to accomplish its mission. This chapter outlines the necessary support from other agencies on and off JBSA. (IAW DAFMAN 15-129, support to the WF dictated by AF or other local directives is not included in this chapter.)

7.2. 502 ABW/CC. The 502 ABW/CC will chair a review of installation severe weather preparedness, capabilities, requirements and procedures at least annually.

7.3. 502 Communications Squadron (502 CS). The 502 CS will:

7.3.1. Provide or arrange for the installation and maintenance of all computers, telephones and AF network capabilities.

7.3.2. Provide space and accessibility as needed in Bldg. 1052 for the SCA server hardware.

7.4. 502 ABW CP. The 502 ABW will:

7.4.1. Provide indoctrination/orientation tours to newly assigned weather personnel.

7.4.2. Disseminate weather warnings, watches, and advisories (updates, and cancellations) over the Emergency Notification System (ENS) and/or Giant Voice broadcast system, as applicable.

7.4.3. Activate the base siren upon notification of a Tornado Warning until the Tornado Warning has been cancelled.

7.4.4. Notify the WF of all reports received of a known or suspected tornado or funnel cloud.

7.4.5. Notify the WF of any significant weather-related event causing damage or injuries.

7.4.6. Notify the WF on-call forecaster (during hours of WF closure) of:

7.4.6.1. Any severe watch or warning issued by the 26 OWS (see tables **6.1** and **6.2**.).

7.4.6.2. Scheduled arrival or departure of MEDEVAC, DV, or any other action that requires the airfield to open.

7.5. 502 OSS/OSA.

7.5.1. 502 OSS/OSAT (Tower) will:

7.5.1.1. Provide a location for the WF AOL. See **paragraph 1.7**. 24-hour access to the AOL must be available, to include entry into building 1161.

7.5.1.4. Notify the WF of changes to active runway and FMQ-19 sensor.

7.5.1.5. Initiate a daily performance check of the weather/tower hotline. The WF will initiate a daily performance check of the PMSV radio.

7.5.1.6. Provide tower orientation for all newly assigned weather personnel.

7.5.2. 502 OSS/OSAA will:

7.5.2.1. Notify the WF of aircraft mishaps and in-flight or ground emergencies.

7.5.2.2. Forward the WF initiated changes of Flight Information Publications (FLIP) and chart orders to the appropriate agencies for action.

7.5.2.3. Notify weather flight personnel in writing of all impending changes to any FLIP affecting Kelly Field takeoff and/or landing minimums.

7.5.2.4. Provide airfield indoctrination/orientation training for all newly assigned weather personnel.

7.5.3. 502 OSS/OSAM will:

7.5.3.1. Serve as the 24-hour focal point for the maintenance and installation of all AF-approved and fielded meteorological sensing equipment, and associated communication infrastructure.

7.5.3.2. Coordinate with the WF before performing maintenance on any meteorological sensing equipment.

7.6. 149 FW and 433 AW. The 149 FW and 433 AW will:

7.6.1. Ensure current flying schedule is available to the WF.

7.6.2. Provide the WF with any changes in flight times or type of support required.

7.6.3. Pass PIREPs to the WF or to ATC/SOF. PIREPs that include cloud amounts, bases and tops, as well as turbulence and icing and any other significant weather encountered are particularly valuable.

7.6.4. Ensure 149 SOF/Top III personnel receive a weather orientation briefing during initial SOF qualification.

7.6.5. Provide timely feedback/mission debrief to the WF to include weather impacts on mission completion. The inclusion of the impact of forecasted go/no go versus actual weather conditions experienced will greatly assist the WF in completing a constructive mission execution forecast verification program in order to improve the MEF process.

7.6.6. Coordinate all additional requirements with the WF management.

7.6.7. Provide operations orientation tour for all newly assigned weather personnel.

7.7. SWTW. The SWTW will:

7.7.1. Provide the WF with at least 24-hours advance notice of all drop zone forecast requirements. Coordination must include required brief time, type, location, time, and altitude of jump as well as the unit and call sign (if known) of the delivery aircraft.

7.8. 502 SFS. The 502 SFS will:

7.8.1. Inform the WF of any report of or the actual sighting of tornadic activity, hail, or freezing precipitation.

7.9. 502 CEG. The 502 CEG will:

7.9.1. Provide and/or arrange for maintenance of real property in support of meteorological equipment.

7.9.2. Provide advance notification of programmed power changes/interruptions to include testing of the emergency power generator for building 1610.

7.10. 12 OSS/OSW. The 12 OSS will:

7.10.1. Provide backup PMSV support as required (see **paragraph 3.5.2**.).

7.11. Weather Support Recipients. All weather support recipients will:

7.11.1. Notify the WF through the formal chain of command when new weather support requirements are identified.

7.11.2. Coordinate changes or additions to this document as soon possible.

RANDY P. OAKLAND, Brigadier General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DAFPD 15-1, *Weather Operations*, 28 May 2024

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

AFMAN 10-206, AECT SUP, *Operational Reporting (OPREP)*, 11 May 2021

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

DAFI 10-2503, *Chemical, Biological, Radiological, Nuclear (CBRN) Defense Program*, 6 Oct 2023

AFMAN 11-2C-5 Volume 3, C-5 *Operations Procedures*, 20 October 2022

AFH 11-203V2, *Weather for Aircrews – Products and Services*, 13 August 2015

AFMAN 11-202V3, *Flight Operations*, 10 January 2022

AFMAN 11-2F-16-Volume 3, F-16—*Operations Procedures*, 4 February 2020

DAFMAN 13-204V3, *Air Traffic Control*, 26 April 2024

AFMAN 13-204V1, *Management of Airfield Operations*, 22 July 2020

DAFMAN 13-204V4, *Radar, Airfield, and Weather Systems*, 13 May 2024

AFH 15-101, *Meteorological Techniques*, 5 November 2019

AFMAN 15-111, *Surface Weather Observations*, 12 March 2019

AFMAN 15-124, *Meteorological Codes*, 16 January 2019

DAFMAN 15-129, *Air and Space Weather Operations*, 7 September 2023

DAFI 48-151, *Thermal Stress Program*, 2 May 2022

AFI 48-151 JBSANANTONIOSUP, *Thermal Illness Prevention Program*, 6 September 2018

AFI 51-307, *Aerospace and Ground Accident Investigations*, 18 March 2019

DAFMAN 91-203, *Air Force Occupational Safety, Fire and Health Standards*, 25 March 2022

