BY ORDER OF THE COMMANDER
35TH FIGHTER WING

35TH FIGHTER WING INSTRUCTION
15-101

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Weather

WEATHER SUPPORT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Weather Operations*; Air Force Manual (AFMAN) 15-111, *Surface Weather Observations*; AFMAN 15-124, *Meteorological Codes*; AFI 15-128, *Weather Force Structure*; AFMAN 15-129, *Air and Space Weather Operations*; Pacific Air Forces Instruction (PACAFI) 15-101, *Weather Support for PACAF*; and United States Forces Japan Instruction (USFJI) 15-4001, *Tropical Cyclone Conditions of Readiness (TCCOR)*. This instruction establishes policy, procedures, and responsibilities to provide weather support for Misawa Air Base (MAB) and the 35th Fighter Wing (35 FW). Additionally, this instruction provides guidance for weather services that include weather observations and forecasts, weather warnings, watches, and advisories, dissemination of information, and reciprocal support. Ensure that 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 Air Force Records Disposition Schedule located in the Air Force Records Information Management System. 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 chain of command. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Information published in other authoritative documents has been removed. Updates to this publication, including resource protection responsibilities and processes, have been accomplished to reflect changes in AFMAN 15-129. Additional updates from the previous version reflect the physical move of the MAB Weather Flight. Roles, responsibilities, and required support have been updated for all units.

1. General Information. This instruction establishes weather support by the 35th Operations Support Squadron Weather Flight (35 OSS/OSW, hereafter WF) for MAB and the 35 FW not already defined in Joint and Air Force Directives, Instructions, Manuals, and Publications, or in 35 FW operations plans.

1.1. **MAB Weather Flight (WF) Mission.** Support the warfighter providing timely, accurate, and relevant environmental intelligence to defend our allies and deter our adversaries.

1.2. **WF Location and Hours of Operation.** The WF is located in Building 1090, MAB, Japan. Operational hours are from Monday through Friday from 0700-1700L with the exception of non-flying days, weekends, federal holidays, and Pacific Air Forces (PACAF) family days. Hours may be adjusted with respect to the 35 FW flying schedule (i.e.: night flying). The WF will maintain a qualified forecaster on station during hours of operation and during 35 FW flying hours. Additionally, the WF will employ a qualified forecaster on standby at all times outside of normal duty hours. The on-call standby forecaster can be contacted outside of normal duty hours via 35 FW Command Post (35 FW/CP) at DSN 315-226-3500.

1.3. **Contact Information.**

1.3.1. Flight Commander: DSN 315-226-3196; Commercial +81 (0)176-77-3196

1.3.2. Flight Chief: DSN 315-226-3900; Commercial +81 (0)176-77-3900

1.3.3. Weather Operations Desk: DSN 315-226-3065; Commercial +81 (0)176-77-3065

1.3.4. WF organizational email: **35oss.osw@us.af.mil**

1.4. **Concept of Operations.** The WF, the Japan Air Self-Defense Force (JASDF) Weather Squadron, and the 557th Weather Wing (557 WW) work as a team to provide weather services for MAB. The WF provides weather services via four overarching functions: staff integration function, mission integration function, airfield services function, and specialized support. Details for each of these functions are found in AFI 15-128 and AFMAN 15-129.

1.5. **Duty Priorities.** To ensure high priority duties are accomplished during periods of increased operations tempo, WF duty priorities are listed in **Table 1** WF personnel will use sound judgment and Risk Management principles when following these priorities.

Table 1. WF Duty Priorities.

Priority	Duties
1	Wartime defense of the duty site/location
2	Perform Emergency War Order tasks (e.g., Deploy Personnel)
3	Execute Evacuation / Continuity of Operations Plan
4	Issue/Disseminate **Imminent** Hazardous Weather Warnings
5	Respond to Aircraft/Ground Emergencies
6	Disseminate non-imminent Watches, Warnings, and Advisories
7	Transmit Urgent/Severe Pilot Reports (PIREPs)
8	Coordinate Severe Weather Action Procedures (SWAP)
9	Respond to Pilot-To-Metro Service (PMSV) Contacts
10	Provide Weather Information to Supervisor of Flying (SOF)
11	Collaborate Weather Products with Supported Units
12	METWATCH/Amend Weather Products
13	Respond to Support Assistance Request (SAR) or Request for Information
14	Provide Staff Briefings / Non-Standard Weather Products
15	Accomplish Weather Functional Training
16	Accomplish Administrative Tasks

1.6. **Assumptions and Limitations.** The WF relies heavily on network communication systems and cannot effectively conduct weather operations without access to network communications for receiving/transmitting data. Interruption in network service severely degrades the WF's capability to provide weather services.

1.7. **Weather Equipment and Technical Assistance.** The WF relies heavily on various forms of equipment to provide weather support for MAB. **Table 2** lists the organizations responsible for preventative maintenance and repairs of meteorological and communications equipment.

Table 2. Meteorological Equipment.

