BY ORDER OF THE COMMANDER RAMSTEIN AB

RAMSTEIN AIR BASE INSTRUCTION 15-101

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Weather

WEATHER SUPPORT

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This instruction implements Air Force Policy Directive (AFPD) 15-1, *Air Force Weather Operations*; AFI 10-229, *Responding to Severe Weather Events*; AFI 15-114, *Functional Resource and Weather Technical Performance Evaluation*; AFMAN 15-111, *Surface Weather Observations*; AFMAN 15-124, *Meteorological Codes*; AFI 15-127, *Air Force Weather Qualification Training*, AFI 15-128, *Air Force Weather Roles and Responsibilities*; and AFMAN 15-129 Volumes I and II, *Air and Space Weather Operations – Characterization (Vol I) and Exploitation (Vol II)*. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW AFMAN 33-363_USAFESUP, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/gcss-af61a/afrims/afrims/rims.cfm.** Refer recommended changes and questions about this publication to the OPR using the AF 847, *Recommendation for Change of Publication*; route AF 847s from the field through the appropriate functional chain of command.

This is a new document and must be completely reviewed. This instruction, in conjunction with AFW publications and appropriate supplements, establishes requirements and responsibilities for organizations providing tactical, operational, and staff weather support to 86 AW organizations. It provides policy and procedural guidance for the functions of weather support provided by the 86th OSS/OSW or WF and establishes responsibilities for other 86 AW organizations. It provides general information for weather services, including weather observations and forecasts, WWAs, space weather supported services and dissemination of information and reciprocal support. It provides guidance for weather support while in garrison, OST and deployed locations. It applies to all personnel assigned or attached to 86 AW, serves as a guide for its supported/supporting units, and outlines how the 86 AW will interact with the 21 OWS.

1. GENERAL INFORMATION.

1.1. **Purpose.** Weather support is provided to meet the mission requirements of units assigned to, or ISO the 86 AW and partner units. This instruction defines and consolidates into a single document the requirements, responsibilities, and procedures for weather support during peacetime, exercises, emergencies, contingencies and wartime operations.

1.2. **Administrative Notes.**

1.2.1. **Classification.** This document is UNCLASSIFIED and may be reproduced locally.

1.2.2. **Authority.** Department of Defense Instruction (DODI) 4000.19 and AFW Reengineering directives.

1.2.3. Changes to 86 AWI 15-101: Requests for changes to this document are coordinated through 86 OSS/OSW biannually or as changes in weather support dictate.

1.2.4. The OPR for this document is the 86 OSS/OSW Flt/CC, who can be reached at **86weather@us.af.mil** (86 OSS/OSW in the GAL) or DSN 480-2185.

1.3. **Assumptions.** Weather communications networks will function continually and without interruption to provide sufficient data for continuity of weather operations during peacetime. Loss of communication will cause significant degradation of quantity and quality of weather services.

1.4. **Limitations.** 86 OSS/OSW support to 86 AW is limited as follows:

1.4.1. The 86 OSS/OSW is responsible for ASF, MIF, and SIF functions to 86 AW at RAB, Germany. When able, 86 OSS/OSW will direct inquiries for the aforementioned functions to the appropriate supporting weather unit IAW AFI15-128 and AFMAN 15-129V2. The 521st Air Mobility Operations Wing (AMOW) and 435th Air Ground Operations Wing (AGOW) are tenant wings utilizing Ramstein airfield and base facilities; however, they will be predominantly supported by 618 AOC (TACC)/XOW, 435AMS/OPSF, respectively and the 21 OWS. Exceptions will be listed in the following sections.

1.5. **Roles and Responsibilities.** Coordination on this instruction constitutes acceptance in lieu of a memorandum or Letter of Agreement unless one is required by AFI or AFMAN.

1.5.1. 86 OSS/OSW provides world-class weather support for the execution of 86 AW and partner missions anytime, anywhere. OSW remains prepared to support EUCOM and 86 AW peacetime and wartime taskings with dedicated equipment and personnel.

1.5.1.1. 86 OSS/OSW Flt/CC ensures overall operational capability of the flight by providing intent, direction and resources in alignment with 86 AW priorities. The Flt/CC is responsible for the conduct and direction of the 86 OSS/OSW.

1.5.1.2. 86 OSS/OSW Wing Weather Officer (WWO) exploits and makes weather a force multiplier by providing liaison and briefing services to all 86 AW agencies.

1.5.1.3. 86 OSS/OSW Flt Chief provides technical leadership and oversees daily weather operations ISO base and flying operations. The Flt Chief adapts resources to mission requirements and manages weather services and equipment. Lastly, this individual is responsible for all training and readiness activities and the technical health of the forecast unit.

1.5.2. 424 ABS and the associated airfield located at Chièvres AB are not manned with AF weather personnel. ASF services are provided by Belgian Air Component Weather Station, Chièvres AB (MET EBCV). FWBs are provided by 21 OWS FWB Section at Kapaun Air Station (AS), Germany (21 OWS/FWB), per AFI 15-128 and AFMAN 15-129V1. Services provided by 86 OSS/OSW are outlined in 3.8.

1.5.3. 21 OWS provides synoptic-scale analysis and forecast products, resource protection, TAFs, METWATCH, and 603 AOC/AMD/IFM tasked FWBs for EUCOM and US Africa Command (AFRICOM) AORs. 21 OWS provides all weather products to USAFE WFs as required by relevant AFMANs and installation datasheets. Specific weather requirements are outlined and coordinated with 21 OWS as needed. 21 OWS ensures the weather support is available 24 hours per day, seven days a week. NOTE: 21 OWS does not provide MEFs or provide embedded forecasters within the flying units attached to 86 AW, as they are not manned to do either task.

1.5.4. The 618 AOC (TACC)/XOW provides weather services to the 618 AOC (TACC) to include MEFs for United States Transportation Command (USTRANSCOM)-tasked missions.

1.5.5. Non-86 AW transient aircrew briefings will be provided upon request by the 86 OSS/OSW as time and resources allow IAW posted 86 OSS/OSW duty priorities (Attachment 2). Otherwise, aircrew briefings will be provided through the 21 OWS. A minimum of two hours' notice is required for a briefing request.

1.6. **Release of Weather Information**. 86 OSS/OSW does not provide weather support or information to non-DoD organizations or to the general public except as authorized by AFI, Joint Ethics Regulation (5500.7-R) or the 86 AW/CC (or designated representative). In addition, 86 OSS/OSW personnel will not release weather data to outside agencies unless coordinated through 86 AW Public Affairs (PA).

1.7. **Operating Hours, Location, and Contact Information.**

1.7.1. **Airfield Services Function (ASF).**

1.7.1.1. **Operating Hours.** The Airfield Services Functions operates 0600L to 2200L Monday through Friday and 1000L to 2200L on German holidays. The Airfield Services Function is closed on USAFE family and 86 AW goal days or down days and US Federal holidays when local training flights are not scheduled. When the weather technician on duty is performing the MIF in addition to the ASF, closing hours will adjust accordingly if the recovery time of the last local training mission extends past 2200L.

1.7.1.2. **Location.** The Airfield Services Function is located in Room 601, 6th floor of Building 2303 (Tower). The AOL is located on the 2nd floor of Building 2372.

1.7.1.3. **Contact Information.** For general weather inquiries, and FWBs, during operating hours contact ASF, DSN: 480-2488, or via email at **86weather@us.af.mil** (86 OSS/OSW in the GAL). Outside of operating hours, contact the 21 OWS Ramstein forecaster DSN: 489-2134, or the 21 OWS/FWB, DSN: 489-2133. For 86 AW contingencies, exercises, emergencies, or severe weather events (i.e. SWAP initiation) requiring weather support outside of operating hours, contact the 86 OSS/OSW standby technician via the on-call cell phone at 0170-786-6997 or the 86 OSS/OSW Flt/CC at 0151-2778-4699.

1.7.2. Mission Integration Function (MIF).

1.7.2.1. **Operating Hours.** The MIF will tailor operating hours to accommodate local training flight mission requirements. As a general rule, the MIF will be on duty during local training mission launch and recovery times and not during DoD FLIP RAB quiet hours. The MIF shift is normally an 8-hour window that begins in the morning, depending upon local training mission times. Training missions that extend into late afternoon or early evening hours will be covered by the ASF as necessary. The MIF is closed on USAFE family and 86 AW goal days or down days and US Federal holidays when local training flights are not scheduled.

1.7.2.2. **Location.** When manning allows, the MIF (embedded briefer) will be located in the 37 AS Mission Planning room in Building 2192. The MIF may also

perform duties from the 6th floor of Building 2303 (Tower), Room 601 as required (e.g. all 37 AS missions have already taken off, etc.). Outside of MIF operating hours, the MIF and ASF are performed by one forecaster in Room 601, 6th floor of Building 2303 (Tower). Reference paragraph 1.7.1.2 for AOL information. At this time, the 76th AS has not requested an embedded forecaster.

1.7.2.3. **Contact Information.** During MIF operating hours, contact the MIF at DSN: 480-7780. Reference paragraph 1.7.1.3. for additional contact information outside of MIF operating hours, or when the briefer is not in the 37 AS Building 2291.