DAFI 91-204 AETCSUP, *Safety Investigations and Reporting*, 11 August 2022

502 ABW, Hurricane Contingency Response Plan, 1 August 2022

502 ABW, Severe Weather Plan, June 2022

Joint Base San Antonio - Lackland, Installation Data Sheet, 13 March 2023

Prescribed Forms

JBSANANTONIO Form 4, *Pilot to Metro Service (PMSV) Log*

Adopted Forms

DD 175-1, *Flight Weather Briefing*

DAF Form 847, *Recommendation for Change of Publication*

AF Form 3622, *Air Traffic Control/Weather Certification and Rating Record*

Abbreviations and Acronyms

ABW—Air Base Wing

ADS—Automated Dissemination System

AETC—Air Education and Training Command

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFW—Air Force Weather

AFW-WEBS—Air Force Weather Web Service

AGL—Above Ground Level

AOL—Alternate Operating Location

AOR—Area of Responsibility

ATC—Air Traffic Control

AW—Airlift Wing

BKN—Broken

BLDG—Building

BMT—Basic Military Training

CAT—Crisis Action Team

CC—Commander

CDM—Chemical Downwind Message

CDT—Central Daylight time

CEG—Civil Engineer Group

CONUS—Continental United States

COOP—Continuity of Operations

COTS—Commercial Off-The-Shelf

CP—Command Post

CST—Central Standard Time

CWW—Cooperative Weather Watch

DAFPD—Department of the Air Force Policy Directive

DoD—Department of Defense

DSN—Defense Switched Network

DTG—Date Time Group

DV—Distinguished Visitor

EDM—Effective Downwind Message

ENS—Emergency Notification System

ETA—Estimated Time of Arrival

FLIP—Flight Information Publication

FW—Fighter Wing

GTE—Greater Than or Equal to

HQ—Headquarters

HURCON—Hurricane Condition

IAW—In Accordance With

IFM—In-Flight Management

IRC—Instrument Refresher Course

ISG—Installation Support Group

ITS—Index of Thermal Stress

JBSA—Joint Base San Antonio

KSKF – 4—letter ICAO identifier for Kelly Field

KTS—Knots

L—Local Time

LAN—Local Area Network

LLWS—Low Level Wind Shear

MEDEVAC—Medical Evacuation

MEF—Mission Execution Forecast

METAR—Routine Meteorological Observation Report

METWATCH—Meteorological Watch

MOA—Military Operating Area

MPH—Miles per Hour

NE—Northeast

NHC—National Hurricane Center

NM—Nautical Miles

NOTAM—Notice to Airmen

NVG—Night Vision Goggles

NWS—National Weather Service

OPR—Office of Primary Responsibility

OPS—Operations

OPREP—Operational Reports

OSA—Airfield Operations

OSS—Operations Support Squadron

OSW—Weather Flight

OVC—Overcast

OWS—Operational Weather Squadron

PIREP—Pilot Report

PMSV—Pilot-to-Metro Service

POC—Point of Contact

RDS—Records Disposition Schedule

RND—Randolph Airfield Identifier

RVR—Runway Visual Range

RVRNO—Runway Visual Range Information Not Available

SCT—Scattered

SFG—Security Forces Group

SM—Statute Mile

SOF—Supervisor of Flying

SOP—Standard Operating Procedures

SPECI—Special Observation

SWAP—Severe Weather Action Plan

SWAT—Severe Weather Action Team

SWTW—Special Warfare Training Wing

SWWG—Severe Weather Working Group

TACC—Tanker Airlift Control Center

TAF—Terminal Aerodrome Forecast

TEMPO—Temporary

TRS—Training Squadron

TRW—Training Wing

TXANG—Texas Air National Guard

UA—Routine PIREP

UFN—Until Further Notice

URC—Unit Radar Committee

UTC—Coordinated Universal Time

UUA—Urgent PIREP

VFR—Visual Flight Rules

WBGT—Wet Bulb Globe Temperature

WF—Weather Flight

WW—Weather Wing

WWA—Watch, Warning, Advisory

Z—Zulu

Terms

557th Weather Wing (557 WW)—A strategic weather center at Offutt AFB NE, providing atmospheric data and analysis/forecast products required by the regional OWSs and the WFs worldwide. The 557 WW provides the centralized repository for global observations and forecasts that are data based at 557 WW and, in turn, disseminated to DOD weather data users worldwide. In addition to global observations and forecasts collected from worldwide sources, the 557 WW collects meteorological satellite data from multiple sources. Based on global analysis of available data, 557 WW creates global analysis and forecast products to meet the forecast requirements of its supported users.

Advisory—A specific notice to operational agencies of environmental phenomena impacting operations.

Alternate Operating Location (AOL)—The location to which the WF will move in the event that BLDG 1610 is evacuated.

Cooperative Weather Watch (CWW)—A method of collective observing shared by the weather observer, tower personnel, and SOF. The weather observer collates information from other sources and disseminates as needed.

Desired Lead Time—The total amount of time required to disseminate a forecast WWA through the local dissemination tree to all affected end-users plus the amount of advance notice a supported organization requires to complete mandatory protective actions before the onset of a particular weather phenomenon.

Flight Information Publication (FLIP) —Booklet containing aircraft approach, landing, and takeoff guidance at various airfields, to include Kelly Field. Also lists weather restrictions on airfields. **https://aeronautical.nga.mil/flip**

Hurricane Condition (HURCON)—A condition outlining the threat of a tropical storm or hurricane

Installation Data Page (IDP)—A document defining the specific environmental support requirements, technical data, reference material, COOP Procedures, and contact information for each organization receiving TAF and WWA support from the Weather Flight and 26 OWS.

Instrument Refresher Course (IRC)—Continuation training for aircrews. The WF provides instructors and material for the weather segment of the course.

METAR—A regular observation, taken and disseminated locally and longline.

Meteorological Watch (METWATCH)—A deliberate process for monitoring the terrestrial weather or 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 and determine courses of action to update or amend a forecast product or group of products and notify designated agencies.

Military Operating Area (MOA)—An area used for flying training.

Mission Execution Forecast (MEF) —A MEF is how flight weather information is passed to the flying customer. It can take the form of a verbal briefing, a 175-1 briefing, a weather flimsy, or other forms.

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

Operational Weather Squadron (OWS) —A regional forecast and weather center. Commonly referred to as a "hub," JBSA-Lackland's servicing OWS is the 26 OWS located at Barksdale AFB, Louisiana

Pilot Report (PIREP)—A report containing weather data passed from aircrew to the weather flight.

SPECI—Observation taken to report the occurrence of special criteria, taken and disseminated locally and long line.

Terminal Aerodrome Forecast (TAF)—An official meteorological product for flight planning and command and control activities.

Warning—A notification of a weather condition imminent or in progress that is a threat to human life and property.

Watch—A notification that conditions are right for the formation of weather conditions that pose a threat to human life and property.

Attachment 2

SPECIAL OBSERVATION CRITERIA

A2.1. SPECI observations will be taken and disseminated IAW AFMAN 15-111, and DoD Flight Information Publications (FLIP). A SPECI observation will be taken if:

A2.1.1. Ceiling. The ceiling forms or dissipates below, decreases below, or if below, increases to equal or exceed:

Table A2.1. SPECI Ceiling Criteria.

CRITERIA	IAW	CRITERIA cont...	IAW
9,000 feet	LOCAL REQUIREMENT	1,300 feet	FLIP
8,000 feet	LOCAL REQUIREMENT	1,000 feet	AFMAN 15-111
5,500 feet	LOCAL REQUIREMENT	800 feet	AFMAN 15-111
3,000 feet	AFMAN 15-111	700 feet	AFMAN 15-111
2,700 feet	LOCAL REQUIREMENT	600 feet	FLIP
2,500 feet	FLIP	500 feet	AFMAN 15-111
2,200 feet	LOCAL REQUIREMENT	400 feet	FLIP
2,000 feet	AFMAN 15-111	300 feet	AFMAN 15-111
1,500 feet	AFMAN 15-111	200 feet	FLIP

A2.1.2. Sky Condition. A layer of clouds or obscuring phenomena aloft is observed below 1,300 feet, and no layer aloft was reported below 1,300 feet in the preceding observation.

A2.1.3. Visibility. The visibility decreases to less than or if below, increases to equal or exceed:

Table A2.2. SPECI Visibility Criteria.

CRITERIA	IAW	CRITERIA cont...	IAW
5 SM	Local Requirement	1 3/8 SM*	FLIP
3 SM	AFMAN 15-111 & FLIP	1 1/4 SM	FLIP
2 1/2 SM	Local Requirement & FLIP	1 1/8 SM*	FLIP
2 SM	AFMAN 15-111 & FLIP	1 SM	AFMAN 15-111 & FLIP
1 7/8 SM*	FLIP	7/8 SM*	FLIP
1 3/4 SM	FLIP	3/4 SM	FLIP
1 5/8 SM*	FLIP	5/8 SM*	FLIP
1 1/2 SM	FLIP	1/2 SM	AFMAN 15-111 & FLIP
Note: * FMQ-19 will not report or take SPECI			

A2.1.4. Tower Visibility. When tower visibility differs from prevailing visibility and notified by the control tower that tower visibility has decreased to less than or, if below, increased to equal or exceed:

Table A2.3. Tower Visibility Criteria.

3 SM
2 SM
1 SM

A2.1.5. Runway Visual Range (RVR). RVR is reported using values in **Table A2.4** whenever the prevailing visibility is less than or equal to 1 SM and/or when RVR for the active runway is less than equal to 6000 ft.:

Table A2.4. SPECI RVR Criteria.

CRITERIA	IAW
6,000 feet	AFMAN 15-111 and FLIP
5,500 feet	FLIP
5,000 feet	AFMAN 15-111 and FLIP
4,000 feet	FLIP and Local 433 AW requirement
3,500 feet	FLIP
2,400 feet	AFMAN 15-111, FLIP and Local 433 AW requirement
2,000 feet	AFMAN 15-111
1,600 feet	AFMAN 15-111 and Local 433 AW requirement
1,200 feet	AFMAN 15-111 and Local 433 AW requirement
1,000 feet	AFMAN 15-111
600 feet	AFMAN 15-111

A2.1.5.1. When the FMQ-19 or RVR sensor is inoperable the WF will report Runway Visual Range Information Not Available (RVRNO).

A2.1.5.2. A SPECI will be taken when RVR reporting criteria for the active runway is first or no longer observed, or if RVR reporting criteria is met and RVR is determined unavailable (RVRNO) or RVRNO is no longer applicable.

A2.1.6. Tornado or Funnel Cloud.

A2.1.6.1. Is observed.

A2.1.6.2. Disappears from sight or ends.

A2.1.7. Thunderstorm.

A2.1.7.1. Begins

A2.1.7.2. Ends (15 minutes after last occurrence of criteria for a thunderstorm). **Note:** A SPECI is not required to report the beginning of a new thunderstorm if one is currently reported as in progress at the station.

A2.1.8. Squall. A squall occurs when a strong wind characterized by a sudden onset in which the wind speed increases by at least 16 knots and is sustained at 22 knots or more for at least 1 minute.

A2.1.9. Precipitation:

A2.1.9.1. Hail begins or ends.

A2.1.9.2. Freezing precipitation begins, ends, or changes intensity.

A2.1.9.3. Ice Pellets begins, ends, or changes intensity.

A2.1.9.4. Snow begins, ends, or changes intensity.

A2.1.9.5. Any other type of precipitation begins or ends**. Note:** Except for freezing rain, freezing drizzle, hail and ice pellets, a SPECI is not required for changes in type (e.g., drizzle changing to snow grains) or the beginning or ending of one type while another is in progress (e.g., snow changing to rain and snow).