Meteorological Equipment	Maintaining Organization	Mission Impact
AN/FMQ-19	Radar, Airfield, and Weather Systems (35 OSS/OSAM)	Automated fixed base weather observing system (FBWOS) at MAB. Any outage removes instantaneous METWATCH of airfield conditions.
AN/FMQ-22	35 OSS/OSAM	Sole automated FBWOS at Draughon Range. Any outage removes all weather observing capabilities, which can significantly degrade usage of the range.
AN/TMQ-53	WF	Deployable weather observing system. Any outage significantly reduces deployed observing capability and critically impacts the ability to deploy the system.
Mobility Kit (MOK)	WF	Compact deployable weather equipment. Used to quickly take observations in place of the AN/TMQ-53. Outage may impact deployed observing capabilities.
Kestrel 4500	WF	Deployable weather observing tool. Used only as a backup; outage marginally affects deployed observing capabilities.
JET Sensor Collection Appliance (SCA)	Network Control Center (35 CS/NCC)	Primary means to disseminate weather watches, warnings, and advisories (WWAs), weather sensor data, and PIREPs for MAB and Draughon Range. Any outage is critical to MAB emergency response.
NIPRNet	Communications Focal Point (35 CS/CFP)	Primary means to disseminate tailored weather forecasts, observations, and WWAs for MAB and Draughon Range. Any outage is critical to MAB operations.
VoIP Phones	35 CS/SCOI	Primary means to disseminate routine or urgent weather updates to operational users. Any outage is critical to MAB operations.
UHF Radio (PMSV)	35 OSS/OSAM	Primary means to contact and relay time-critical weather information to DoD and JASDF airborne aircraft. Any outage is critical to MAB flying operations.
Note: The above equipment will be maintained and repaired according to the maintaining organization's prescribed priorities and scheduled response times.		

1.8. **Alternate Operating Location (AOL).** In the event that the weather station must be evacuated, the WF will relocate to and establish weather services in the Transient Briefing Room (Room 1049) located in Building 918. The AOL will be activated upon notification to the 35 FW/CP. Contact information at the AOL will be provided to the 35 FW/CP and the 17th Operational Weather Squadron (17 OWS), and will be published in installation Notices to Airmen (NOTAMs). Pilot-to-Metro Service (PMSV) capability does not exist at the AOL.

2. Airfield Weather Services Function. The WF will perform airfield weather services function duties in accordance with AFMAN 15-129, Chapter 5.

2.1. **Weather Observing.** Surface weather observations for MAB are taken by the Misawa JASDF Weather Squadron and are disseminated via the International Civil Aviation Organization (ICAO) airport code RJSM. The JASDF Weather Squadron will take and disseminate Aviation Routine Weather Reports (METARs) hourly at the top of each hour. Additionally, the JASDF Weather Squadron will take and disseminate Aviation Selected Special Weather Reports (SPECIs) and Aviation Selected Local Weather Reports (LOCALs) when criteria dictate as prescribed in AFMAN 15-111 and the Department of Defense (DoD) Flight Information Publication (FLIP), *High and Low Altitude – Pacific, Australasia, and Antarctica* (ref. MOUI 3005). All surface weather observations for MAB are published on the Joint Environmental Toolkit (JET) website.

2.1.1. The AN/FMQ-19 Air Force fixed base weather observing system (FBWOS), located at MAB runway 28, displays real-time surface weather conditions at MAB via the JET website 24 hours a day, 7 days a week. Furthermore, WF personnel are trained and task certified to provide weather observations in accordance with AFMAN 15-111 during WF hours of operation. However, WF personnel will neither augment nor manually produce official surface weather observations for the airfield (i.e.: METARs, SPECIs, LOCALs).

2.1.2. For training and task certification purposes, the manual observation site for the WF is at the north end of the Red Carpet on the "Base Ops Ramp" adjacent to Building 1090.

2.2. **Terminal Aerodrome Forecast (TAF).** The TAF for MAB is produced and disseminated by the JASDF Weather Squadron under the ICAO airport code RJSM (ref. MOUI 3005). The JASDF Weather Squadron issues a TAF every 12 hours at 2300 Coordinated Universal Time (UTC) (0800 Japan Standard Time (JST)) and 1100 UTC (2000 JST). Each TAF covers a 24-hour forecast period. The JASDF Weather Squadron does not amend the posted TAF; however, short-line TAFs may be appended to the surface observation according to local procedures. All TAFs for MAB are published on the JET website.

2.3. **Flight Weather Briefings.** The WF will provide or arrange service for walk-in flight weather briefing requests from transient aircrews during WF hours of operation in accordance with duty priorities in **Table 1** Transient aircrews should request routine flight weather briefings a minimum of two duty hours prior to brief time in order to give the WF or servicing agency adequate time to produce a forecast. If aircrews require a brief outside of WF hours of operation, they must contact their home station or the 17 OWS for flight weather briefing support.

2.4. **Pilot-to-Metro Service (PMSV).** WF personnel will monitor ultra-high frequency (UHF) 344.6 MHz during WF hours of operation to assist aircrews (either airborne or on the ground) when weather support is requested. Range is approximately 200 nautical miles (nm) at normal operating altitudes.

2.4.1. PMSV outages will be documented in the current airfield NOTAM. The WF will ensure that the Airfield Management Operations section (35 OSS/OSAA; hereafter AMOPS) is aware of the current PMSV status and expected time of return to service. Aircrews will be briefed on PMSV outages during their flight weather brief. A phone patch to the WF via the 35 FW/CP may be used during PMSV outages.

2.5. **Pilot Reports (PIREPs).** The WF can receive PIREPS via the Supervisor of Flying (SOF), Operations Supervisor (Top 3), 35 FW/CP, or PMSV. Aircrews are encouraged to provide timely PIREPs when observing meteorological elements that may be of operational significance to other aircraft or on-base personnel (e.g., thunderstorms, tornadic activity, low-level wind shear, cloud bases and/or tops when departing/arriving, upper-level winds, turbulence, icing, etc.). WF personnel will disseminate all PIREPs via the JET website in accordance with AFMAN 15-124.

2.6. **Resource Protection.** Resource Protection is a continuous process to mitigate the effects of hazardous weather on personnel, property, and operations. WF personnel monitor the development of weather phenomena that meet weather warning, watch, and/or advisory criteria. The WF will issue all weather warnings, watches, and advisories (WWAs) for MAB when current or forecast conditions warrant. The WF will only issue observed weather advisories during 35 FW flying hours with the exception of those advisories that utilize the JET automated function (ref. **Table 3**). All WWAs are valid within a 5 nm radius centered on the MAB airfield unless otherwise noted. The 17 OWS issues all WWAs for Draughon Range via JET under the temporary location identifier KQDG.