1.7.3. **Staff Integration Function (SIF).**

1.7.3.1. **Operating Hours.** The SIF operates 0730L to 1630L Monday through Friday and is closed on USAFE family and 86 AW goal days or down days and US Federal holidays.

1.7.3.2. **Location.** The SIF is located in on the 2nd floor of Building 2303 (Tower). Reference paragraph 1.7.1.2 for AOL information.

1.7.3.3. **Contact Information.** During operating hours, contact the SIF at DSN: 480-2185. Reference paragraph 1.7.1.3 for additional information.

1.7.4. **Operating Hours During 86 AW Contingencies and Exercises.** All 86 OSS/OSW elements will alter operating hours to meet mission requirements during 86 AW contingencies and exercises.

1.8. **Duty Priorities.** 86 OSS/OSW completes daily tasks IAW the duty priorities list in Attachment 2.

1.9. **Airfield Support Function (ASF).**

1.9.1. **"Eyes Forward".** The ASF functions as the "eyes forward" for the 21 OWS and keeps the 21 OWS Ramstein forecaster informed on changing environmental conditions for TAF production and amendment, weather WWAs, and general meteorological situational awareness. The ASF will notify the 21 OWS forecaster of all operationally significant PIREPs received from aircraft arriving to or departing from RAB. The "eyes forward" function yields meaningful meteorological information not contained in coded observations to the 21 OWS and is an integral part of the METWATCH process for RAB.

1.9.2. **Observations.**

1.9.2.1. Observations are issued for RAB under the ICAO identifier ETAR, 24 hours a day, seven days a week. Routine "METAR" observations are issued every hour between 55 and 59 minutes past the hour. Special "SPECI" observations are issued whenever weather conditions cross RAB airfield specification criteria thresholds. These criteria are based on AFMAN 15-111 SPECI Criteria, AFMAN 15-129V1 standard specification and amendment criteria, and FLIP takeoff and landing minima for RAB. A complete list of specification and amendment criteria for RAB can be found in the Ramstein (ETAR) Installation Datasheet, under the "SPECI Criteria" and "TAF Criteria" tabs.

1.9.2.2. RAB utilizes the AMOS, FMQ-19 "Fixed Based System" as the primary means of gathering real-time weather data on the Ramstein airfield complex. The AMOS is an integrated system of multiple weather sensors that continually measures environmental weather conditions to provide responsive, reliable, real-time weather information ISO flight operations. The 86 OSS/OSW utilizes the AMOS to take and disseminate automated observations IAW AFMAN 15-111. AMOS equipment and sensors are installed on runway 08, runway 09, runway 26, runway 27, and at the runway complex midfield. A certified observer maintains weather situational awareness and is available to augment AMOS observations during standard operating hours or upon recall during off-duty hours in the event that the AMOS system is malfunctioning.

1.9.2.3. 86 OSS/OSW will perform one of two types of weather watch: a Basic Weather Watch (BWW) or a Continuous Weather Watch (CWW) IAW AFMAN 15-111. At RAB, the FMQ-19 observing system performs an automatic CWW. During back-up or supplemental augmentation of the AMOS, the ASF technician will perform a BWW unless required by environmental conditions outlined in AFMAN 15-111.

1.9.2.4. Augmentation

1.9.2.4.1. Augmentation is the process of having position qualified weather technicians manually add or edit data to an observation generated by a properly sited automated observing system. Certain weather phenomenon's are beyond the detection and reporting capabilities of the FMQ-19 system. Supplementary augmentation is the method of manually adding meteorological information to an automated observation that is beyond the capabilities of the FMQ-19 and will be conducted during operating hours. At all times (during both operating and non-operating hours), 86 OSS/OSW personnel will respond to SWAP procedures (see paragraph 1.12) and supplement mandatory criteria as required.

1.9.2.4.2. Augmented meteorological elements will be determined from the primary official point of observation (elevation 817 ft above MSL) on the roof of the 4th floor on the east and west side of Building 2303. When 86 OSS/OSW is conducting operations from the AOL (Building 2372), augmented meteorological elements will be determined from the alternate official point of observation (elevation 779 feet above MSL) just to the southwest of Building 2372.

1.9.2.4.3. RAB Specific Supplementation Criteria

Table 1. Mandatory Supplementary Weather Conditions Criteria (per AFMAN 15-111, amended for RAB):

Body of Report
Tornado (+FC) (NOTE 1) (NOTE 2)
Funnel Cloud (FC) (NOTE 1) (NOTE 2)
Waterspout (+FC) (NOTE 1) (NOTE 2)
Hail (GR) (Only when size is greater than ¼ inch IAW local warning criteria)
Volcanic Ash (VA)
Ice Pellets (IP)
Remarks Section of Report
Snow Depth (only during airfield operating hours and if heavy snow warning has been issued and snowfall is occurring)
NOTES: 1. The immediate reporting of funnel clouds takes precedence over any other phenomena. 2. ASF technician will log on to AMOS and be prepared to supplement for tornadic activity any time a weather watch or warning has been issued for the phenomena.

1.9.2.4.4. **NOTE**: Under previous AFMAN 15-111 guidance, a risk assessment for the supplementation of prevailing visibility was conducted by 86 AW/SE in 2008 and is available to reference upon request. As current AFMAN 15-111 guidance states that observations may be augmented for both the criteria listed in Table 1 and conditions that would adversely impact flight or ground operations (based on documented support unit requirements), this risk assessment is no longer necessary.

1.9.2.4.4.1. The ASF is authorized to supplement the prevailing visibility of the AMOS weather observation when VFR conditions (5000 meters or 1500ft AGL) are predominant over the airfield but the active sensor is reporting unrepresentative values due to localized fog (i.e. the active sensor is sitting in the only area of patchy fog on the flight line).

1.9.2.4.4.1.1. The ASF will only supplement if notification is received from tower personnel indicating that operations are being impacted due to this erroneous reading (i.e. VFR pattern closed, formation awaiting takeoff).

1.9.2.4.4.1.2. Based on ORM, supplementation will only take place during daylight hours when sufficient visual cues are available for an accurate manual observation.

1.9.3. **TAF.** TAFs are coordinated with and issued by the 21 OWS RAB forecaster IAW AFMAN 15-124 using specification and amendment criteria as designated in AFMAN 15-129V1 displayed in the Ramstein (ETAR) Installation Datasheet. Exception: Deviations required for SARs or Memorandums of Agreement (MOAs) for deployed weather teams.

1.9.3.1. TAFs for RAB will be issued every 8 hours by the 21 OWS for the ICAO identifier ETAR and are valid for a 30-hour period. Official TAF issue times for RAB are 0200Z, 1000Z, and 1800Z and will be disseminated NLT 15 minutes past each respective issue time.

1.9.3.2. Weather conditions within the TAF are forecast and amended for specific RAB amendment criteria listed in the Ramstein (ETAR) Installation Datasheet. If any unforecast criteria are occurring and are expected to persist for more than 30 minutes, 21 OWS will amend the TAF. Of note, 21 OWS will amend the TAF to be representative of current conditions that are different from those initially forecast, at a minimum, when deemed operationally significant by the 86 OSS/OSW but that do not break amendment criteria.

1.9.3.3. The RAB TAF primary means of dissemination is JET, see paragraph 1.9.4. for information regarding JET.

Table 2. RAB TAF Example (TAFs are coded per AFMAN 15-124, Chapter 1).

TAF ETAR 2010/2116 23010KT 9000 -RA BKN015 OVC020 QNH2995INS TEMPO 2010/2014 BKN010 OVC020 BECMG 2013/2014 23012G20KT 9000 -RA SCT010 BKN015 QNH2994INS BECMG 2017/2018 23010G15KT 9000 -RA SCT015 BKN020 QNH2996INS BECMG 2023/2024 23010KT 9999 NSW SCT020 BKN030 QNH2987INS T19/2112Z T14/2010Z	
TAF	Terminal Aerodrome Forecast
ETAR	Location Identifier Ramstein
2010/2116	Valid Dates and Times of Forecast 20th day of the month, @ 1000Z until the 21st day of the month at 1600Z
23010KT	Wind direction/sustained speed/gust Winds from 230 degrees at 10 knots
9000	Visibility 9000 meters
-RA	Present Weather Light Rain
BKN015 OVC020	Sky Condition/Cover (up to 25,000 feet) Ceiling 1500 feet Broken, Ceiling 2000 Overcast
QNH2995INS	Altimeter 29.95 inches of Mercury
TEMPO	Temporary conditions (intermittent changes)
BECMG	Predominant conditions
T19/2112Z	Maximum Temperature 19 degrees Celsius on the 21st day at 1200Z
T14/2010Z	Minimum Temperature 14 degrees Celsius on the 20th day at 1000Z

1.9.4. **Joint Environmental Toolkit (JET).** JET is a computer dissemination system used to distribute weather information to wing agencies and into the AFW distribution network.

1.9.4.1. JET is the primary dissemination tool for meteorological data on Ramstein (current airfield weather conditions, observations, TAFs, and weather WWAs). Operators requiring JET access should contact the 21 OWS to have an account and password created.