A2.1.10. Wind Shift: Wind direction changes by 45 degrees or more in less than 15 minutes with wind speeds GTE 10kts throughout the wind shift.

A2.1.11. Volcanic Ash: Volcanic ash is first observed.

A2.1.12. Aircraft Mishap (ACFT MSHP): Upon notification of an aircraft mishap a full element SPECI will be immediately encoded and disseminated **regardless** of FMQ-19 status.

A2.1.13. Resumption of Observing Services: If augmenting FMQ-19, the technician must provide a SPECI observation within 15 minutes after returning to duty following a break in observing services.

A2.1.14. Other: Any other meteorological event that the Weather Technician deems critical.

Attachment 3

MISSION EXECUTION FORECAST

Figure A3.1. TAKE OFF SLIDE. (NOTE: Times are in Zulu).

	Date:	1-Aug-20	Updated		Valid Period:	01/2200 - 02/0400	Initials	RM	

DEPARTURE WEATHER FOR JBSA-LACKLAND, TX

	TIME (ZULU)	SKY CONDITION	VIS	WX	WIND (KTS)	X-WIND (KTS)	CAT II TURB	ICING	LLWS	TEMP °C	ALSTG	PA	REMARKS
	2200	SCT060CB SCT170 BKN250	7	VCTS	06012	12	NONE	NONE	NONE	38	29.90	709	MAX TP: 38C @ 222
AFT	2400	FEW060 SCT250	7	NSW	08007	7	NONE	NONE	NONE	34	29.89	718	

WARNINGS, WATCHES & ADVISORIES

WARNINGS

Warn #:	Criteria	Valid

WATCHES

Watch #:	Criteria	Valid

ADVISORIES

Adv. #:	Criteria	Valid
08-001	ITS DANGER	2000-0400

PLANNING FORECAST LINK

Solar / Lunar Data Z	
Sunrise:	1155
BMCT:	1129
BMNT:	1058
Sunset:	2/0126
EECT:	2/0152
EENT:	2/0222
Moonrise:	2/0016
Moonset:	2/1045
Illum %:	92

	BASE	TOP
FRZLVL	150	
FRZLVL		
Contrails:	408	618

PIREPS PLEASE!!!
Contact us on UHF 239.8
or relay through ATC,SOF, or OPS Desk
FEEDBACK

CLIMB WINDS		
LVL	WND	T°C
500	26020	-63
450	26030	-60
400	24035	-55
350	26030	-44
300	27030	-31
250	27025	-20
200	31020	-9
180	32020	-5
160	33020	-1
140	33020	2
120	34015	4
100	35015	8
080	01015	12
060	03010	18
040	05005	23
020	09005	29

TEXAS SPACE WX IMPACTS

UHF	SINGLE FRQ.
NONE	NONE
SATT COMM	GPS COM

Figure A3.2. EXAMPLE ROUTE FORECAST

YANKEE MOA						
VALID TIME	22	23	24	3	4	5
GO / NO GO	GO	GO	GO	GO	GO	GO
CLOUD LAYERS BASES/TOPS	SCT-BKN 050/090	SCT-BKN 050/090	SCT-BKN 050/090	FEW-SCT 020/050	FEW-SCT 020/050	FEW-SCT 020/050
	BKN 250/300	BKN 250/300	BKN 250/300	SCT 250/280	SCT 250/280	SCT 250/280
FLT VIS	7+	7+	7+	7+	7+	7+
TSTMS	ISOLD MT400	ISOLD MT400	ISOLD MT400	NONE	NONE	NONE
ICING	NONE	NONE	NONE	NONE	NONE	NONE
TURB	NONE	NONE	NONE	NONE	NONE	NONE
REMARKS	NONE	NONE	NONE	NONE	NONE	NONE

NOTE: Weather impact color code GREEN = GO, RED = NO GO
See Tables 3.3, 3.4, 3.5 and 3.6 for GO/NO GO criteria for specific mission types SKY CON & B/T = Cloud cover and Cloud Base/Top information

Figure A3.3. SWTW Jump Forecast Example.

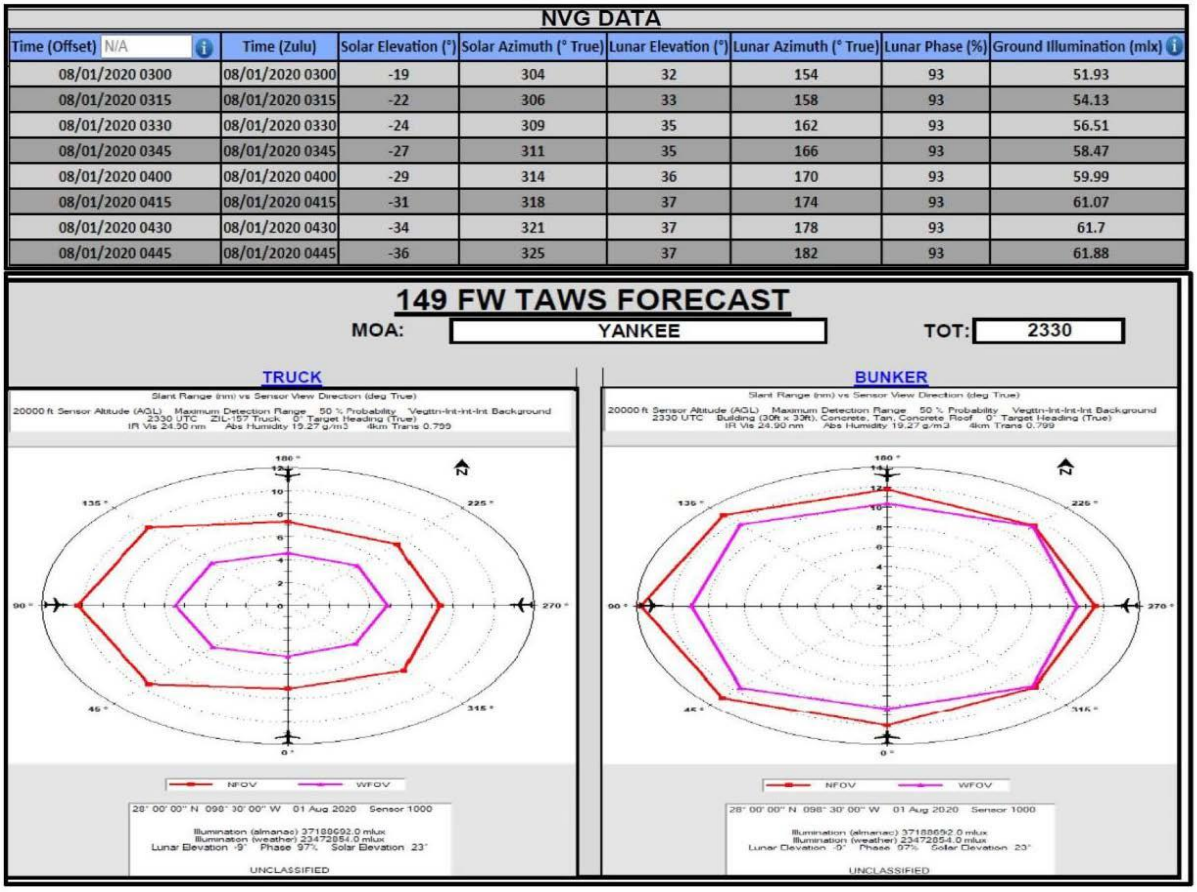
BATG JUMP FORECAST			
LOCATION		DATE	VALID TIME
KELLY DZ		9/30/2020	1700-2100Z
WEATHER			
CLOUDS:	BKN 050/080		
VISIBILITY:	7+		
PRECIPITATION:	NONE		
ALSTG (INS):	29.82 INS		
ALSTG (MB):	1009.8 MB		
WINDS			
ALTITUDE	DRCTN SPEED(KTS)	TEMP (°C)	D-VALUES (FT)
SURFACE	22005	27	+0188
1,000FT	22015	22	+0227
2,000FT	23010	19	+0264
3,000FT	23010	17	+0298
4,000FT	15010	13	+0331
5,000FT	15010	13	+0365
6,000FT	12010	13	+0400
7,000FT	07010	14	+0445
8,000FT	02005	13	+0498
9,000FT	36005	12	+0553
10,000FT	36010	10	+0610
11,000FT	01010	9	+0669
12,000FT	35010	7	+0727
13,000FT	35010	5	+0785

Figure A3.4. Alternate Forecast Example.