2.6.1. **Table 3** Below lists all WWAs for MAB. Desired Lead Time (DLT) is the total amount of advance notice a supported agency requires to complete protective actions before the onset of hazardous weather phenomena. The WF will make every effort to issue forecast warnings with at least the DLT in accordance with AFMAN 15-129. **Note:** Observed lightning warnings and all observed advisories are not forecast events and will therefore not require DLT.

Table 3. Weather Warning, Watch, and Advisory Criteria.

Weather Warning Criteria	**DLT**
Tornado or Funnel Cloud	15 min
Severe Thunderstorm (damaging winds greater than or equal to (GTE) 50 kts and/or damaging hail GTE ¾")	120 min
Damaging Winds GTE 50 kts (not associated with thunderstorms)	120 min
Moderate Thunderstorm (strong winds GTE 35 kts but less than (LT) 50 kts and/or large hail GTE ¼" but LT ¾")	90 min
Strong Winds GTE 35 kts but LT 50 kts (not associated with thunderstorms)	90 min
Freezing Precipitation (any intensity)	90 min
Heavy Snow GTE 6" in 12 hrs	90 min
Blizzard Conditions (duration GTE 3 hrs, wind or gusts GTE 30 kts, falling and/or blowing snow with visibility LTE ¼ statute miles (400 meters)	90 min
Heavy Rainfall GTE 2" in 12 hrs	90 min
Lightning within 5 nautical miles	Observed
Weather Watch Criteria	**DLT**
Tornado or Funnel Cloud	As Potential Warrants
Severe Thunderstorm (damaging winds greater than or equal to (GTE) 50 kts and/or damaging hail GTE ¾")	As Potential Warrants
Damaging Winds GTE 50 kts (not associated with thunderstorms)	As Potential Warrants
Freezing Precipitation (any intensity)	As Potential Warrants
Heavy Snow GTE 6" in 12 hrs	As Potential Warrants
Blizzard Conditions (duration GTE 3 hrs, wind or gusts GTE 30 kts, falling and/or blowing snow with visibility LTE ¼ statute miles (400 meters)	As Potential Warrants
Heavy Rainfall GTE 2" in 12 hrs	As Potential Warrants
Lightning within 5 nautical miles	30 min
Weather Advisory Criteria	**DLT**
°Surface Winds GTE 25 kts but LT 35 kts	Observed
*Crosswind greater than 21 kts	Observed
*Crosswind greater than 25 kts	Observed
*Crosswind GTE 35 kts	Observed
*Low Level Wind Shear below 2,000 ft above ground level (AGL)	Observed via PIREP
°Lightning within 30 nautical miles	Observed
**Induction Icing (Ice FOD) (temperature GTE -4°C (25°F) but LTE 7°C (45°F) and dew point depression LTE 5°C (9°F) or precipitation/fog/wet runway and temperature LTE -7°C (19°F))	Observed
**Only issued during 35 FW flying hours* *°Automatically issued/disseminated via JET when sensed on FBWOS* ***Monitored during 35 FW flying hours and upon request of supported units*	

2.6.2. The primary means of disseminating WWAs is through the JET website. If key agencies do not acknowledge receipt of an automated notification via JET within 10 minutes of issue time, the WF will make confirmation calls to those agencies for all WWAs. Confirmation calls will not be made outside of WF hours of operation for any advisories that are automatically issued and disseminated via JET. If JET is inoperative, the WF will provide phone notifications of all WWAs to all agencies in the JET subscription list. The WF will prioritize notifications to the 35 FW/CP and AMOPS.

2.6.3. The WF will issue WWAs using a standard numbering convention. The first two numbers represent the current month of the year. The following three numbers represent the sequential number of the watch, warning, or advisory for that respective month. All WWAs will be issued independently from one another. For example, WW 07-011 would be the 11th weather warning issued during the month of July. WA 06-005 would be the 5th weather advisory issued during the month of June.

2.7. **Severe Weather Action Procedures (SWAP).** SWAP is in place to ensure a sufficient number of WF personnel are available during potential and actual severe weather events, or during meteorological/operational events critical to mission success. For the purpose of these procedures, severe weather is defined as any phenomenon identified in **Tables 4** and **Table 5**.

2.7.1. SWAP is activated whenever severe weather conditions defined in **Table 4** are occurring or forecast to occur. SWAP may also be activated by WF leadership whenever severe weather conditions defined in **Table 5** are occurring or forecast to occur. In these instances where SWAP activation is not mandatory, WF leadership considers SWAP activation based on risk assessment (e.g., potential impacts to personnel, assets, and operations; severity and timing of forecast event, etc.). All severe weather events that have occurred and/or forecast to occur will be documented in local logs regardless of whether SWAP was activated. WF personnel will adhere to AFMAN 15-129 and local guidance when SWAP is declared.

Table 4. Mandatory Conditions Requiring SWAP Activation IAW AFMAN 15-129.

Recall Criteria / Threshold	Desired Notification Time	Notes
Tornado or Funnel Cloud	Upon issuance of weather warning (ref. **Table 3.)**	WF personnel will assess the timing of SWAP initiation upon issuance of weather watch
Severe Thunderstorm		

Table 5. Conditions Requiring SWAP Consideration.

Recall Criteria / Threshold	Desired Notification Time	Notes
Damaging Winds	Upon issuance of weather warning (ref. Table 2.1)	WF leadership makes decision on initiating SWAP based on risk assessment
Blizzard		
Heavy Snow		
Freezing Precipitation		
Heavy Rain		

2.7.2. The Severe Weather Action Team (SWAT) is developed whenever SWAP is activated. SWAT will consist of a team leader and at least one additional WF member (ideally the forecaster performing airfield weather services function duties or the on-call forecaster). WF leadership will respond as soon as possible upon SWAP initiation and will assume SWAT leader duties upon arrival to the weather station.