1.9.5. **Resource Protection - Weather WWA.** Reference Chapter 2.

1.10. **Mission Integration Function (MIF).**

1.10.1. Mission Integration involves gaining an in-depth understanding of supported mission platforms, equipment, and systems capabilities and sensitivities as well mission processes to reliably inject timely, accurate, and relevant environmental information at every decision point in the mission planning process to optimize mission execution. To ensure maximum mission integration, 86 OSS/OSW personnel executing the MIF will:

1.10.1.1. Provide deployed or in place reachback mission planning, climatology, MEFs to include FWBs and stand-up crew briefings with requested space weather, volcanic ash plume, tropical system, air refueling tracks, primary and alternate destination weather, and DZ and LZ forecasts. Mission Execution Support will be provided primarily in the form of MWPs such as: MEF flimsy, DD Form 175-1, *Weather Briefing*, DZ and LZ forecast.

1.10.1.2. Once crews are airborne, weather forecasters will MISSIONWATCH all missions briefed to pilots and notify the 37 AS and 76 AS Operations Centers of any mission-impacting changes to forecast weather.

1.11. **Staff Integration Function (SIF):**

1.11.1. 86 OSS/OSW SIF provides direct or continuing support to a mission set and determines both environmental threats and effective decision points to inject weather into the planning and execution process of the mission.

1.11.2. SIF will:

1.11.2.1. Ensure sound ORM principles and other safety considerations are applied to mitigate hazards to the mission.

1.11.2.2. Emphasize the need to the chain of command for weather forces participation in combat related training through operational exercises.

1.11.2.3. Ensure adequate resources are provided to meet mission requirements.

1.12. **Severe Weather Action Plan (SWAP).** SWAP consists of actions taken by the WF to enhance the unit's response capability during a severe weather event. Actions include, but are not limited to, recalling personnel or reallocating resources from other tasks, based on sound ORM practices, to provide focused support during a severe weather event.

1.12.1. **Severe Weather Recall.** SWAP dictates that the duty weather technician (21 OWS forecaster during non-duty hours) will contact the designated standby personnel whenever severe conditions are observed or forecast or for any weather situation, in the opinion of the duty technician, that constitutes a threat to Ramstein, regardless of whether the OWS has issued a weather warning and or watch. The technician will coordinate with the standby personnel on the actual requirement for their recall to the weather station, based on workload or severity of the weather situation. Severe weather recall is not a substitute for the alert notification pyramid on warning, watch and advisory dissemination. SWAP is designed to assist installation command personnel in managing severe weather events.

1.12.2. Table 3 lists Ramstein SWAP criteria. Per AFMAN 15-129V1, tornadic activity and severe thunderstorms with hail GTE to ¾" require a forecaster to be present in order to provide the eyes forward function and supplementation as necessary. All other SWAP criteria will be evaluated on a case-by-case basis using ORM and flight leadership

coordination, if necessary, to determine whether or not the standby forecaster will report to the weather station. (For example, during heavy snow or freezing rain, the road conditions may not be safe for travel.) After normal duty hours, the standby forecaster will report to the weather station NLT 1 hour prior to the forecast weather warning conditions. Issuance of a Watch alone WILL NOT require the standby forecaster to report to the weather station. Exception: Tornado Watch requires the standby forecaster to report to the weather station to be ready to supplement for tornadic activity.

1.12.3. At a minimum, notify the standby technician & Flt Chief (or Flt/CC) when a watch, or warning is **issued or observed** for any of the conditions in Table 3. Once a severe weather recall is activated, the team leader will intensify the "eyes forward" and MISSIONWATCH functions, and be prepared to supplement the weather observation as required. Intensifying "eyes forward" and MISSIONWATCH functions can include but is not limited to ceasing all non-operationally pertinent tasks (training, administrative tasks), assigning an additional forecaster to assist the on-duty or on-call duty personnel. **Ensuring an expedited response to operational concerns is the top priority.** The team leader will also perform data saves and emergency actions as necessary, consolidate and archive all pertinent weather data for an event that would require an OPREP-3 to be submitted by 86 AW/CP IAW AFI 10-206, *Operational Reporting*, AFI 10-229, and AFI 10-206_USAFESUP_I, *Operational Reporting*. The OWS will be notified of the OPREP-3 and will provide the WF with copies of archived weather data as required.

Table 3. SWAP Criteria

1.	Tornado/Funnel Cloud*
2.	Severe Thunderstorms (Winds GTE 50 kts and/or Hail GTE ¾ inch*)
3.	Volcanic Ash*
4.	Ice Pellets*
5.	Snow GTE 2 inches in 12 hours (Snow Depth Measurement)*
6.	Rain GTE inches in 12 hours
7.	Blizzard - Surface visibility LTE 0400 meters - Considerable falling/blowing snow - Sustained wind speeds or gusts GTE 30 kts - Duration GTE 3 hours
8.	Surface Winds GTE 50 kts
9.	Freezing Precipitation

* Ramstein Mandatory Supplementary Criteria (NOTE: Hail GTE ¼" is mandatory supplementary criteria, while hail GTE ¾" is SWAP criteria)

1.13. **Alternate Operating Location (AOL), Continuity of Operations.**

1.13.1. In the event of an emergency evacuation of all primary weather facilities listed in paragraph 1.7, 86 OSS/OSW personnel will resume duties at the AOL. Reference paragraph 1.7.1.2 for AOL information. NOTE: PMSV is not available at the AOL. Reference paragraph 3.5 for back up PMSV coverage.

1.13.2. In the event of a JET communications outage, observations, PIREPs, TAFs and observed WWAs will be disseminated locally by office communicator, email, or telephone to ATC, GCA, CP, Airfield Management, and the 21 OWS. If the communication method is not simultaneous, ATC/GCA is contacted first. Lastly, the observations, PIREPs, TAFs and observed WWAs will be disseminated longline (i.e. internet). If the 86 OSS/OSW is unable, the 21 OWS will disseminate the data longline, and the 86 OSS/OSW will document WWAs and observations using hard copy procedures.

1.13.3. In the event of a power outage or FMQ-19 outage, back up tactical weather equipment to include a TMQ-53 or TMOS, a laser range finder, Kestrel, visibility markers and compass will be utilized to continue providing a reduced ASF.

1.13.4. In the event of a significant or catastrophic OWS communications outage, 86 OSS/OSW will assume responsibility for the issuance and amendment of the RAB TAF, forecasted WWAs and FWBs for flights originating or transiting through RAB until which time 21 OWS has reconstituted to their Alternate Production Site.

1.13.5. In the event of a significant or catastrophic communication outage or 86 OSS/OSW personnel are no longer able to provide support to 86 AW agencies, 21 OWS assumes all 86 OSS/OSW weather support responsibilities as documented in AFMAN 15-129V1, the most current Ramstein (ETAR) Installation Datasheet between 21 OWS and 86 AW, and this instruction.

2. WEATHER WATCHES, WARNINGS AND ADVISORIES (WWAs).

2.1. **General Information.** WWAs are issued, as directed in AFMAN 15-129V1, Chapter 4, to protect vital resources from hazardous conditions and to provide maximum flight safety. Each watch, warning, or advisory is assigned a number following the two-digit number of the current month (e.g. 08-001 would be the first WWA issued in August). Only one watch or warning will be in effect at one time for a given location, excluding the tornado warning and lightning watch or warning. Although only one watch or warning may be in effect at one time for a given location, multiple-criteria WWAs may be in effect at the same time for a single location. All WWAs are valid for an area within an 5 NM radius from the center of the Ramstein airfield midpoint. **NOTE:** WWAs are specifically issued for RAB and as such may not necessarily be valid or representative throughout the entire KMC.

2.2. **Definitions and Terms.** WWAs consist of three distinct terms: watches, warnings, and advisories.

2.2.1. **Weather Warning.** A special notice to notify installation personnel and supported units when an established weather condition of such intensity as to pose a hazard to life or property is occurring or expected to occur. Weather warnings provide concise information outlining environmental threats and are used to make resource protection decisions.

Figure 1. Weather Warning Example

WEATHER WARNING 05-002 FOR RAMSTEIN (ETAR) VALID 12/1700Z (12/1900L) TO 12/2000Z (12/2200L)

STRONG WINDS GREATER THAN OR EQUAL TO 35 BUT LESS THAN 50 KTS. FORECAST VALUE 35 KTS. NOT ASSOCIATED WITH THUNDERSTORMS.

WINDS WILL BE FROM 260 DEGREES.

WEATHER WATCH 05-003 AND ADVISORY 05-006 REMAIN IN EFFECT

2.2.1.1. This example shows the second weather warning issued during the 5th month. The warning is for wind speeds between 35 and 50 knots, and is forecast to begin on the 12th day of May at 1700Z (1900L) and end the same day at 2000Z (2200L). The maximum expected value for wind speeds is 35 knots, and the wind direction is 260 degrees. This example also indicates that a separate Weather Watch 05-003 and Weather Advisory 05-006 remain in effect.