ALTERNATE FORECASTS

ADDS TAFS		MIN ALSTG	TEMP	PA
KRND	FM1800 VRB06KT 9999 FEW085 SCT250 BECMG 0323/0400 VRB06KT 9999 VCSH SCT040 BKN060 TEMPO 0400/0404 34020G30KT 8000 -SHRA VCTS SCT030CB BKN040 BECMG 0405/0406 VRB05KT 9999 NSW FEW080	29.91 INS	+37 °C	+773 F
		AFT INS	°C	F
KSAT	FM1800 VRB03KT P6SM SCT050 FM032300 16005KT P6SM VCSH BKN100 FM040300 00000KT P6SM SCT100	INS	°C	F
		AFT INS	°C	F
KDLF	FM1800 14009KT 9999 SCT110 SCT140 QNH3000INS BECMG 0320/0321 14012KT 9999 VCSH SCT110 SCT140 OVC180 QNH2991INS BECMG 0402/0403 15009KT 9999 NSW FEW100 SCT140 QNH2986INS	INS	°C	F
		AFT INS	°C	F
KLRD	FM1800 12008KT P6SM SKC	INS	°C	F
		AFT INS	°C	F
KALI	FM1800 VRB04KT P6SM FEW250 FM032100 11010KT P6SM FEW250	INS	°C	F
		AFT INS	°C	F
KNGP	FM1800 08010KT 9999 FEW025 FEW250 QNH2996INS FM032000 11010KT 9999 FEW025 FEW250 QNH2992INS FM040100 15008KT 9999 FEW015 SCT250 QNH2993INS	INS	°C	F
		AFT INS	°C	F
KAUS	FM1800 VRB04KT P6SM SCT050 FM032300 04006KT P6SM VCSH BKN100 FM040300 00000KT P6SM SCT100	29.91 INS	+37 °C	+553 F
		AFT INS	°C	F
KGRK	FM1800 VRB06KT 9999 SKC BECMG 0322/0323 03009KT 9999 VCSH SCT060 BKN100 BECMG 0401/0402 09009KT 9999 NSW SCT055 BKN065	29.91 INS	+37 °C	+1026 F
		AFT INS	°C	F
KACT	FM1800 02008KT P6SM SCT100 BKN200 FM032000 03008KT P6SM VCSH SCT070 BKN100 FM040000 06007KT P6SM SCT100	29.90 INS	+37 °C	+536 F
		AFT INS	°C	F
KMAF	FM1800 13011KT P6SM FEW100	30.02 INS	+35 °C	+2780 F
		AFT INS	°C	F
KSJT	FM1800 13006KT P6SM VCSH BKN120 FM040000 14003KT P6SM SCT250	INS	°C	F
		AFT INS	°C	F
KNQI	FM1800 VRB05KT 9999 SCT020 SCT300 QNH2999INS TEMPO 0316/0320 09009KT FEW035 FEW300 BECMG 0319/0321 13014KT 9999 FEW040 FEW300 QNH2989INS FM040200 VRB05KT 9999 SKC QNH2995INS	INS	°C	F
		AFT INS	°C	F

Figure A3.5. TAWS Worksheet.



NVG DATA

Time (Offset) N/A	Time (Zulu)	Solar Elevation (°)	Solar Azimuth (° True)	Lunar Elevation (°)	Lunar Azimuth (° True)	Lunar Phase (%)	Ground Illumination (mlx)
08/01/2020 0300	08/01/2020 0300	-19	304	32	154	93	51.93
08/01/2020 0315	08/01/2020 0315	-22	306	33	158	93	54.13
08/01/2020 0330	08/01/2020 0330	-24	309	35	162	93	56.51
08/01/2020 0345	08/01/2020 0345	-27	311	35	166	93	58.47
08/01/2020 0400	08/01/2020 0400	-29	314	36	170	93	59.99
08/01/2020 0415	08/01/2020 0415	-31	318	37	174	93	61.07
08/01/2020 0430	08/01/2020 0430	-34	321	37	178	93	61.7
08/01/2020 0445	08/01/2020 0445	-36	325	37	182	93	61.88

NOTE: Top portion is NVG Illumination, and bottom portion actual TAWS Forecast to include: MOA; targets; time over target; and detection ranges for wide and narrow field of view.

Figure A3.6. Pilot to Metro Service (PMSV) Log.

PILOT TO METRO SERVICE (PMSV) LOG								
CALL SIGN	TIME (Z)	COMM CHECK	TAKE OFF (Z)	INFORMATION TO PILOT	MWA, LWW, LWA, TB, IC	PIREPS	REMARKS	INT
TWR	01/1234	X					L&C	CL
TWR	02/1204	X					L&C	CL
TWR	03/1401	X					L&C	CL
SLAM99	03/1656			WX FOR 1730 @ KSKF VRB06KT 9999 SCT045 2998 37C				CL
TWR	05/1250	X					L&C	JT
TWR	06/1358	X					L&C	JT
TWR	07/1255	X					L&C	JT
TWR	08/1329	X					L&C	AH
TWR	09/1203	X					L&C	AH
TWR	10/1255	X					L&C	AH
TWR	11/1245	X					L&C	JT
TWR	12/1235	X					L&C	AH
TWR	13/1202	X					L&C	AH
TWR	14/1152	X					L&C	DAX
TWR	15/1212	X					L&C	DAX
TWR	16/1157	X					L&C	DY
TWR	17/1257	X					L&C	DY
TWR	18/1422	X					L&C	JRD
TWR	19/1330	X					L&C	JRD
TWR	20/1153	X					L&C	JRD

Attachment 4

OBSERVATION/PIREP FORMAT

A4.1. General: This attachment provides an example format for METAR, SPECI observations, and PIREPs.

A4.2. Observation Formats:

A4.2.1. METAR / SPECI Format (as transmitted longline):

Table A4.1. METAR.

METAR KSKF 260455Z COR 14010G15KT 1SM RVRNO –RA BR OVC025 (1) (2) (3) (4) (5) (6) (7) (8) (9)
22/21 A3017 RMK SLP210 (10) (11) (12)
(1) Type of Report – METAR or SPECI (2) Location Identifier (3) Date/Time Group (DTG). The DTG consists of the 2-digit date and the time Coordinated Universal Time (UTC) (4) Report Modifier – If required, COR indicates a correction has been made. (5) Wind direction (three digits) and speed (knots) including gusts (two digits). Ten degrees azimuth is added to correct direction from magnetic to true north. Three digits will be used for speeds 100 knots or greater. (6) Visibility (in statute miles). (7) RVR- If required. See **A4.2.1.2.** below for the locally reported format. (8) If required, current weather and/or visibility obstruction. (9) Sky Condition [cloud bases in hundreds of feet above ground level (AGL)]. (10) Temperature / Dew Point (^{O}C). (11) Altimeter Setting (inches of mercury). (12) Remarks.

A4.2.2. METAR / SPECI Format (as transmitted locally).

Table A4.2. SPECI Observations.

KSKF SPECI 0515Z COR 15015G15KT 1/2 R15VR1600FT -RA BR OVC010
(1) (2) (3) (4) (5) (6) (7) (8) (9)
22/21 ALSTG 30.17 RMK PA +460 36/MA
(10) (11) (12) (13) (14) (15)
(1) Location Identifier (2) Type of Report – METAR or SPECI (3) Time Group (TG). The TG consists of only the 4-digit time in UTC (4) Report Modifier – If required, COR indicates a correction has been made. (5) Wind direction and speed (knots) including gusts (G15). Direction is magnetic. (6) Visibility (in statute miles). (7) RVR- If required. R followed by the active runway (16 or 34) then VR (visual range) followed by the distance in feet. (8) If required, current weather and/or visibility obstruction. (9) Sky Condition (cloud bases in hundreds of feet AGL). (10) Temperature / Dew Point (^{O}C). (11) Altimeter Setting (inches of mercury). (12) Remarks. (13) Pressure Altitude (14) Two-digit time in minutes past the hour that the observation was transmitted. (15) Initials of the observer.

A4.3. PIREP Format. A PIREP is a report of meteorological phenomena encountered by an aircraft in flight. All PIREPs received by the WF that are significant to local flying operations will be posted locally through BIFROST. **Paragraph A4.3.2** breaks down how a PIREP is encoded for local use:

A4.3.1. At a minimum, a PIREP must contain a message type, location, time, flight level, type of aircraft, and at least one other element.

Table A4.3. PIREP.

KSKF PIREP TIME 1910 KSKF330010 FL 030 TP F16 (1) (2) (3) (4) (5) (6)
SK SCT040-TOP050/OVC100-TOPUNKN WX FV99SM RA TA 22 (7) (8) (9)
WND 08010 TURB LGT-MOD CHOP 040-080 ICE NEG (10) (11) (12)
RMK CRYSTAL USABLE FOR AIR TO AIR ABV FL160 **(**13)
(1) Transmitting Station (2) Message Type (PIREP or URGENT PIREP) (3) Time of Report (UTC) (4) Location of Aircraft – 3-digit direction followed by 3-digit distance in nautical miles (example shows aircraft northwest of Lackland, 10 miles out). (5) Flight Level (Hundreds of feet MSL) (6) Aircraft Type (7) Sky Cover- bases and tops if known in hundreds of feet MSL (8) Flight Level Visibility and Weather- FV99 equals unrestricted, all others are rounded to the nearest whole statute mile. (9) Temperature (C^o) (10) Wind at Altitude 3-digit direction followed by 2 to 3-digit speed as required. (11) Turbulence (12) Icing (13) Remarks Section plain language format of any other info passed by pilot.