2.7.3. SWAP activation varies depending on whether the WF is open or closed. If the WF is open and severe weather is occurring or forecast to occur, WF leadership will be immediately notified of the threat and will determine the appropriate actions. If the WF is closed, the on-call forecaster will discuss with WF leadership the meteorological situation, suggest manning requirements, and recommend the recall of additional personnel. If deemed necessary and WF leadership declares SWAP, the SWAT member will report to the weather station as soon as possible after notification by the on-call forecaster. Once the SWAT member has arrived, they will assist in evaluating the situation, determine the need and availability to recall additional personnel, and execute SWAP duties and responsibilities established in AFMAN 15-129 and local policy.

2.7.4. While a tropical cyclone is not listed as SWAP criteria, the WF will respond to forecast tropical cyclones affecting MAB and will provide environmental intelligence to MAB leadership in accordance with USFJI 15-4001. WF leadership will immediately notify the 35 FW/CP and evaluate the impacts within 96 hours of a forecast tropical cyclone to affect MAB. Due to the complex nature of tropical cyclones, WF leadership will determine the best course of action to address weather support. Refer to **para 4.2** for further information regarding Tropical Cyclone support.

2.8. **Severe Weather Damage Reporting/Operational Reporting (OPREP).** The WF will coordinate with the 35 FW/CP for weather-related OPREP-3 reports and will provide information listed in local guidance. The 35 FW/CP will provide the WF with a copy of any weather-related OPREPs. The WF will provide weather-related damage reports and OPREP-3 reports to the 17 OWS and the PACAF Weather Operations Branch (A318).

2.9. **Emergency and Crisis Action Responses.** WF personnel will record pertinent weather information outlined in local policy upon notification of any aircraft mishap, regardless of the nature or cause of the mishap. Information will be provided to Wing Safety (35 FW/SE) or other base agencies upon request.

3. Mission Integration Function. The WF will perform mission integration function duties in accordance with AFMAN 15-129, Chapter 4.

3.1. **Weather Products (WPs).** The WF will develop and maintain WPs to support planning and execution of supported operations. WPs fuse theater-scale weather products with local mission requirements. WPs include mission planning briefs, mission execution forecasts (MEFs), extended outlooks, and any other weather product prepared to meet the needs of a supported unit’s mission.

3.1.1. The MEF is the official forecast for 35 FW flying operations. MEFs are mission-specific forecasts that provide timely, accurate, and relevant weather information to 35 FW leadership, SOF and Top 3. The MEF will cover conditions for the entire flying schedule and will contain take-off and landing weather, flying hazards (e.g., turbulence, icing), space weather forecasts, nighttime illumination, wave heights, surface winds, sea surface temperatures, military operations area (MOA) forecasts, and alternate airfield forecasts. This product is posted to the 35 FW SharePoint website no later than one hour prior to the Mass Brief and is updated as weather conditions warrant. **NOTE:** Forecasts for alternate airfields are obtained directly from the respective airfield TAF. Because the TAF is the official forecast for these alternate airfields, WF personnel do not have the ability to amend or request amendments to alternate airfield TAFs (unless collaborating with WF personnel at other DoD installations).

3.1.2. The Planning MEF is a mission-specific product that details forecast environmental conditions for the following flying day, which includes the same weather information contained in the official MEF described in **para 3.1.1** The Planning MEF is posted to the 35 FW SharePoint website no later than 0100 UTC (1000 JST) during WF hours of operation (ref. **para 1.2**). Because the Planning MEF covers a forecast period beyond 24 hours, it will be utilized for planning purposes only. The WF will provide additional planning weather data to mission planners as requested.

3.1.3. The WF will develop and issue an extended local weather forecast product (i.e.: 5-day outlook) via the 35 FW SharePoint website no later than 0130 UTC (1030 JST) during WF hours of operation (ref. **para 1.2**). This is a non-amendable product and should be utilized for planning purposes only. Support agencies can request to receive this product via email.

3.2. **In-person Weather Briefings.** WF personnel will make every effort to attend and provide environmental intelligence during mission planning briefings, mass briefs, step briefs, etc. upon request.

4. Staff Integration Function. The WF will perform staff integration function duties in accordance with AFMAN 15-129, Chapter 3.

4.1. **Wing Stand-up.** The WF will provide the weather portion of the 35 FW stand-up briefing via the 35 FW SharePoint website no later than 0500 UTC (1400 JST) during WF hours of operation (ref. **para 1.2**). The weather portion of the 35 FW stand-up briefing will include an overview of current forecast conditions, planning weather for the next flying day, and a 5-day outlook. Slides detailing specific events (e.g., Aviation Training Relocation (ATR) support, deployment planning, etc.) will be included as needed. If a tropical cyclone is forecast to impact MAB, storm forecasts and graphics produced by the JTWC will be added to the brief.

4.1.1. WF personnel will brief the weather portion of the 35 FW stand-up briefing during the 35 FW stand-up upon request or when deemed necessary by WF leadership (e.g., to advise base leadership of forecast severe weather that may significantly impact base agencies, to brief planning weather for large-scale events or exercises, etc.).

4.2. **Tropical Cyclone Support.** The WF follows tropical cyclone forecasts from the JTWC. If a tropical cyclone is forecast to impact MAB, the WF will make Tropical Cyclone Condition of Readiness (TCCOR) recommendations to the MAB installation commander in accordance with USFJI 15-4001. The WF will use **Tables 6** and **Table 7** as a guide when notifying and providing TCCOR recommendations to the MAB installation commander. Real-world TCCOR updates for MAB will be sent by the 35 FW/CP via the AtHoc notification system.

Table 6. WF Response to Forecast Tropical Disturbance or Tropical Depression.