2.2.2. **Weather Watch.** A special notice to notify installation personnel and supported units of a potential for environmental conditions of such intensity as to pose a hazard to life or property. Weather watches indicate a potential for environmental threats and are used to make force protection and risk management decisions.

Figure 2. Weather Watch Example

WEATHER WATCH 05-001 VALID 2/1700Z (2/1900L) TO 2/2000Z (2/2200L)

POTENTIAL FOR LIGHTNING EXISTS WITHIN 5 NM.

WEATHER ADVISORY 05-001 REMAINS IN EFFECT

2.2.2.1. This example shows the first weather watch issued during the 5th month. The watch is for lightning within 5 NM, and is forecast to begin on the 2nd day of May at 1700Z (1900L) and end the same day at 2000Z (2200L). This example also indicates that a separate Weather Advisory 05-001 remains in effect.

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

Figure 3. Weather Advisory Example

WEATHER ADVISORY 05-009 FOR RAMSTEIN (ETAR) VALID 13/1845Z (13/2045L) TO 13/2100Z (13/2300L)

WINDS FROM 25 TO 34 KTS. FORECAST VALUE 25 KTS.

WINDS WILL BE FROM 220 DEGREES

2.2.3.1. This example shows the 9th weather advisory issued during the 5th month. The advisory is for wind speeds between 25 and 34 knots, and is forecast to begin on the 13th day of May at 1845Z (2045L) and end the same day at 2100Z (2300L). The maximum expected value for wind speeds is 25 knots, and the wind direction is 220 degrees.

2.3. **Weather WWA Responsibilities.**

2.3.1. 86 OSS/OSW ASF technicians will work closely with the 21 OWS to issue, cancel, amend, and extend WWAs for RAB. 86 OSS/OSW will issue observed warnings and advisories during operating hours. 21 OWS will issue forecast WWAs. During 86 OSS/OSW non-duty hours, 21 OWS will issue both observed and forecast WWAs.

2.3.2. The 21 OWS issues *forecast* WWAs for operational threshold criteria IAW AFMAN 15-129V1, Chapter 4. The 86 OSS/OSW will issue all the *observed* advisories, as well as the warning for lightning observed within 5 NM of the airfield complex. The OWS will assume responsibility for this warning during weather station closure.

2.3.3. Under rare circumstances 86 OSS/OSW may, without prior coordination, issue WWAs to facilitate resource protection actions when sufficient time does not exist to communicate a change in weather with the 21 OWS. The 86 OSS/OSW will forward pertinent information to the 21 OWS to ensure the warning is entered into the AFW dissemination system. (Ref. AFMAN 15-129V1, Table 4.2).

2.3.4. WWA responsibilities for 86 AW while deployed are coordinated with 21 OWS and included in SARs, if necessary.

2.4. **Dissemination and Criteria.** WWA dissemination and criteria with desired lead time (DLT) are outlined in the Ramstein (ETAR) Installation Datasheet under the "Unique WWA Support" tab.

2.4.1. 21 OWS disseminates all RAB WWAs to 86 OSS/OSW by automated phone messaging system, email and JET.

2.4.2. 21 OWS posts all EUCOM AOR WWAs onto the 21 OWS NIPRNET and SIPRNET web pages.

2.4.3. The criteria for the WWA is coordinated and outlined by the supporting documents between the 86 OSS/OSW and 21 OWS.

3. SUPPORT TO FLYING OPERATIONS.

3.1. **Local Flying Squadrons.** There are two flying squadrons assigned to the 86 AW that 86 OSS/OSW is tasked to support.

3.1.1. **Assumptions.** 86 OSS/OSW will use access GDSSII to the maximum extent possible to integrate into supported units.

3.1.2. **Shortfalls.** 86 OSS/OSW does not have visibility of any further mission data not listed in GDSSII. 86 AW aircrews are required to maintain consistent dialog with the MIF during all phases of mission execution. Exception: During 37 AS MIF operations, the MIF has access to the 37th Scheduling Board information, Reference paragraph 1.7.2.2.

3.1.3. **37 AS.** 86 OSS/OSW provides routine training mission weather support to 37 AS.

3.1.3.1. **Airframes Used.** The 37 AS operates the C-130J model for tactical airlift.

3.1.3.2. **Commonly Used Local Flying Areas.** 37 AS commonly uses local airspace around RAB and airspace throughout Germany, eastern France, and the Benelux.

3.1.3.2.1. **Drop Zones and Operating Areas**. In addition to local airspace, 37 AS also operates at a multitude of DZs and operating areas. Commonly used DZs and operating areas include (but are not limited to):

3.1.3.2.2. Alzey DZ- Elevation 902 FT (MSL)/Coordinates- N49° 40’ E008° 09’

3.1.3.2.3. Bitburg DZ-1230 FT (MSL)/N49° 57’ E006° 34

3.1.3.2.4. Crow DZ-1726 FT (MSL)/N49° 41’ E011° 43’

3.1.3.2.5. Juliet DZ-886 FT (MSL)/N46° 07’ E012° 44’

3.1.3.2.6. Marnheim DZ-968 FT (MSL)/N49° 36’ E008° 03’

3.1.3.2.7. Malmsheim DZ-1476 FT (MSL)/N48° 47’ E008° 55’

3.1.3.2.8. Vorgeben DZ-438 FT (MSL)/N49° 34’ E011° 43’

3.1.3.2.9. Klauzer DZ-1515 FT (MSL)/N49° 15’ E011° 55’

3.1.3.2.10. Rota DZ-0 FT (MSL)/N36° 34’ W006° 22’

3.1.3.2.11. Bunker DZ-1424 FT (MSL)/N49° 40’ E011° 55’

3.1.3.2.12. French Polygone-Coordinates-N49° 07’ E006° 35’; N49° 07’ E006° 55’; N48° 55’ E006° 38’; N48° 55’ E006° 55’; N48° 40’ E006° 35’; N48° 13’ E006° 31’; N48° 58’ E006° 20’; N48° 01’ E006° 49’; N48° 29’ E006° 58’

3.1.3.2.13. German Polygone-Coordinates-N49° 21’ E007° 24’; N49° 10’ E007° 39’; N49° 11’ E007° 45’; N49° 19’ E008° 05’

3.1.3.3. **Airframe and Mission Limiting Weather Thresholds.** Airframe and mission limiting weather thresholds can be found in the Ramstein (ETAR) Installation Datasheet.

3.1.4. **76 AS.** 86 OSS/OSW provides routine training mission weather support to 76 AS.

3.1.4.1. **Airframes Used.** The 76 AS operates the C-20, C-21, C-37, and C-40 aircraft for operational support and executive airlift.

3.1.4.2. **Commonly Used Local Flying Areas.** The 76 AS commonly operates throughout airspace in Germany and the Benelux for local proficiency training.

3.1.4.3. **Commonly Used Training Areas.** The 76 AS commonly operates throughout airspace in western, central and southern Europe for point to point training. As such, TAFs will be included on the RAB Aviator Weather Page (see paragraph 3.1.5.) for typical aerodromes used outside of Germany, such as Mildenhall Airfield (EGUN) and Chièvres (EBCV). However, aircrews are required to contact 86 OSS/OSW as soon as crews are assigned for VALOR and SPAR missions (NLT 1700L the day prior or the last duty day prior) with pertinent mission planning information so as to mitigate weather impacts along their routes of flight.

3.1.4.4. **Airframe and Mission Limiting Weather Thresholds.** Airframe and mission limiting weather thresholds can be found in the Ramstein (ETAR) Installation Datasheet, under the "86 AW Aircraft WX Limitations" and "Mission WX Limitations and Info" tabs.

3.1.5. **MEF.** A MEF consisting of takeoff, enroute, destination and alternate forecasts, hazards, flight level winds/temperature charts, DZ forecast as applicable, and space weather impacts will be provided to the mission commander 2 hours prior to take-off (unless prior coordination with MIF briefer dictates otherwise) via the RAB Aviator Weather SharePoint Page at: https://ice.usafe.af.mil/sites/86OG/OSS/OSW/Documents/AVIATOR%20WX%20PAGE.aspx?PageView=Shared. Should the Aviator Weather Page become unavailable, e-mail will be the method of delivery. Provide all weather briefings to each flying squadron NLT 2 hours prior to mission departure time in person (when working directly within each squadron) or by sending weather briefing to SharePoint, email, fax, (when unable to in person).

3.1.5.1. **MEF Operating Area.** The MEF provides weather coverage to the operating area bounded by western, central and southern Europe. Flights operating beyond this requesting weather support will require a 175-1 weather briefing unless otherwise contacted by 76 AS aircrews, see paragraph 3.1.4.3.

3.1.5.2. **MEF Description.** The 86 OSS/OSW Mission Planning/Execution Forecast (MEF) is an MWP based on the MEF Process and designed to provide local flying squadrons with consistent and tailored mission planning and execution forecast weather. It allows quick and easy access to detailed weather information at home station, along flight routes, and over DZs and operating areas to assist local flying squadron missions.

3.1.5.3. **MEF, DD 175-1, and Drop Zone Forecast Example and Decoder.** Examples of and instructions for decoding the RAB MEF, DD 175-1 and DZ forecast can be found in Attachment 3.