A4.3.3. For more information on encoding and decoding PIREPS, see AFMAN 15-124, *Meteorological Codes*.

Attachment 5

TAF FORMAT/CRITERIA

A5.1. General. This attachment provides the TAF format, a sample TAF, and criteria for amendment.

A5.2. TAF Longline Format:

Table A5.1. TAF.

KSKF 1318/1410 02009KT 8000 -RA BKN045 OVC060 QNH3000INS (1) (2) (3) (4) (5) (6) (7)
TEMPO 1318/1321 VRB15G25KT 3200 -TSRA BKN012 OVC025 (8)
BECMG 1414/1415 03012KT 9999 SKC QNH2997INS TX31/1321Z TN19/1412Z (9)
(1) Location Identifier (2) Date/Time Group (30-hour format) (3) Wind (knots) (4) Visibility (meters) (5) Weather condition for forecast period (6) Sky conditions (cloud layers in feet AGL) (7) Minimum altimeter setting for forecast period (8) Change Group identifier (BECMG, TEMPO, etc.) (9) High/Low temperature and expected time of occurrence for the first 24-hour period of the TAF (temperature in ^{o}C, time UTC)

A5.2.1. For more information on encoding and decoding TAF code, see AFMAN 15-124, *Meteorological Codes.*

A5.3. TAF Amendment Criteria. The 30-hour forecast specifies the time of occurrence (to the nearest hour), the duration, and the intensity (where applicable) of the weather elements listed below. The weather elements listed in **Table A5.2** must be considered when issuing the TAF for Kelly Field and if expected to occur will be included in the forecast. If at any time the conditions listed in this section occur but are not correctly forecast or are forecast to occur and do not occur by the specified predominant change group ending time, the TAF must be amended.

Table A5.2. TAF Specification/Amendment Criteria.

FORECAST ELEMENT	TAF AMENDMENT CRITERIA
Ceiling or Prevailing Visibility observed or expected to decrease to less than, or if below, increase to equal or exceed:	Category Limits E ≥ 2000 ft / ≥ 3 SM D ≥ 1000 ft to < 2000 ft / ≥ 2 to < 3 SM C ≥ 700 ft to < 1,000 ft / ≥ 2 to < 3 SM B 200 to < 700 ft / 1/2 to < 2 statute miles A < 200 ft / < 1/2 statute mile The lower of the values determines categories.
Surface Wind	The difference between the observed predominant wind speed (or gust) and the forecast wind speed (or gust) is 10 knots or more. Direction change greater than 30 degrees when the predominant wind speed or gusts are expected to be 15 knots or greater.
Icing, not associated with thunderstorms, from the surface to 10,000 ft AGL	The beginning or ending of icing first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.
Turbulence (for Cat II aircraft), not associated with thunderstorms, from the surface to 10,000 ft AGL	The beginning or ending of turbulence first meets, exceeds, or decreases below moderate or greater thresholds and was not specified in the forecast.
WW criteria and/or Forecast WA criteria that can be specified in the TAF	Is occurring and is expected to continue, or is expected to begin, but is not specified in the forecast. Is specified in the TAF but is no longer expected to occur during the forecast period.
Thunderstorms	Incorrect forecast start time and is not expected to occur within the next 30 minutes. Incorrect forecast end time.
Altimeter Setting	Altimeter setting meets, exceeds or falls below 31.00INS, or drops below 28.00INS, or if below, increases above 28.00INS.
Specification of Temporary Conditions	Forecast conditions specified as temporary: Become predominant conditions, do not occur during the hour, or are no longer expected to occur.
Changes to predominate conditions	Forecast change conditions occur before the beginning of the specified period of change and are expected to persist.
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.

A5.4. TAF Amendment Guidelines:

A5.4.1. Anytime an unforecast change meeting the TAF amendment criteria occurs or is expected to occur and is expected to last more than 30 minutes and is not correctly forecast by the next whole hour.

A5.4.2. Anytime an unforecast change meeting the TAF amendment criteria occurs, is expected to last at least 30 minutes and is not forecast by the next whole hour from the time of occurrence.

A5.4.3. Anytime a forecast condition meeting the TAF amendment criteria does not occur by the specified hour and is not expected to occur within the next 30 minutes.

A5.4.4. Anytime a forecast condition within a temporary (TEMPO) group becomes predominant or is not expected to occur.

A5.5. Last No Amendments. During periods when the airfield is closed and a TAF is not required, the last line of the TAF will include “LAST NO AMDS AFT YYGG NEXT YYGG” where “YY” is the day of the month UTC and “GG” is the time to the nearest whole hour UTC.

Attachment 6

WATCH/WARNING/ADVISORY FORMAT

A6.1. General. This attachment explains formats and notification procedures for weather watches, warnings and advisories. Each watch, warning and/or advisory will contain the following elements in order of transmission:

A6.1.1. Header, watch, warning or advisory number (numbered XX-XXX, i.e., 05- 001, etc.).

A6.1.2. Valid time in UTC and local time.

A6.1.3. Body of warning/watch/advisory.

A6.2. Weather Watch Example:

A6.2.1. Weather Watch 04-004 for JBSA-Camp Bullis Annex (1TX7) Valid 8/0000Z (7/1900L) to 8/0100Z (7/2000L). Potential for Lightning exists within 5 nm of JBSA-Camp Bullis Annex.

A6.3. Weather Warning Examples:

A6.3.1. Weather Warning 04-008 for JBSA-Lackland Valid 8/1900Z (8/1400L) to 8/2100Z (8/1600L). Strong Winds GTE 35 but less than 50 kts forecast value 40 kts not associated with thunderstorms are forecast at JBSA-Lackland.

A6.3.5. Weather Warning 04-010 for JBSA-Lackland Valid UFN. LIGHTNING WITHIN 5NM IS OBSERVED AT JBSA-Lackland.

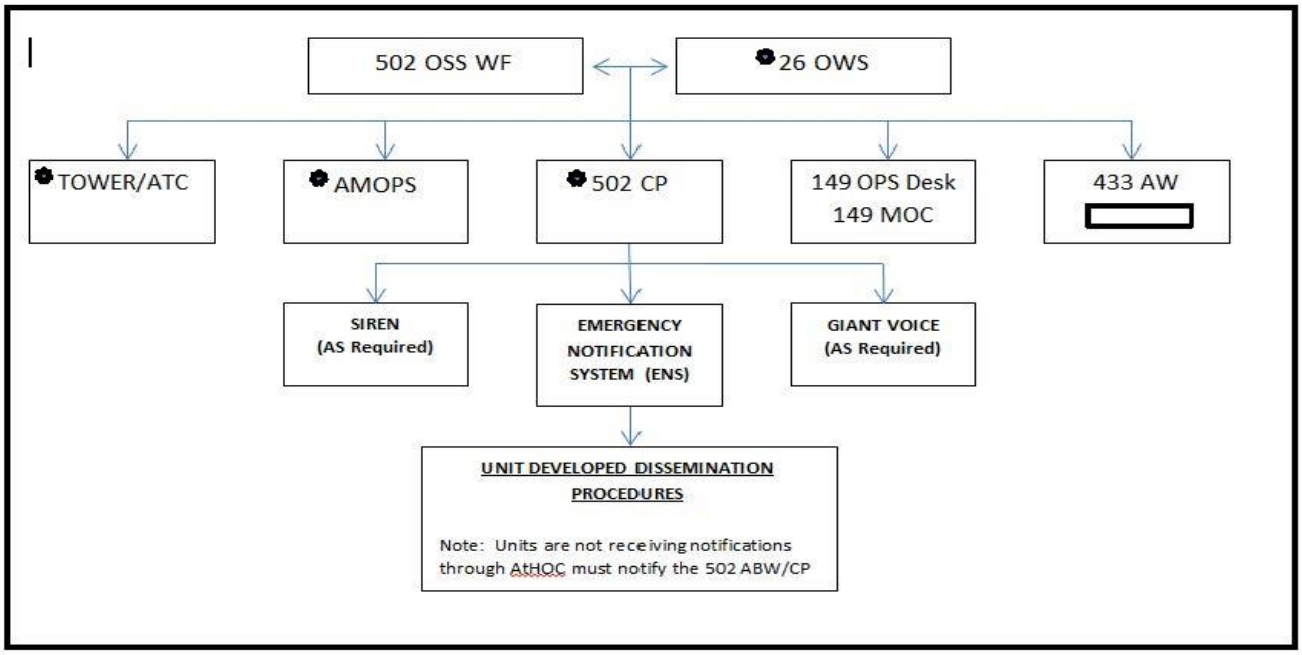
A6.4. Weather Advisory Example :

A6.4.1. Weather Advisory 04-013 for JBSA-Lackland/Kelly Field (KSKF) Valid 8/2200Z (8/1700L) to 9/0200Z (8/2100L). Winds greater than or equal to 25 but less than 35 kts. Forecast value 25 kts are forecast FOR THE AIRFIELD ONLY.