Distance from MAB	Action/Frequency
500 nm – 1000 nm	Email advisory to MAB leadership & TCCOR authority
< 500 nm	Email advisory every 24 hrs to MAB leadership & TCCOR authority

Table 7. WF Response to Forecast Tropical Storm, Typhoon, or Super Typhoon.

Distance from MAB	Action/Frequency
> 1200 nm	Email warning to MAB leadership & TCCOR authority
700 – 1200 nm	Email warning every 24 hrs to MAB leadership & TCCOR authority
< 700 nm	Email warning every 6 hrs to MAB leadership & TCCOR authority

4.3. **Climatology.** WF personnel can provide climatology data for specific locations upon request. All climatology for MAB is archived locally and at the 14th Weather Squadron (14 WS). Climatology for locations elsewhere, including MOAs and alternate airfields, can be obtained from the 14 WS directly via SAR or through the WF.

4.4. **Weather Training.** The WF will provide weather training during the Instrument Refresher Course (IRC), the Quarterly Flight Safety Meeting (QFSM), and other routine training courses upon request. Weather training can also be accomplished by the WF for non-routine training courses or activities upon request, provided that the WF receives adequate information to effectively develop and execute training for these specific instances (i.e.: target audience, purpose of course or activity, why weather training is requested, and requested weather training topics).

5. Specialized Support. The WF will provide or arrange for specialized weather support upon request. "Specialized support" includes all products and services not identified within this document. Supported agencies will coordinate weather support requirements with the WF. These agencies will also provide access to plans, operations, programs, and support agreements to ensure that weather services and impacts are fully considered. Short-notice requests for weather support must be minimized. Pre-coordination for weather support is a major factor in allowing WF leadership to de-conflict and prioritize requests based on available resources. The Commander, 35th Operations Support Squadron (35 OSS/CC) or Director of Operations, 35th Operations Support Squadron (35 OSS/DO), is the ultimate authority for a support/do not support decision.

6. Base Agency Requirements. The following section contains additional agreements between the WF and base agencies that have not yet been annotated in this document. These requirements will be reviewed annually by the requesting unit and/or the WF and will be updated as required. Units are required to contact WF leadership to request changes to their respective support agreements.

6.1. **The 35 FW Safety (35 FW/SE).** The WF will:

6.1.1. Provide a primary and an alternate representative to the Interim Safety Board, Safety Investigation Board, and/or Accident Investigation Board.

6.1.2. Provide weather data for inclusion in aircraft safety reports upon request.

6.2. **The 35 FW Command Post (35 FW/CP).** The 35 FW/CP will:

6.2.1. Run local checklists after receiving notification of a WWA and follow procedures to notify all predetermined agencies.

6.2.2. Notify base personnel when TCCOR 5 or higher has been established by the MAB installation commander.

6.3. **Supervisor of Flying (SOF).**

6.3.1. The WF will:

6.3.1.1. Provide Cooperative Weather Watch (CWW) training upon request.

6.3.1.2. Brief the SOF prior to the start of 35 FW local flying and provide updates when weather conditions change at MAB, MOAs, or alternate airfields.

6.3.1.3. Notify the SOF during 35 FW flying hours for the following conditions:

6.3.1.3.1. When MAB flying conditions (current or forecast) unexpectedly deteriorate or improve through prescribed pilot weather categories.

6.3.1.3.2. When issuing or cancelling a WWA.

6.3.1.3.3. When thunderstorms enter or exit a 30 nm radius of MAB.

6.3.1.3.4. When a PIREP that contains significant weather information is received.

6.3.1.3.5. When ceiling shifts above or below 1,500 feet and/or visibility shifts above or below 3 statute miles at Draughon Range.

6.3.1.3.6. When wave heights or sustained surface winds within MOAs are forecast or observed to cross in between pilot risk thresholds (favorable, marginal, and/or unfavorable).

6.3.1.3.7. When sustained surface winds are observed greater than or equal to 35 knots at MAB, in any MOA, or at any alternate airfield.

6.3.1.3.8. When reports of volcanic ash within the local flying area (i.e.: Tohoku region, Hokkaido, and all MOAs) are received.

6.3.2. The SOF will:

6.3.2.1. Receive an in-person weather briefing from the WF prior to the start of flying operations.

6.3.2.2. Notify WF personnel to report significant changes in observed ceiling and/or visibility from the Air Traffic Control Tower, to report presence (or absence) of lightning and/or thunder, or to advise the WF on current Ice FOD conditions.

6.3.2.3. Notify WF personnel when local flying has concluded for the day, to inform the WF of any immediate changes to the flying schedule, or to inform the WF of any cancellations or diverts.

6.3.2.4. Solicit PIREPs for the local flying area, and relay any PIREPs to the WF within five minutes of receipt.

6.4. **The 35th Civil Engineering Squadron (35 CES).**

6.4.1. The WF will:

6.4.1.1. Provide MAB Snow Control (35 CES/CEOHP) with winter weather forecasts no later than 1700L each duty day during the winter season (15 Nov – 31 Mar), or when expecting winter weather conditions to impact MAB outside of the winter season. Updates to these forecasts will be provided following any significant changes to the forecast weather conditions.

6.4.1.2. Provide the Readiness and Emergency Management Flight (35 CES/CEX) inputs for chemical downwind messages (CDMs) and effective downwind messages (EDMs) within the first hour of the Chemical, Biological, Radiological, and Nuclear (CBRN) Control Center activation. These will be updated every 6 hours, or upon request.

6.4.1.3. Provide 35 CES/CEX and the Fire Emergency Services Flight (35 CES/CEF) with current or forecast weather upon request.