3.1.6. **Formation Briefings.** If weather manning or duty priorities allow and it is requested by the mission commander, an in person formation briefing will be conducted for multi-aircraft operations (3-ship or more) at the 37 AS (location as directed by mission commander).

3.1.7. **Off-Station Training (OST) Mission Support.** 86 OSS/OSW will provide weather support to OST operations. Weather support can be provided in-person or from home station depending on mission requirements and 86 OSS/OSW manning.

3.1.7.1. **OSTs Requiring In-Person Weather Support.** If the mission commander deems necessary for a weather technician to accompany the crew to the off-site location, coordination should be accomplished with the 86 OSS/OSW staff in advance, but NLT two weeks prior to departure date. During coordination, all mission and administrative requirements will be determined in order to provide timely and proper weather support for the OST. An example of OST planning weather forecast or climatology can be found in Attachment 4.

3.1.7.2. **OSTs NOT Requiring In-Person Weather Support.** Weather product delivery method and time for sustained contingency or training operations should be

coordinated with the 86 OSS/OSW staff in advance, as plans are being formulated, but NLT two weeks prior to the mission start date. At that time, product suite and delivery mechanism and times will be established and the mission commander of the OST will complete an LOI. The LOI can be found on the RAB Aviator Weather SharePoint Page under Weather Links, OST Template at: **https://ice.usafe.af.mil/sites/86OG/OSS/OSW/Documents/AVIATOR%20WX%20PAGE.aspx?PageView=Shared**. The LOI will be sent via e-mail to 86 OSS/OSW (**86weather@us.af.mil**) for review and implementation. Deviations to the established LOI should be coordinated with the WF as soon as they are known, but NLT one day prior to the mission if possible.

3.1.8. **DD 175-1 Flight Weather Briefing Support.** 86 OSS/OSW will provide DD 175-1 FWB support to all 37 AS and 76 AS training flights operating outside of the MEF operating area (see paragraph 3.1.3.2.). The 21 OWS will provide FWB support to 603rd AMD IFM missions and 424 ABS flying operations. The 21 OWS will also serve as backup briefing support for all 86 AW aircraft in the event 86 OSS/OSW is unable to produce and disseminate 175-1 briefings (paragraph 1.7.1.3).

3.1.8.1. **175-1 Requests.** FWBs can be obtained from the WF in person, by e-mail, or via telephone during normal operating hours. Desired advance notification for a FWB is 24 hours prior to scheduled launch. Aircrews that receive weather briefings electronically are requested to call the weather station to log their flights, validate the official briefing, and check for updates. Aircrews requesting a briefing will provide the following mission data as part of their 175-1 request:

3.1.8.1.1. Number and type of aircraft performing the flight.

3.1.8.1.2. Aircraft call sign or tail number.

3.1.8.1.3. Location and estimated time of departure and return (if applicable).

3.1.8.1.4. Flight levels to be flown.

3.1.8.1.5. Destination and alternate airfields and associated launch and recovery times

3.1.8.1.6. Route of flight to include training areas, low level routes and areas, refueling areas and DZs and LZs.

3.1.8.1.7. Graphical forecast requirements (flight level wind charts, aviation hazards charts, etc.).

3.1.8.1.8. The mission commander or designee will contact the weather technician to determine method and time of briefing delivery and to provide any additional information or special requirements needed to enable the weather technician to tailor the briefing.

3.1.9. **Planning Weather For Flying Missions.** The primary planning weather product is the 21 OWS Five Day. Reference paragraph 4.1.2.2. Additionally, mission commanders can request additional planning weather from 86 OSS/OSW as necessary. The on-duty weather technician will complete planning weather requests IAW 86 OSS/OSW duty priorities (see Attachment 2).

3.2. **Transient Aircraft.** Upon request and IAW duty priorities permit, 86 OSS/OSW will provide or arrange for FWB support to transient North Atlantic Treaty Organization (NATO) and U.S. aircrews during normal airfield operating hours, as stipulated in the FLIP. All briefings will be documented on either a DD Form 175-1 or locally produced FWB form. 86 OSS/OSW personnel will only update weather information for the Ramstein take-off portion of an AMD IFM mission as mandated by AFMAN 15-129 V2, paragraph 2.8.2.

3.3. **National Airborne Operations Center (NAOC).** The E4B serves as the NAOC for the National Command Authorities. In case of a national emergency or destruction of ground command control centers, the aircraft provides a modern, highly survivable, command and control, and communications center to direct U.S. forces, execute emergency war orders and coordinate actions by civil authorities. President of the United States (POTUS) and other Distinguished Visitor (DV) support will take place on request, most often in conjunction with NAOC support.

3.3.1. **Notification.** 86 AW/XP will provide notification of mission dates and times to the 86 OSS/OSW. 86 OSS/OSW will begin 24/7 operations from beginning to end of the missions to provide continuous weather support. NAOC, while on Ramstein, requires specific weather support. Reference 86 AW OPLAN 84-07 *National Airborne Operations Center (NAOC)*.

3.3.2. **Primary Environmental Support.** Primary support for NAOC is the responsibility of 86 OSS/OSW, while 21 OWS will provide back-up support. The 86 OSS/OSW will provide 24 hour environmental support to the NAOC operations team and aircrew, which includes planning weather, staff briefings, and notification of NAOC unique weather requirements.

3.3.2.1. **NAOC Unique WWAs**. The advance agent/NAOC Watch Officer will pass current contact information to the 86 OSS/OSW, to include a direct phone number. The 86 OSS/OSW will notify the NAOC Watch Officer of any NAOC unique issued WWAs. NAOC unique WWAs will be cancelled when conditions are no longer occurring or no longer expected to occur. 86 OSS/OSW will notify the NAOC Watch Officer of NAOC specific WWA cancellation. If a direct phone number to the advance agent/NAOC Watch Officer is not available, the 86 OSS/OSW will make all unique WWA notifications via the 86 AW/CP. NAOC unique WWA issuance and cancellation will be conducted locally and will not be completed within JET. Reference the "Unique WWA" Support tab on the Ramstein (ETAR) Installation Datasheet for NAOC unique WWA criteria.

3.3.3. **86 OSS/OSW and 21 OWS NAOC Coordination.**

3.3.3.1. **NAOC Arrival Notification.** HQ Air Combat Command (ACC)/A3 will notify the 86 AW prior to deploying to Germany. The 86 AW/XP will then notify the 86 OSS/OSW, and 86 OSS/OSW leadership will notify the 21 OWS when NAOC is expected at RAB via SIPRNET at **21.ows@sembach.af.smil.mil.**

3.3.3.2. **NAOC Impacting Weather.** The 86 OSS/OSW will notify 21 OWS of NAOC specific WWA issuance and cancellation and will also relay any mission impacting meteorological concerns.

3.4. **Volcanic Ash Plume and Concentration Forecasts.** The 86 OSS/OSW will provide volcanic ash forecast updates, leveraging products produced by the VAAC office in whose AOR a volcanic eruption has occurred. Per AFMAN 15-129V1 (paragraph 4.3.3.) and AFMAN 15-129V2 (paragraph 2.14.), the regional VAAC will be the primary authoritative source for volcanic ash hazard products related to that event. 86 OSS/OSW will also leverage AFWA volcanic ash products to supplement official VAAC office products.

3.4.1. **London VAAC Office.** The primary VAAC office servicing northern Europe is the London VAAC run by the United Kingdom Meteorological Office.

3.4.2. **Toulouse VAAC Office.** The primary VAAC office servicing southern Europe, Africa, and western Asia is the Toulouse VAAC office run by Meteo France.

3.4.3. **2nd Weather Squadron (2 WS).** AFWA's 2 WS provides a suite of volcanic ash analysis and forecast products. Per AFMAN 15-129V2 paragraph 2.14, 86 OSS/OSW will leverage 2 WS products to supplement official VAAC office products.

3.4.4. All official FWBs will include "Refer to VAAC for official volcanic ash forecast" in the remarks section. In addition, all briefings will include a copy of VAAC forecasts for planning purposes only.

3.5. **Pilot-to-Metro Service (PMSV).** 86 OSS/OSW provides PMSV to aircraft operating within RAB airspace during duty hours. The Ramstein PMSV radio frequency is 284.425 megahertz (MHz) and the 86 OSS/OSW callsign is "Ramstein Metro". Spangdahlem AB provides back-up PMSV support on the same frequency under the callsign "Spangdahlem Metro" during duty hours (M-F 06L-20L) in case of RAB PMSV outages or during AOL evacuation procedures. Aircraft requiring PMSV support during non-duty hours can phone patch 21 OWS or TACC Weather via 1-800-AIRMOBL.

3.6. **Airfield Operations.** 86 OSS/OSW and Airfield Operations (86 OSS/OSA), including ATC, GCA, and Airfield Management, agencies operate closely under a framework of cooperative weather watch, familiarization training, and weather and airfield data dissemination. 86 OSS Operations Letter 13-6, *Ramstein AB Cooperative Weather Watch (CWW) Program* defines each agencies responsibilities and includes specific procedures to report malfunctions, outages, and restoration of weather reporting equipment.