A6.5. Dissemination . The WF leverages a pyramid notification system to promptly disseminate weather watches, warnings, and advisories. The WF or 26 OWS initiates the process by disseminating, canceling, or extending an advisory, watch, or warning via BIFROST. Upon receiving watches, warnings, or advisories, the 502 ABW/CP will disseminate the alert via the AtHoc system to other agencies on JBSA. Each organization is responsible for internal dissemination. When BIFROST is inoperable, the WF will use telephone notification to transmit watches, warnings and advisories**.** **Figure A6.1** illustrates the dissemination pyramid.

A6.6. Backup Calls. The WF will notify Primary Command and Control agencies, and ATC when Weather Watches, Warnings, or Advisories are issued during communication outages. Agencies called for verification of receipt are noted in **Figure A6.1** with asterisks.

Figure A6.1. Weather Watch/ Warning/ Advisory Notification Pyramid.



Attachment 7

FREQUENTLY USED AIRSPACE

Figure A7.1. MOA Reference Chart.

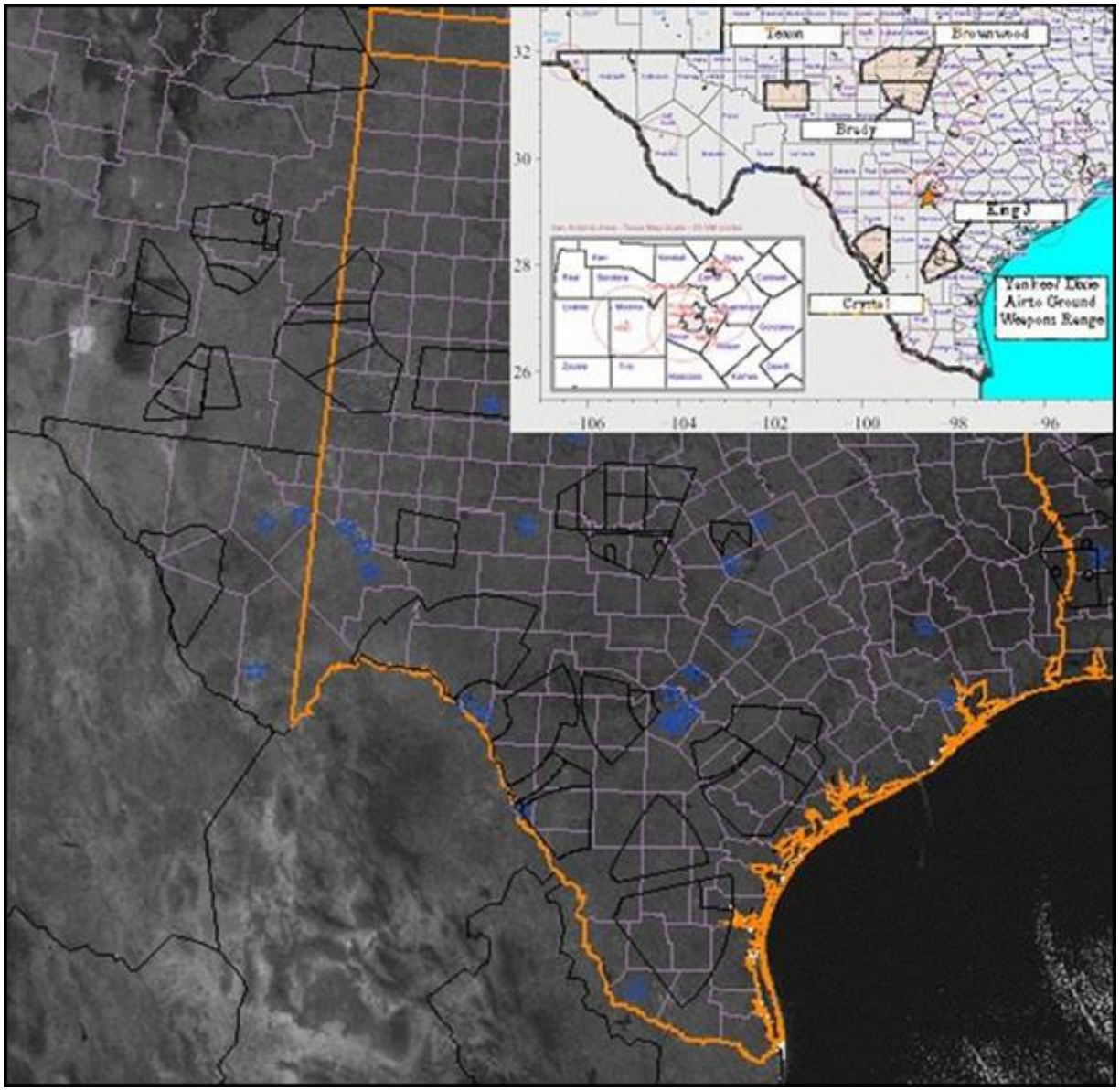


Figure A7.2. Common Low Level Routes.

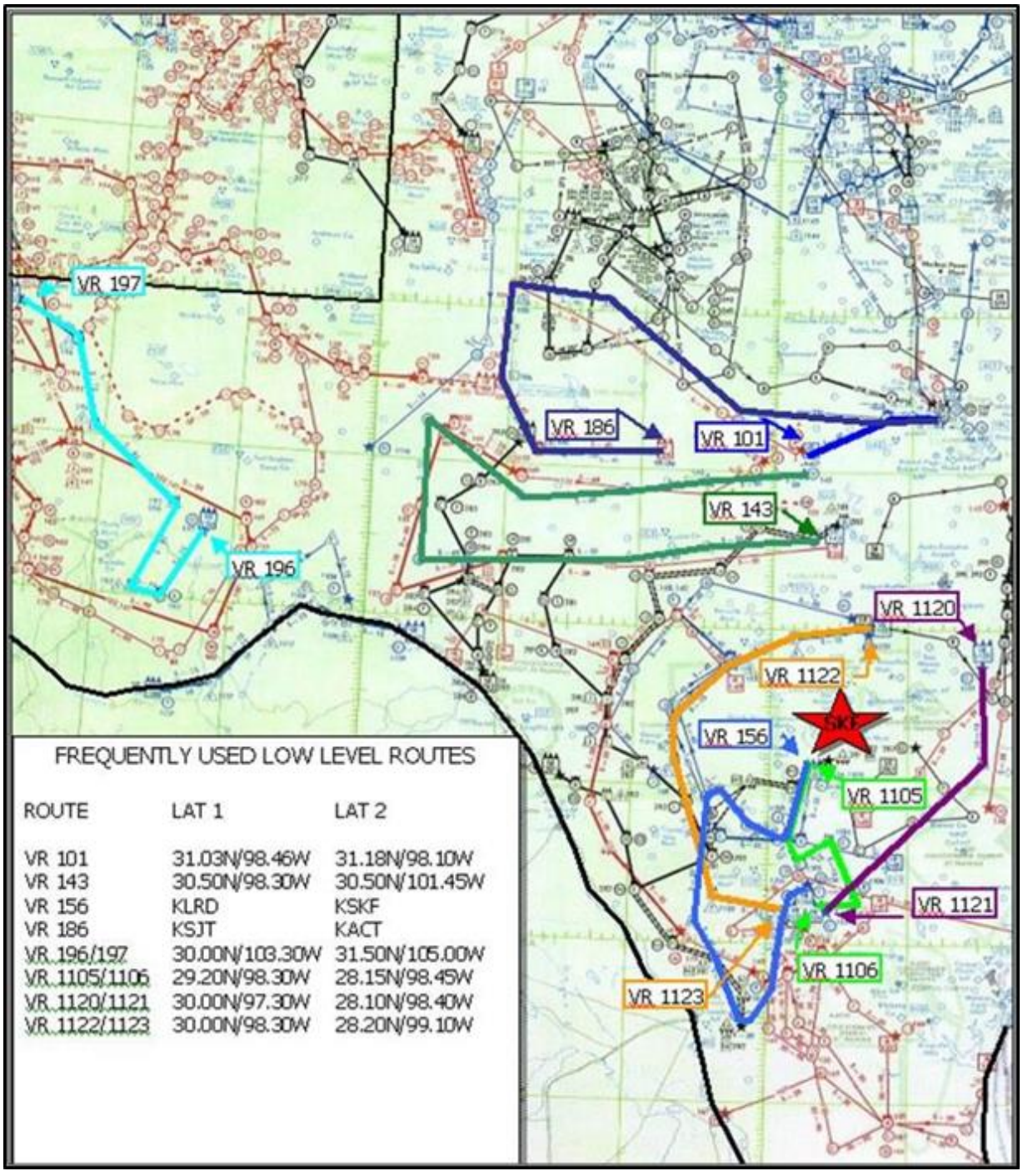
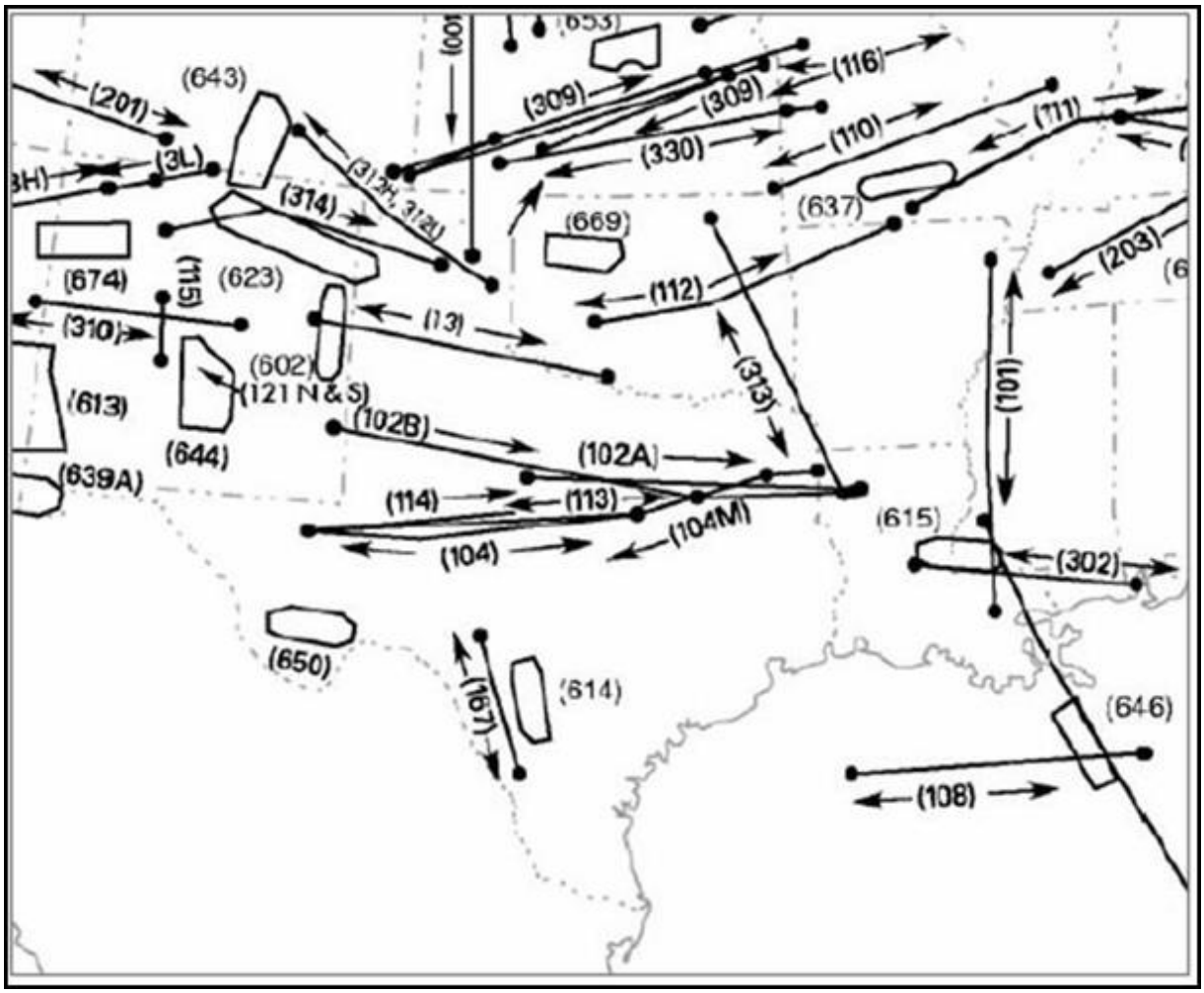