6.4.2. The 35 CES will:

6.4.2.1. Notify the WF when activating the CBRN Control Center and coordinate receipt of CDMs and EDMs.

6.4.2.2. Coordinate with the WF on annual updates to the MAB snow removal plan.

6.5. **The 35th Communications Squadron (35 CS).** The 35 CS will provide 24-hour assistance for base communications network outages that are critical to support operations or to maintain resource protection.

6.6. **The 35th Operations Support Squadron (35 OSS).**

6.6.1. The WF will:

6.6.1.1. Provide AMOPS with DoD FLIP entries or updates, including WF operating hours, PMSV frequencies, 17 OWS contact information, and airfield ceiling/visibility thresholds.

6.6.1.2. Provide climatology and lunar illumination data for long-range sortie scheduling upon request.

6.6.1.3. Provide CWW training to Draughon Bombing and Electronic Attack Range (DBEAR; 35 OSS/OSOR) controllers upon request.

6.6.2. Wing Scheduling (35 OSS/OSOS) will provide the WF access to the daily flying schedule via the Patriot Excalibur (PEX) website.

6.6.3. AMOPS will:

6.6.3.1. Notify the WF of any aircraft mishap via the secondary crash phone.

6.6.3.2. Pass any changes to the runway heading, runway surface condition (RSC), and runway condition reading (RCR) to the duty forecaster, or provide current information to the duty forecaster upon request.

6.6.3.3. Notify the WF of any Airfield Lighting System equipment status changes that may restrict or relax airfield visibility and ceiling minimums.

6.6.4. 35 OSS/OSOR will notify the WF during flying hours to report significant changes in observed ceiling and/or visibility from the range control tower, to report presence (or absence) of lightning and/or thunder, to pass any PIREPs within five minutes or as time allows to the on-duty forecaster, or to report any significant meteorological equipment outages.

6.7. **The 13th Fighter Squadron (13 FS) and 14th Fighter Squadron (14 FS).** The 13 FS and 14 FS will:

6.7.1. Ensure PEX is updated with mass briefing times. If PEX is inoperative, email the daily flying schedule to **35oss.osw@us.af.mil**.

6.7.2. Immediately alert the WF of any short-notice changes to the scheduled mass brief time.

6.7.3. Notify the WF at least 48 hours in advance of special briefings and/or missions outside the normal 35 FW flying schedule (e.g., weekend missions, ATR support, etc.), and assign a point of contact to coordinate weather support.

6.7.4. Notify the WF of all upcoming deployments or exercises.

6.7.5. When possible, notify the WF of any observed weather conditions over the airfield or within MOAs.

6.7.6. Pass PIREPs via SOF or Top 3 to the WF within five minutes of receipt, if possible.

6.7.7. During exercises and contingencies, pass observed target weather to the WF.

JESSE J. FRIEDEL, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoD FLIP, *High and Low Altitude – Pacific, Australasia, and Antarctica, 17 June 2021*

DoD FLIP, *Supplement – Pacific, Australasia, and Antarctica, 17 June 2021*

MAB IEMP 10-2, *6 January 2020*

AFI 15-128, *Weather Force Structure, 21 June 2019*

AFI 33-322, *Records Management and Information Governance Program, 23 March 2020*

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

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

AFMAN 15-129, *Air and Space Weather Operations, 9 July 2020*

AFPD 15-1, *Weather Operations, 14 November 2019*

PACAFI 15-101, *Weather Support for PACAF, 10 August 2016*

USFJI 15-4001, *Tropical Cyclone Conditions of Readiness (TCCOR), 5 May 2021*

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFPD—Air Force Policy Directive

AMOPS—Airfield Management Operations

AOL—Alternate Operating Location

ATR—Aviation Training Relocation

CBRN—Chemical, Biological, Radiological, Nuclear

CDM—Chemical Downwind Message

CWW—Cooperative Weather Watch

DoD—Department of Defense

DLT—Desired Lead Time

EDM—Effective Downwind Message

FBWOS—Fixed Base Weather Observing System

FLIP—Flight Information Publication

FOD—Foreign Object Debris

FPCON—Force Protection Condition

FW—Fighter Wing

ICAO—International Civil Aviation Organization

IRC—Instrument Refresher Course

JASDF—Japan Air Self-Defense Force

JET—Joint Environmental Toolkit

JTWC—Joint Typhoon Warning Center

LOCAL—Aviation Selected Local Weather Report

METAR—Aviation Routine Weather Report

MEF—Mission Execution Forecast

METWATCH—Meteorological Watch

MHz—megahertz

MOA—Military Operations Area

MOK—Mobility Kit

MOUI—Memorandum of Understanding International

NOTAM—Notice to Airmen

OPR—Office of Primary Responsibility

OPREP—Operational Report

OWS—Operational Weather Squadron

PACAFI—Pacific Air Forces Instruction

PEX—Patriot Excalibur

PIREP—Pilot Report

PMSV—Pilot-to-Metro Service

QFSM—Quarterly Flight Safety Meeting

RCR—Runway Condition Reading

RSC—Runway Surface Condition

SAR—Support Assistance Request

SCA—Sensor Collection Appliance

SOF—Supervisor of Flying

SPECI—Aviation Selected Special Weather Report

SWAP—Severe Weather Action Procedures

SWAT—Severe Weather Action Team

TAF—Terminal Aerodrome Forecast

TCCOR—Tropical Cyclone Conditions of Readiness

Top 3—Operations Supervisor

UHF—ultra-high frequency

USFJI—United States Forces Japan Instruction

WF—Weather Flight

WP—Weather Product

WWA—Watch, Warning, and/or Advisory

Terms

METAR/SPECI/LOCAL—An international code used for reporting, recording, and transmitting weather observations.

MISSIONWATCH—A deliberate process for monitoring terrestrial weather or the space environment for specific mission-limiting environmental conditions. The MISSIONWATCH process identifies and alerts decision makers to changes affecting mission success.

PIREP—A report of in-flight weather provided by an aircrew member.