3.7. **424 ABS (Chièvres Air Base, Belgium.)**

3.7.1. 86 OSS/OSW will send via email, acknowledgement that the controller is certified as a limited weather observer for Chièvres AB (upon receipt of the weather training completion memo and weather examination from the Chièvres TSN). This memo will serve as the weather certification until the controller's AF Form 3622 can be documented by the weather certifier during the 86 OSS/OSW annual Chièvres visit or a 424 ABS/Ramstein support run.

3.7.2. Send 86 OSS/OSW personnel to review the weather familiarization program at Chièvres annually.

3.7.3. Develop and validate the Chièvres AB daytime and nighttime visibility charts for determining control tower prevailing visibility IAW AFMAN 15-111.

3.7.4. Maintain a computer based training program covering local weather orientation and local weather effects. This information will be reviewed during the annual Chièvres visit and updated as necessary.

3.7.5. Tailor weather familiarization to local conditions at Chièvres to the maximum extent possible. All training is IAW AFI 13-204V2, AFI 13-204V2_USAFE SUP_I and AFMAN 15-111. As a minimum, the ATC weather familiarization should include:

3.7.5.1. Basic observing techniques.

3.7.5.2. Visibility/obstructions.

3.7.5.3. Ceilings.

3.7.5.4. Wind.

3.7.5.5. Altimeter settings.

3.7.5.6. Precipitation/present weather.

3.7.5.7. TAFs.

3.7.5.8. Advisories, watches, and warnings.

3.7.5.9. Temperature and dew point.

3.7.5.10. Common symbols used on the ASOS (Automated Surface Observation System).

3.7.5.11. Weather observer and air traffic controller coordination.

3.8. **Aircrew Training.**

3.8.1. 86 OSS/OSW will, IAW AFMAN15-129V2, provide IRC briefings ISO of 86 AW OSS Aircrew Training requirements.

3.9. **US Army Priority Air Transport -Executive Flight Detachment (USAPAT-EFD).**

3.9.1. 86 OSS/OSW will, IAW Army Regulation 95-1, Aviation Flight Regulations, provide semi-annual weather training in April and October.

3.10. **Maintenance Support.**

3.10.1. **86 Maintenance Operations Center (MOC).** 21 OWS will maintain JET access for the 86 MOC to include unlocking accounts and resetting passwords. JET accounts provide users on demand access to real-time weather data for the Ramstein Aerodrome. In the event of a communications outage that impacts JET access, 86 OSS/OSW personnel will provide weather data to 86 MOC on an as requested basis via telephone, email, or Microsoft Office Communicator.

3.10.2. **Weather WWA Criteria for Maintenance Operations.** 21 OWS will act as the local focal point for weather WWA issuances that impact maintenance operations. Reference Chapter 2, Weather WWA Support for more information regarding the issuance and dissemination process.

3.11. **Air Mobility Command Operations.** Support to the 721 APS/ATOC and 721 AMXS/MOC will mirror that provided to the 86 MOC covered in paragraphs 3.11.1 – 3.11.2.

4. SUPPORT TO NON-FLYING OPERATIONS.

4.1. 86 Mission Support Group.

4.1.1. 86 Security Forces Squadron.

4.1.1.1. **Working Dog Training.** 86 OSS/OSW will provide weather information, to include observed and forecasted wind speed and direction, ambient temperature, and lightning data via the on-duty forecaster, as requested, to support 86 SFS working dog training.

4.1.1.2. **Road Condition Status.** 86 OSS/OSW will provide observed and forecasted snow accumulation and ice information as requested to aid the 86 SFS in road condition status determination. NOTE: 86 OSS/OSW will NOT make the road condition status determination, they will only provide the necessary weather information required by decision makers. The forecaster on duty will direct all road conditions inquiries to the Ramstein Weather Update webpage: **http://www.ramstein.af.mil/weatherinfo.asp**.

4.1.2. 86 Communications Squadron.

4.1.2.1. **Weather WWA Email Notification.** 21OWS will provide email notification of WWA criteria listed in Chapter 2 via JET to the following 86 CS organizational boxes: 86 CS (**86cs.scps@us.af.mil**), 86 CS Communications Focal Point (**435cs.cfp@us.af.mil**), 86 CS Technical Control Facility (**86cs.scbb.all@us.af.mil**), 86 CS Satellite Communications Facility (**86cs.satcom@us.af.mil**), 86 CS Cable Maintenance (**86cs.scow@us.af.mil**), 86 CS Airfield Systems (ATCALS) (**435cs.scmbaatcals@us.af.mil**) and 86 CS Airfield Systems Radar (**86cs.scmbrradar@us.af.mi**). Note: During JET outages, the 86 CS Communications Focal point will be the only unit contacted by the 21 OWS RAB forecaster via the 86 AW/CP.

4.1.2.2. **Five Day Forecast Slide.** The Five Day Forecast slide is created daily by the 21 OWS and posted to their webpage. During webpage outages, or other access issues, users may contact the 86 OSS/OSW during duty hours (see paragraph 1.7.1.1.) or the 21 OWS at DSN: 489-2134 during 86 OSS/OSW non-duty hours for updates.

4.1.2.3. **Space Weather Environmental Awareness.** When notified of significant space weather activity (i.e. geomagnetic storming, solar flares, charged particle events, etc.) or when requested, 86 OSS/OSW will provide updates via email to 86 CS Satellite Communications (**86cs.satcom@us.af.mil**). Depending on the type of activity, notification may be in a text bulletin or graphical format.

4.1.3. 786 Force Support Squadron.

4.1.3.1. **Fitness Assessment Cell (FAC) Planning Product.** The primary FAC planning product will be the 21 OWS Five Day Forecast Slide. Reference paragraph 4.1.2.2.

4.1.3.1.1. **Real-Time Weather Data.** 86 OSS/OSW will provide the Ramstein FAC with real-time wind speed, ambient temperature, precipitation, and lightning data via the on-duty forecaster as requested prior to fitness test sessions in order to aid in AFI 36-2905, *Fitness Testing*, testing weather threshold assessment and

testing location decisions. NOTE: 86 OSS/OSW personnel will NOT make testing location decisions, they will only provide necessary weather information required by FAC staff.

4.1.4. **86 Force Support Squadron.**

4.1.4.1. **Golf Course and Swimming Pool Lightning Notification.** 86 OSS/OSW will provide notification of observed lightning strikes within 5 NM of the RAB complex via the 86 AW/CP. For more information on weather WWA notification see Chapter 2.

4.2. **86 Civil Engineering Group.**

4.2.1. **786 Civil Engineering Squadron.**

4.2.1.1. **Explosive Ordnance Disposal.** 86 OSS/OSW will provide forecast and observed weather information to include wind speed and direction, ambient temperature, and lightning data via the on-duty forecaster as requested prior to Explosive Ordnance Disposal training, operations, or emergencies.

4.2.1.2. **CDMs/EDMs.** 86 OSS/OSW will provide text based CDMs/EDMs to 786 CES/CEX and 86 CES/CEF when requested. CDMs/EDMs can be requested by contacting 86 OSS/OSW (reference paragraph 1.7.1.3 for primary, on-call contact numbers). CDMs/EDMs are based on model data produced by AFWA. NOTE: 86 OSS/OSW is NOT responsible for producing toxic corridor and nuclear fallout calculations for RAB. This responsibility falls within the 786 CES/CEX. However, 86 OSS/OSW will provide the most accurate and representative observed and/or forecast weather data to 786 CES/CEX plume models to ensure consistency between CBRN hazard area predictions and the installation forecast.

4.2.1.3. **Emergency Operations Center.** When manning allows, 86 OSS/OSW will provide weather personnel to the EOC when required during exercises and real-world contingencies. 86 OSS/OSW personnel embedded into the EOC will inject relevant and timely weather information into the planning and decision-making processes. When manning does NOT allow for an embedded briefer at the EOC, EOC personnel will contact the 86 OSS/OSW weather technician for specific weather requirements (see paragraph 1.7.1.3. for contact information).

4.2.1.4. **Snow Removal.** During duty hours, 86 OSS/OSW will contact the 786 CES snow removal shop (DSN 480-5852) when 1/2 inch of new snow accumulation or greater is forecast for RAB. 86 OSS/OSW will provide the estimated amount of new snow accumulation in order to assist the snow removal process. During non-duty hours, the 21 OWS RAB forecaster will provide new snow accumulation information.

4.3. **86 Medical Group.**

4.3.1. **86 Aeromedical Squadron.**

4.3.1.1. 86 OSS/OSW will provide 86 AMDS/SGPB with real-time weather conditions via JET to support Wet Bulb Globe Temperature calculations used to determine Heat categories. NOTE: Heat Category and Flag Color status is reported by 86 AMDS/SGPB to 86 AW/CP per 86 AMDS/SGPB OI 48-151. All Heat

Category/Flag Color status inquiries to the 86 OSS/OSW will be directed to 86 AMDS/SGPB.

4.4. **86 AW Command Post.**

4.4.1. **Weather WWA Information.** WWAs will be provided to 86 AW/CP via JET automated emails and phone calls. Reference Chapter 2 for more information on WWAs.