Figure A7.3. Common Air Refueling Routes.



Attachment 8

METEOROLOGICAL SENSING EQUIPMENT / OBSERVATION LOCATIONS

Figure A8.1. The WF Sensor Locations.

LEGEND

1. Building 1610 (WF primary OPS)
2. Tower (WF alternate OPS)
3. FMQ-19 Automated Meteorological Stations

Attachment 9

HURRICANE BULLETIN EXAMPLES

Figure A9.1. AOR / AOI.

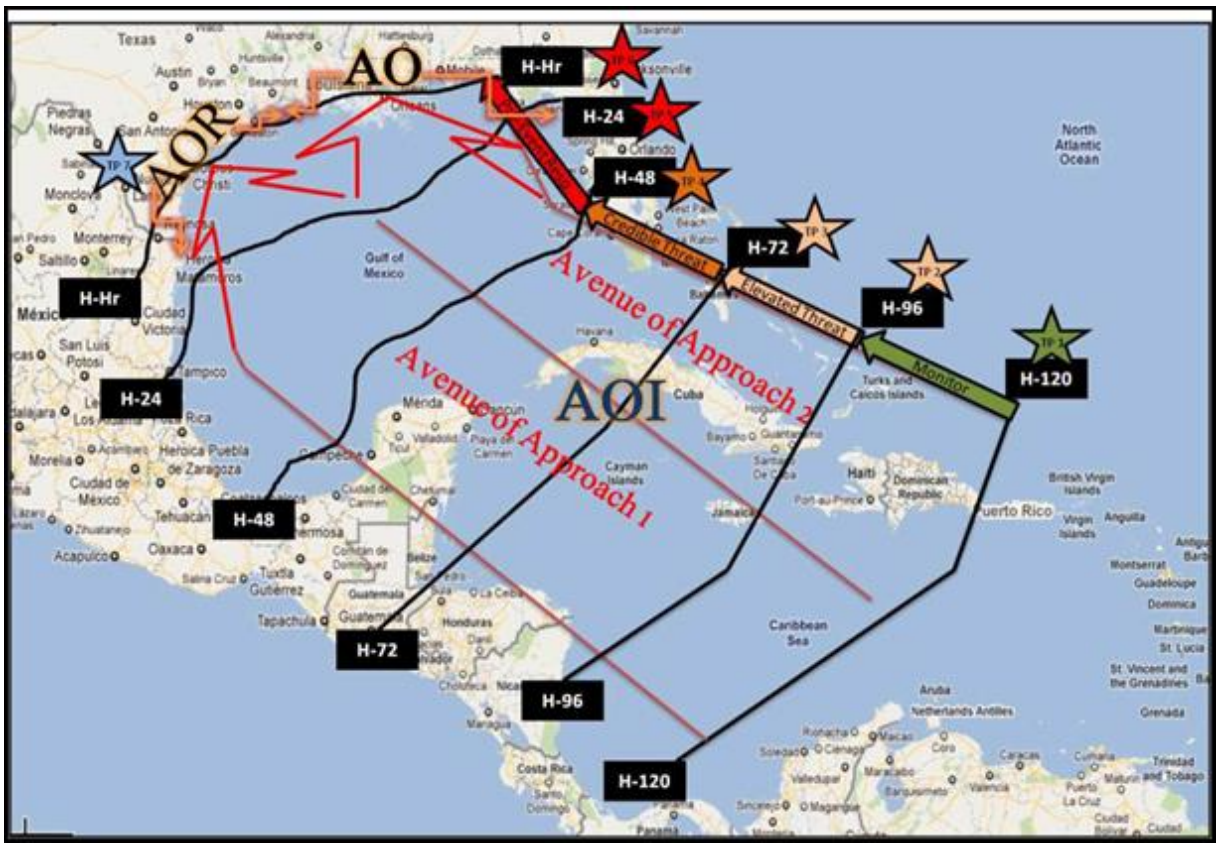


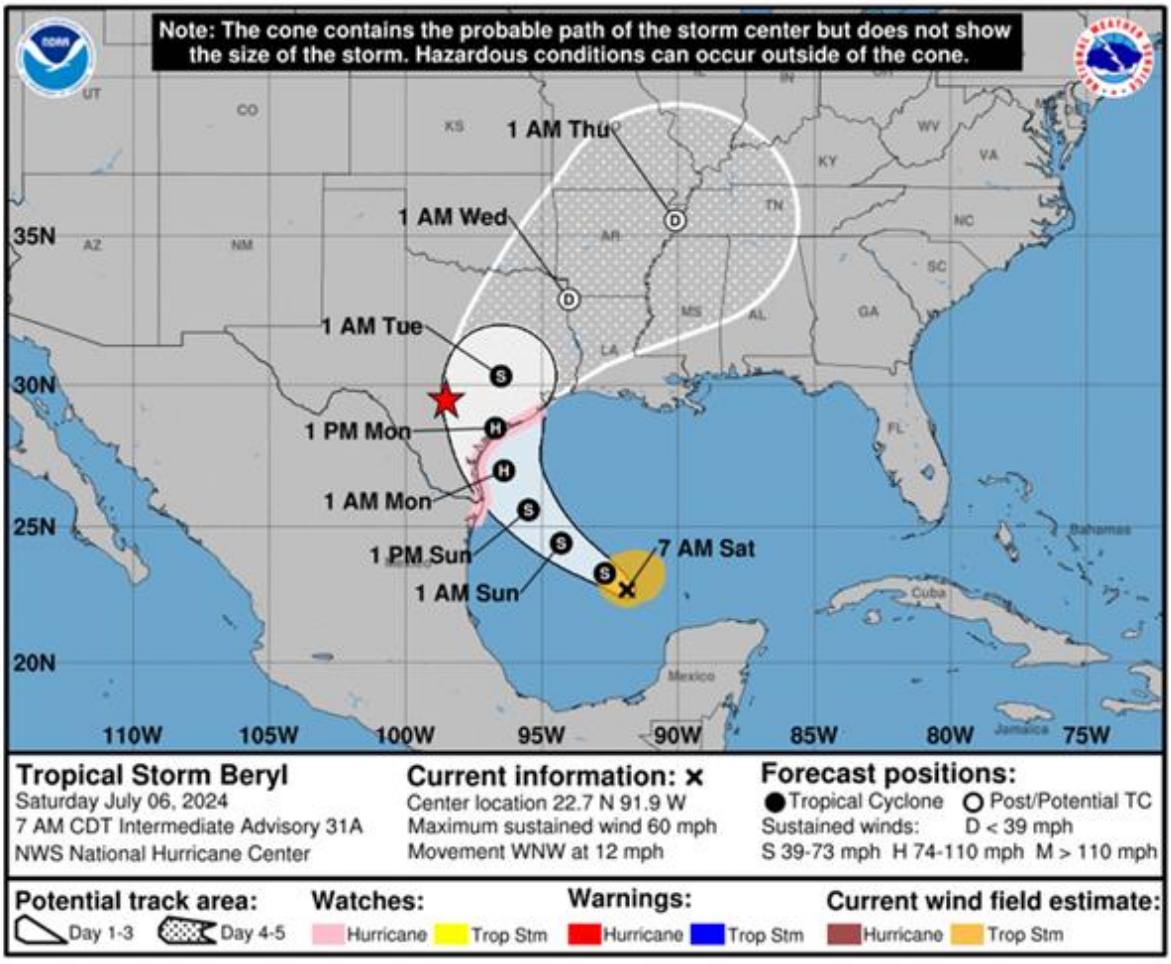
Figure A9.2. Primary JBSA Hurricane Bulletin.

Joint Base San Antonio Tropical Bulletin

06 Jul 24 / 0700L / ADVISORY 31A

Current Information: Tropical Storm Beryl
Location: 22.7N 91.9W
(495 Miles SE of Corpus Christi)
Current Category: n/a

Movement: West-Northwest at 10 knots
Sustained Wind: 52 knots with higher gusts
Expected Landfall: 1200 Monday near Port Lavaca Texas



ASSESSMENT

- Tropical Storm Beryl is currently located **495 miles Southeast of Corpus Christi** and is moving **WNW at 10 knots**.
- Maximum sustained winds are near 52 knots with higher gusts.
- Beryl is forecasted to make landfall near Port Lavaca, Texas around 1200 CDT Monday.
- Beryl is expected to strengthen to a hurricane on Sunday afternoon before making landfall.

RAINFALL

- **JBSA** – 2 to 3 inches Monday through Tuesday
- **Corpus Christi** – 2 to 4 inches Sunday through Tuesday
- **Brownsville** – 2 to 3 inches Sunday through Tuesday

WINDS

- **JBSA** – 30% chance of tropical storm force winds 34-49kts beginning mid-morning Monday with a 6% chance of 50kts lasting through Monday evening.
- **Corpus Christi** – 64% chance of tropical storm winds 34-49kts beginning Sunday evening and lasting through Monday afternoon with a 25% chance of 50kts and a 5% chance of GTE 64kts beginning after midnight Monday through Monday morning.
- **Brownsville** – 37% chance of tropical storm winds 34-49kts starting midday Sunday through early Monday morning with a 7% chance of 50kts beginning Sunday afternoon and lasting through Sunday evening.

TORNADOES

- **JBSA** – None.
- **Corpus Christi** – None