PMSV—A service to provide weather information to aircrew in the cockpit typically via UHF radio waves. PMSV communication systems are not required for weather personnel to accomplish their mission; however, if installed, these systems provide a valuable service to aircrews.

TAF—A standard aviation text forecast containing the cloud cover, cloud heights, and visibility for general flight rule conditions, as well as wind, altimeter, and other weather parameters needed to sustain the landing and takeoff of aircraft.

Tropical Cyclone—A warm-core, non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters with organized deep convection and a closed surface wind circulation about a well-defined center with at least 33 knot sustained wind speeds.

Weather Advisory—A special product notifying an end user when an established environmental condition effecting operations is occurring or is expected to occur.

Weather Warning—A special weather product to facilitate resource protection decisions. Weather Warnings alert designated agencies to the imminent or actual occurrence of weather conditions of such intensity as to pose a hazard to life or property for which the agency must take immediate protective actions.

Weather Watch—A special weather product to facilitate resource protection decisions. Weather Watches provide advance notice to designated agencies of the existence of a potential for weather conditions of such intensity as to pose a hazard to life or property for which the agency should consider taking protective measures.

Attachment 2

JASDF WEATHER OBSERVING CRITERIA

A2.1. Introduction. The Japan Air Self Defense Force Misawa Weather Squadron, Air Weather Service Group, Air Support Command (JASDF Wx) is responsible for taking observations. This service is provided 24 hours a day, 365 days a year. Radar observations are taken at the discretion of the JASDF Weather duty forecaster. Surface weather observations are taken IAW JASDF Rules of Aeronautical Meteorological Observation (RAMO) Number 14, dated 08 Nov 2006, the MOUI 3005, and the published weather minimum for the airfield as determined by US Air Force TERPS.

A2.1.1. Definitions.

A2.1.1.1. Hourly observation: A complete observation taken, recorded, and disseminated near the beginning of each hour containing the following elements:

A2.1.1.1.1. Time (GMT)

A2.1.1.1.2. Wind direction, speed, and character. (10 Minute average)

A2.1.1.1.3. Prevailing visibility

A2.1.1.1.4. Runway visual range (when required).

A2.1.1.1.5. Present weather and obstructions to vision.

A2.1.1.1.6. Sky condition

A2.1.1.1.7. Temperature (degrees Celsius)

A2.1.1.1.8. Dew point (degrees Celsius)

A2.1.1.1.9. Altimeter setting.

A2.1.1.1.10. Sea-level pressure (disseminated local and longline).

A2.1.1.1.11. Remarks on preceding encoded data.

A2.1.2. Special observations. JASDF takes and disseminates five types of special observations: SPEC-1, SPECI-2, Q-SPECI, L-SPECI, and A-SPECI. All of these are limited element observations taken for meteorological conditions specified by special criteria containing in the RAMO, criteria listed in the DoD Flight Instrument Publication (FLIP) for Misawa AB, AFMAN 15-111, AFMAN 15-129, and customer requirements (JASDF or US Forces). The 5 types are as follows:

A2.1.2.1. SPECI-1: JASDF takes and disseminates locally and longline for severe weather conditions or conditions at or below field minimums.

A2.1.2.2. SPECI-2: JASDF takes a SPECI-2 immediately for deteriorating conditions (disseminated local and longline). For improving conditions, the RAMO allows for a 10 minute delay before the observer must take and disseminate a SPECI-2. SPECI-2 marked with a ** will only be taken during runway repair.

A2.1.2.3. Q-SPECI: JASDF disseminates these locally only and records them for permanent record. JASDF does not delay for improving or deteriorating conditions marked with ***. No Q-SPECI criteria for wind, RVR, or other weather phenomena.

A2.1.2.4. L-SPECI: Virtually the same as the Q-SPECI. The difference is that the L-SPECI is shorter than the Q-SPECI observation. No L-SPECI criteria for winds. LSPECI marked with a * will only be taken when phenomena stops.

A2.1.2.5. A-SPECI: Taken when notified of an aircraft emergency, accident, or mishap.

Table A2.1. JASDF Criteria.

Criteria	SPECI-1	SPECI-2	Q-SPECI	L-SPECI	A-SPECI
Ceilings decrease to less than 100 feet (airfield minimum)	X	X			
Prevailing visibility decreases to less than 400m (1/4SM) (field minimum).	X	X			
The runway visual range (RVR) one minute mean decreases to less than 500m (5/16SM) (field minimum).	X	X			
Ceilings decrease to less than or if below, increase to equal or exceed:					
- 3000 ft		X			
- 2000 ft		X			
- 1500 ft (USAF Cat E)		X			
- 1000 ft		X			
- 800 ft		X			
- 700 ft (USAF Cat D) ***		X	X		
- 600 ft (FLIP, circling)		X			
- 500 ft (USAF Cat C)		X			
- 400 ft		X			
- 300 ft (USAF Cat B)		X			
- 200 ft		X			
- 100 ft (PAR Mins)		X			
A layer of cloud increases from a scattered (no ceiling) condition to a broken or overcast condition or vice versa.		X			
Prevailing visibility decreases to less than or if below, increases to equal or exceed:					
- 8000m (5SM) (JASDF requirement).			X		
- 5000m (3 1/8SM) (Equivalent distance for USAF Cat E)		X			
- 3200m (2SM) (USAF Cat D)		X			
- 2600m (1 5/8SM) (Equivalent distance for USAF Cat C)		X			
- 2400m (1 1/2SM) (USAF Cat C)			X		
- 2000m (1 1/4SM)		X			
- 1800m (1 1/8SM) **		X			
- 1600m (1SM) (USAF Cat B)		X	X		
- 1500m (7/8SM)		X			
- 1200m (3/4SM)		X			
- 1000m (5/8SM) (Localizer Mins)		X			
- 800m (1/2SM)		X			