4.4.2. **Operational Reports (OPREP-3).** In the event of damage caused by severe weather, 86 OSS/OSW will provide relevant weather information as required by 86 AW/CP to include in OPREP-3 reports.

4.4.3. **Contact Information.** 86 OSS/OSW will immediately notify 86 AW/CP whenever any contact information changes.

4.4.4. **Crisis Action Team.** When manning allows, 86 OSS/OSW will provide weather personnel to the CAT when required during exercises and real-world contingencies. 86 OSS/OSW personnel embedded into the CAT will inject relevant and timely weather expertise and information into the planning and decision-making processes. See paragraph 5.2. for more information.

4.4.5. **Early Release and Delayed Reporting.** During duty hours, 86 OSS/OSW will contact the 86 AW/CP when 1/2 inch of new snow accumulation or greater or freezing precipitation is forecast for RAB. 86 OSS/OSW will provide the estimated amount of new accumulation in order to assist the early release/delayed reporting decision making process. NOTE: 86 OSS/OSW is NOT the responsible organization for making early release/delayed reporting decisions and thus will NOT dictate whether the installation is under early release/delayed reporting status. The forecaster on duty will direct all Early Release/Delayed Reporting inquiries to the Ramstein Weather Update webpage: **http://www.ramstein.af.mil/weatherinfo.asp** and the caller's chain of command.

4.5. **435 Air Mobility Squadron.**

4.5.1. 86 OSS/OSW will provide initial certification and annual recertification to 435 AMS/OPSF weather personnel IAW 86 OSS/OSW SOPs.

4.5.2. 86 OSS/OSW Flt Chief shall:

4.5.2.1. Serve as the focal point for coordinating 435 AMS weather personnel certification training requests and proficiency requirements.

4.5.2.2. Ensure 86 OSS/OSW training manager maintains 435 AMS weather personnel training records IAW AFMAN 36-2201, *Air Force Training Program*, AFI 15-127 and CFETP 1W0XXC5, *Weather*.

4.5.2.3. Report any changes in 435 AMS weather personnel or trainee duty status (decertification, suspension, cancellations, etc.) to 435 AMS/OPSF Flt Chief. NOTE: 4 – 8 weeks maybe required to obtain ASF/MIF weather technician certification.

4.5.2.4. 435 AMS weather personnel are encouraged to work one proficiency shift per month but 435 AMS deployments and training take precedence. Additionally, the 435 AMS weather personnel on proficiency shift will be accompanied by a certified 86 OSS/OSW forecaster due to the mission demands the of 435 AMS.

5. SUPPORT TO STAFF FUNCTIONS.

5.1. Wing Stand-Up Briefing.

5.1.1. Wing Stand-Up weather slides are produced by the 86 OSS/OSW SIF NLT 12L the day of the brief. Coordination with 86 AW/CCE (Executive Officer) is required if briefing dates and times change. The 86 AW/CC, wing staff and commanders are briefed at the requested location to maintain situational awareness of weather impacts at the operational level that may impact mission execution.

5.1.2. An unclassified version of the briefing is also available on the 86 AW/Wing Stand Up web page at **https://ice.usafe.af.mil/sites/86AW/WingStandUp/default.aspx**

5.1.3. The 86 OSS/OSW SIF will be available for further staff meteorological support (i.e. KMC Stakeholders Briefing, OG/MXG (Operations Group/Maintenance Group) Meeting) on an as needed basis.

5.2. Crisis Action Team (CAT).

5.2.1. Weather inputs provided for supporting the CAT vary depending on the nature of the contingency or crisis.

5.2.2. During duty hours, after receiving notification from 86 AW/XP or AtHoc notification for exercise or contingency, slides will be produced by the 86 OSS/OSW SIF NLT 1 hour before brief time and are archived to the 86 OSS/OSW SIPRNET laptop. Slides will be saved on the 86 AW/XP SIPRNET Sharepoint.

5.2.3. During non-duty hours, once recalled, the standby forecaster will contact 86 OSS/OSW leadership for direction. Reference paragraph 1.7.4 for contingency duty hours.

5.3. CLOSEWATCH.

5.3.1. Per RAB OPLAN 11-204, *Hazardous Munitions Cargo Plan* one of the 86 OSS/OSW members listed on the current CLOSEWATCH Entry Authorization List will provide forecast weather conditions for Ramstein and other destinations or diverts associated with the special assignment airlift mission and hazardous cargo as required.

5.3.2. 86 OSS/OSW will attend and brief weather at the CLOSEWATCH pre-coordination and mission briefings. Slides will be disseminated via SIPRNET email or as directed by the 86th MUNS Munitions Accountable Systems Officer (86 MUNS/MASO).

5.4. Additional Wing Plans Support.

5.4.1. The 86 OSS/OSW SIF provides advice concerning weather support problems or requirements and provides input on weather annexes or appendices to operations orders, plans, pre-deployment orders, and deployment orders as required to ensure weather support requirements for 86 AW are accurately documented.

5.5. Exercise and Contingency Planning.

5.5.1. Provided as required. Product delivery times and formats are coordinated with the requester on a case-by-case basis. The primary customers for exercise support include, but are not limited to, 86 AW/IGI.

5.5.2. 86 OSS/OSW SIF/WIT members will provide exercise weather injects as requested by 86 AW/IGI for installation exercise requirements per AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, AFI 10-2501_USAFESUP, *Air Force Emergency Management (EM) Program Planning and Operations*, in order to maximize exercise benefit for the 86 AW.

5.5.3. When manning allows, the 86 OSS/OSW will maintain two trained WIT members.

5.6. Climatology Services.

5.6.1. 86 OSS/OSW SIF provides tailored climatology support on an as-needed basis.

5.6.2. 86 OSS/OSW ASF provides a monthly climatology report to 86 CES, 786 CES, USAFE/A7PO (Civil Engineering Operations Chief), and US Army Corps of Engineers.

5.7. Intelligence Preparation of the Battlefield or Battlespace (IPB). Upon request and IAW duty priorities, 86 OSS/SW will provide weather information to agencies, such as the 86 AW/AT, for IPB purposes. The information provided includes, but is not limited to, solar and lunar illumination data and space weather data that can impact communications.

5.8. **Tropical Cyclone Support.** The National Hurricane Center (NHC) provides the official DoD forecast for tropical systems in the Atlantic Ocean and the Joint Typhoon Warning Center (JTWC) for tropical systems in the Pacific and Indian Oceans. The 86 OSS/OSW will fully utilize and not deviate from the tropical cyclone information provided by the regional OWS (i.e., Tropical Cyclone-Threat Assessment Product (TC-TAP)) derived from specialized tropical forecast organizations. NOTE: Due to geographical location, RAB is not directly threatened by tropical systems; however, deploying 86 AW personnel and assets should maintain vigilance.

5.9. **Budget and Resources.**

5.9.1. 86 OSS/OSW Flt/CC will submit an annual budget and resource requirements IAW 86 OSS/RA (Operational Support Squadron Resource Advisor) procedures.

6. RECIPROCAL SUPPORT AGREEMENTS.

6.1. **86 Operations Group.**

6.1.1. **37 and 76 ASs.**

6.1.1.1. The 37 AS will provide the 86 OSS/OSW embedded weather forecaster with adequate and dedicated work space to include desk, NIPRNET computer, phone line, and printer access.

6.1.1.2. 37 and 76 AS aircrews will request 175-1s NLT four hours prior to take-off. 86 OSS/OSW duty priorities and forecaster task load will determine the precedence of briefing requests submitted after this four hour prior deadline.

6.1.1.3. For OSTs requiring in-person support, 37 and 76 AS OST mission commanders will submit an OST support LOI NLT two weeks prior to the OST start date (see paragraph 3.1.7.1.). For OSTs requiring reachback support, 37 and 76 OST mission commanders will submit an OST support LOI NLT one week prior to the OST start date (see paragraph 3.1.7.2.)

6.1.1.4. The 37 and 76 ASs will:

6.1.1.4.1. Pass PIREPs to either ATC or directly to OSW if any of the following weather phenomena are encountered: Low Level Wind Shear, Moderate or Severe Turbulence or Icing, Tornado, Hail, Volcanic Ash, or Crosswinds that equal or exceed 25 knots; or any condition that, in the judgment of the aircrew member, would present a hazard to flight.

6.1.1.4.2. Provide 86 OSS/OSW with aircraft and mission-limiting weather impacts to support aircraft and mission types.

6.1.1.4.3. Contact the on duty 86 OSS/OSW weather technician to log their flights, validate the official briefing, and check for updates when receiving a weather product (MEF, 175-1, etc.) electronically.

6.1.1.4.4. Coordinate additional requirements as needed.

6.1.1.4.5. Notify 86 OSS/OSW of any changes to the following:

6.1.1.4.5.1. Aircraft and mission limiting weather thresholds.

6.1.1.4.5.2. Their respective local flying areas.

6.1.1.4.5.3. Any changes to the day's local training missions being supported by 86 OSS/OSW personnel.

6.1.1.4.5.4. Any other significant changes to their respective operations that will impact how 86 OSS/OSW provides terrestrial or space weather support.