- **Brownsville** – None.

Warnings/Watches for JBSA: None

OTHER USEFUL INFORMATION: 1 knot = 1.15 statute miles per hour…1 nautical mile = 1.15 statute miles

HURCON (Hurricane Conditions):

5 = Destructive winds are possible within 96 hours
4 = Destructive winds are possible within 72 hours
3 = Destructive winds are possible within 48 hours
2 = Destructive winds anticipated within 24 hours
1 = Destructive winds anticipated within 12 hours

Hurricane Categories:

1 = sustained winds of 64-82 knots (74-95 mph)
2 = sustained winds of 83-95 knots (96-110 mph)
3 = sustained winds of 96-112 knots (111-129 mph
4 = sustained winds of 113-136 knots (130-156 mph)
5 = sustained winds 137 knots (157 mph) or greater

1C = Caution: Winds of 40-57 mph/35-49 kts sustained are occurring.
1E = Emergency: Winds of 58 mph/50 kts sustained and/or gusts of 69 mph/60 kts or greater are occurring.
1R = Recovery: Storm has passed/emergency responders released

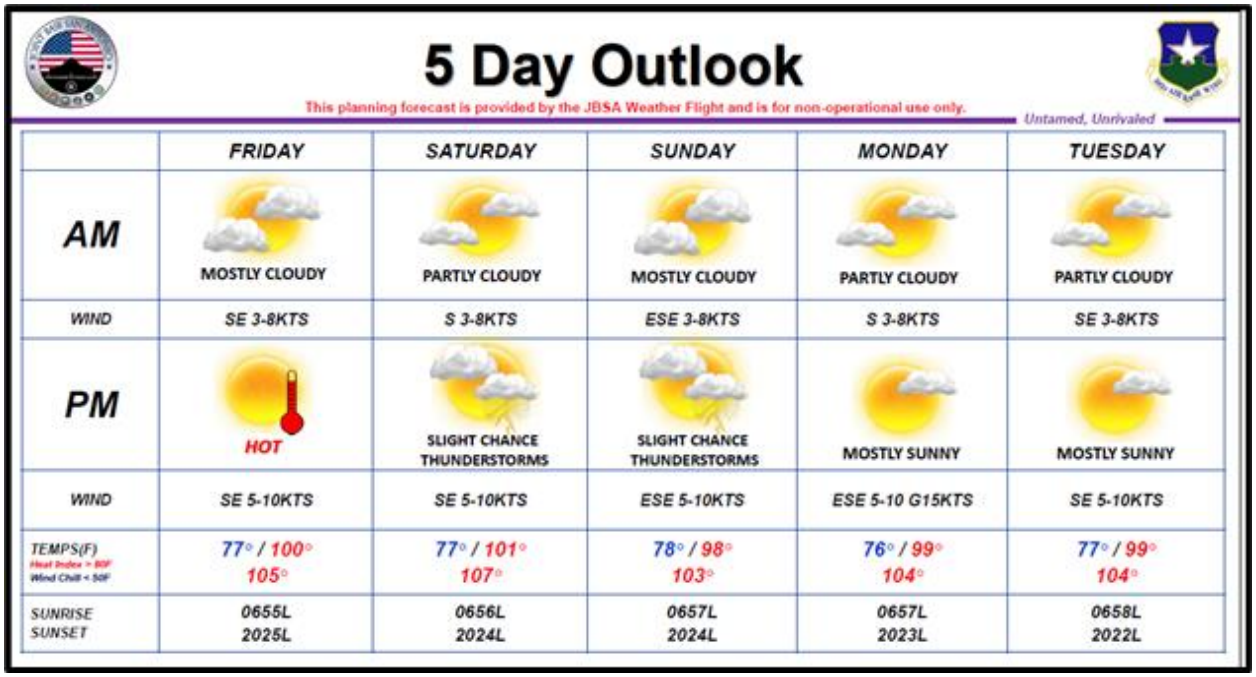
Created By: JBSA Weather Flight. **For Operational Needs Call: DSN945-5709**. **Issued by: JF**
Forecast track and intensity beyond 48 hours have a high degree of uncertainty and are for planning purposes only.

Next update will be @ 06/1030 CDT.

Attachment 10

STAFF WEATHER SLIDE EXAMPLES

Figure A10.1. Daily Weather Slides.



5 Day Outlook

This planning forecast is provided by the JBSA Weather Flight and is for non-operational use only.

Untamed, Unrivaled

	FRIDAY	SATURDAY	SUNDAY	MONDAY	TUESDAY
AM	MOSTLY CLOUDY	PARTLY CLOUDY	MOSTLY CLOUDY	PARTLY CLOUDY	PARTLY CLOUDY
WIND	SE 3-8KTS	S 3-8KTS	ESE 3-8KTS	S 3-8KTS	SE 3-8KTS
PM	HOT	SLIGHT CHANCE THUNDERSTORMS	SLIGHT CHANCE THUNDERSTORMS	MOSTLY SUNNY	MOSTLY SUNNY
WIND	SE 5-10KTS	SE 5-10KTS	ESE 5-10KTS	ESE 5-10 G15KTS	SE 5-10KTS
TEMPS(F) Heat Index > 80F Wind Chill < 50F	77° / 100° 105°	77° / 101° 107°	78° / 98° 103°	76° / 99° 104°	77° / 99° 104°
SUNRISE SUNSET	0655L 2025L	0656L 2024L	0657L 2024L	0657L 2023L	0658L 2022L

Figure A10.2. CAT/SWWG Weather Slides.