- 600m (3/8SM) (JASDF requirement)			X		
- 400m (1/4 SM) (PAR Mins)		X			
Runway Visual Range (RVR): When the one minute mean decreases to less than or if below, increases to equal or exceeds:		X			
- 1600m (1SM)		X		X	
- 1500m (7/8SM)		X		X	
- 1200m (3/4SM)		X		X	
- 800m (1/2SM)		X		X	
- 700m (7/16SM)		X		X	
- 600m (3/8SM)		X		X	
- 500m (5/16SM)		X		X	
- 400m (1/4SM)		X		X	
Wind condition. When the wind:					
Direction changes by 30 degrees or more and one or more of the following criteria is met:					
- Before wind direction changes by 30 degrees or more, a mean wind speed of 15 knots or more.		X			
- After wind direction changes by 30 degrees or more, a mean wind speed of 15 knots or more.		X			
- After wind direction changes by 30 degrees or more, the maximum wind speed is 20 knots or more.		X			
Mean wind speed changes by 10 knots or more and one of the following criteria is met:					
- Before a mean wind speed changes by 10 knots or more, the mean wind speed is 25 knots or more.		X			
- After a mean wind speed changes by 10 knots or more, the mean wind speed is 25 knots or more.		X			
Maximum speed changes by 10 knots or more when the maximum is 20 knots.		X			
Maximum speed changes from less than 20 knots to more than 20 knots or vice versa.		X			
When the following weather phenomena start/stop:		X			
- Thunderstorm	X	X		X*	
- Lightning	X	X		X*	
- Tornado, waterspout, or funnel cloud	X	X		X*	
- Hail		X		X*	
- Rain and snow mixed		X		X*	
- Freezing precipitation		X		X*	
- Blowing snow		X		X*	
- Drifting snow		X		X*	
- Sandstorm		X		X*	
- Ice pellets		X		X*	
- Squall (any sudden increase of at least 16 knots of mean wind speed with the increase in wind speed sustained at 22 knots or more for at least one minute		X			
before the speed diminishes).					

The condition of precipitation phenomena changes to be nothing or vice versa.		X			
When a volcanic eruption is first noted or observed.		X			
Nuclear Accident. When notified of a real world nuclear accident, JASDF will take and disseminate locally and longline a SPECI-1. The remark AEROB will be appended.		X			
SPECI will be taken within 15-minutes after the weather technician returns to duty following a break in observing coverage or augmentation at the unit unless an observation is filed during that 15 minute period.		X			
When the following weather phenomena changes in intensity (from weak or moderate to strong or more, or vice versa)					
- Thunderstorm		X			
- Rain/snow mixed		X			
- Freezing precipitation		X			
- Hail		X			
- Ice pellets		X			
A layer of clouds or obscuring phenomena aloft is observed below the highest published instrument landing minimum (including circling) applicable to the airfield and no layer aloft was reported below this height in the previous METAR or SPECI. This is currently 600 feet.		X			
Any other meteorological situation, which in the opinion of the observer is critical to the safety or efficiency of aircraft operations.		X			
A layer of cloud increases from a scattered (no ceiling) condition to a broken or overcast condition, when no ceiling was previously reported.***			X		
Aircraft emergency, accident, or mishap					X

Note 1: Runway Condition Reading (RCR): AMOPS will determine and disseminate RCR condition. It is not reported in the observation.

Note 2: Location Identifiers: JASDF will disseminate observations for Misawa AB using the identifier RJSM.

Note 3: 35 FW will accept 5000m as a substitute for 4800m/3SM and 2600m as a substitute for 2400m/1 1/2SM.

Note 4: 35 FW will accept that the following required AFMAN 15-111 observations are not being taken.

- Change in Runway. Following notification of a change in the runway in use, where the runway is dual-instrumented, weather sensors must be changed and allowed sufficient time to update with current information before taking the observation.

- Altimeter Setting (ALSTG). LOCAL ALSTG observations are taken 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 ALSTG value. A METAR or SPECI taken within the established time interval will meet this requirement, or the observation may be taken and disseminated as a single element LOCAL.

- RVR for the active runway is observed to decrease to less than or, if below, increase to equal or exceed6,000 feet (1830 meters)

- RVR is first determined as unavailable (RVRNO) for the runway in use, and when it is first determinedthat the RVRNO report is no longer applicable, provided conditions for reporting RVR exist.

Note 5: NOTE: USAF weather criteria dictates a SPECI be required for wind direction changes by 45degrees or more in less than 15 minutes and the wind speed is 10 knots or more throughout the wind shift, however wind SPECI observations will be taken according to JASDF criteria stated above.

Note 6: Values for SPECI-1 may be added or changed on a temporary basis based upon runway and flight pattern conditions when specified by TERPS as a valid weather minimum for the airfield (per MOUI 3005). Changes will be published in the DoD Flight Information Publication. All communication of said changes will occur through the JASDF chain of command.

A2.1.3. Procedures: JASDF Wx:

A2.1.3.1. Takes and records observations IAW criteria outlined above.

A2.1.3.2. Disseminates observations locally to 35 OSS/OSW via JWS.

A2.1.3.3. Corporative weather watch does not exist between JASDF and USAF and therefore, according to the JASDF Rules of Aeronautical Meteorological Observation (RAMO), tower visibility is not required.

A2.2. Procedures should the weather observing tower be disabled or destroyed:

A2.2.1. The JASDF Weather Squadron will deploy weather observers to a mobile location on the southeast side of the ramp. Observers will take observations 24 hours daily and transmit them by radio or telephone to the JASDF weather office in the sector operations center/direction center (SOC/DC) if operations in building 1090 are not possible.

A2.2.2. Because these observations most likely be taken using calibrated fixed meteorological equipment, all observed elements will be estimated. No RVR will be available.