6.1.1.4.6. Provide aircrew feedback to the 86 OSS/OSW after each mission on the accuracy and timeliness of weather briefing support. The WF feedback survey is posted on the Aviator Weather Page of the WF Sharepoint site under Weather Links, Aircrew Feedback. When possible, the weather technician will verbally debrief returning crews and refine subsequent forecasts based upon this feedback.

6.1.2. **424 ABS (Chièvres Air Base, Belgium).**

6.1.2.1. The 424 ABS/AOAT NCOIC, ATC TSN or designated representative at Chièvres AB will:

6.1.2.1.1. Administer local weather familiarization training (to include tower visibility observation training) and a written weather examination.

6.1.2.1.2. Email the completed weather examination to 86 OSS/OSW **86weather@us.af.mil** along with a memo stating the controller has completed the local weather familiarization training.

6.1.2.1.3. Ensure all assigned tower personnel receive recurring tower visibility certification. Ensure all assigned tower personnel document recurring certifications on AF Form 1098, *Special Task Certification and Recurring Training*.

6.1.2.2. 424 ABS shall fund 86 OSS/OSW temporary duty (TDY) to Chièvres AB supporting the 424 ABS/AOAT.

6.1.3. **86 OSS.**

6.1.3.1. ATC will comply with the Cooperative Weather Watch outlined in paragraph 3.7.

6.1.3.2. Airfield Management will:

6.1.3.2.1. Relay all issued WWAs IAW the RAB dissemination chart (see Ramstein (ETAR) Installation Datasheet).

6.1.3.2.2. Submit all required weather related remarks into applicable Notices to Airmen (NOTAMs) and FLIPs when requested by 86 OSS/OSW or directed by 86 OSS/DO (Director of Operations) or higher.

6.1.3.2.3. Provide newly assigned 86 OSS/OSW personnel an orientation tour of the RAB runway complex.

6.1.3.2.4. Maintain 86 OSS/OSW on the FLIP distribution list and provide two hard copies of new editions of each FLIP and FLIP Supplement.

6.1.3.3. 86 OSS Aircrew Training will:

6.1.3.3.1. Provide a schedule of IRC briefings that require a weather briefer. Current IRC Briefing Schedule is posted at: **https://ice.usafe.af.mil/sites/86OG/OSS/OST/default.aspx**

6.1.3.4. 86 OSS Current Operations (86 OSS/OSO) will:

6.1.3.4.1. Provide future mission planning calendars for 86 AW missions in order to assist in planning weather requirements for 86 AW flying squadron OSTs.

6.2. **86 Mission Support Group.**

6.2.1. **86 Communications Squadron.**

6.2.1.1. **86 CS/SCOO.** 86 CS/SCOO will:

6.2.1.1.1. House and maintain 86 OSS/OSW's JET server in building 500.

6.2.1.1.2. Notify 86 OSS/OSW if the server will be down due to scheduled or unscheduled events and will also notify 86 OSS/OSW if the server is moved to a new location.

6.2.1.1.3. Coordinate with 86 OSS/OSW before interrupting online equipment (JET, SharePoint, etc) for routine or scheduled maintenance to ensure mission commitments are not affected.

6.2.1.2. **86 CS/SCOAA.** 86 CS/SCOAA will:

6.2.1.2.1. Maintain all FMQ-19 related systems (sensor suites, TDAU [Terminal Data Acquisition Unit], OID [Operator Interface Device], etc.)

6.2.1.2.2. Work with 86 OSS/OSW to restore offline equipment as quickly as possible. For dual instrumented systems, the offline equipment on the active runway will receive first priority unless:

6.2.1.2.2.1. Stand-alone weather equipment with no backup capability will have the highest priority.

6.2.1.2.2.2. TACAN (Tactical Air Navigation) and ILS (Instrument Landing

System) systems are down (Per TO 00-33A-1001 weather systems are restored after TACAN and ILS systems)

6.2.1.2.3. Coordinate with 86 OSS/OSW before interrupting online equipment for routine or scheduled maintenance to ensure mission commitments are not affected.

6.2.1.2.4. Provide 86 OSS/OSW with a job control number and technician's initials when equipment is logged out as inoperative.

6.2.1.2.5. Provide newly assigned 86 OSS/OSW personnel an orientation tour of the AN/FMQ-19 sensors on the runway complex.

6.2.2. **86 Security Forces Squadron.** Upon observation, the 86 SFS will report severe weather conditions to the 86 AW/CP to include tornadic activity, hail, and damaging winds.

6.3. **86 Civil Engineering Group.**

6.3.1. **786 Civil Engineering Squadron.** 786 CES/CEOFP will maintain generators for provision of backup power to building 2066 and AN/FMQ-19 sensor group R09 (Localizer 27 Generator, Facility 4460), R08 (AFL West Generator, Facility 2505), R27/09 AFL North Lighting Building 2100, R26 (AFL East Generator, Facility 2288), and R27 (Generator for Rain Retention Basin Ramp 1, Facility 2077) on the airfield complex. The AN/FMQ-19 Mid Field sensor group is not backed up by a generator and thus no generator for this sensor group will be maintained.

6.3.1.1. 786 CES/CEX will provide each 86 OSS/OSW member a familiarization tour of the installation EOC and a familiarization briefing of all CBRN plume models utilized during emergency situations to include how a CDM, observed or gridded model data is ingested into the plume models.

6.3.1.2. 786 Civil Engineering Operations Facility Electrical (786 CES/CEOFE) in conjunction with 86 CES/CEF will notify 86 OSS/OSW SIF and 86 CS/SCOAA NLT 7 days in advance of a scheduled power outage to Building 2303 and expected impacts to operations.

6.4. **86 AW Staff Agencies.**

6.4.1. **86 AW Plans and Programs (86 AW/XP).** 86 AW/XP will:

6.4.1.1. XP and the individual plan's OPR will coordinate with the 86 OSS/OSW on all 86 AW Plans, to include new plans and those in review.

6.4.1.2. Provide 86 OSS/OSW advance notice (when possible) of NAOC or equivalent visits and include 86 OSS/OSW in requirement planning coordination regarding such visits.

6.4.1.3. When availability exists, provide a work space for one 86 OSS/OSW member during CATs (Real World and Exercise) to include one NIPRNET workstation, one SIPRNET workstation, and DSN phone access.

6.4.2. **86 AW Inspections Directorate (86 AW/IGI).** 86 AW/IGI will:

6.4.2.1. Coordinate with 86 OSS/OSW SIF/WITs approximately 2 – 3 months but NLT 1 month in advance of scheduled installation exercise requirements per AFI10-2501 or HHQs (Higher Headquarters) directed equivalent exercises to establish weather requirements or exercise injects.

6.4.2.2. Notify 86 OSS/OSW of all applicable planning meetings, group contacts.

6.4.2.3. Injects or evaluations will include but are not limited to: severe weather notification timeline and procedures, mass accident and CBRN weather, palletizing, set up, and tear down of tactical meteorological equipment (TMQ-53/TMOS). NOTE: Dependent upon what procedure, system, or function is evaluated, weather units outside of the 86 AW should be contacted or coordinated with in advance to the maximum extent possible (21 OWS, 435 AMS/OPSF, London VAAC etc).

6.4.3. **86 AW Command Post (86 AW/CP).** 86 AW/CP will:

6.4.3.1. Relay all issued WWAs IAW the RAB dissemination chart (see Ramstein (ETAR) Installation Datasheet).

6.4.3.2. Ensure 86 OSS/OSW is notified of all CAT recalls through AtHoc notification IAW 86AW Recall Plan 10-218.

6.4.3.3. Allow 86 OSS/OSW personnel access to 86 AW/CP, with a restricted area badge with corresponding CAT area (open) or those listed on an authenticated EAL (Entry Authorization List), during exercises, contingencies, or emergencies or periods of staff weather personnel evacuation of building 2303.

6.4.3.4. Notify 86 OSS/OSW (via on-call cell phone if during non-duty hours) of any reports of severe weather which cause damage to 86 AW assets or which significantly impact 86 AW operations.

6.4.3.5. Prepare and submit OPREP-3 reports for severe weather events or weather-related aircraft incidents utilizing inputs from applicable directives.

6.4.4. **86 AW Safety (86 AW/SE).** 86 AW/SE will coordinate with 86 OSS/OSW on any mishap reports containing weather-related information before the safety report is transmitted.

6.5. **Tenant Organizations.**

6.5.1. **435 AMS/OPSF.**

6.5.1.1. Notify 86 OSS/OSW Flt Chief of 435 AMS weather personnel requiring initial certification, annual recertification and proficiency training.

6.5.1.2. Schedule one 435 AMS weather personnel for a minimum of one shift per month (mission permitting).

6.5.1.3. Ensure 435 AMS weather personnel complete quarterly continuation and follow-on training IAW AFI 15-127, CFETP 1W0XXC5 and 435 AMS directives.

6.5.2. **US Army Priority Air Transport Executive Flight Detachment (USAPAT EFD).**

6.5.2.1. NLT 30 days prior to required semi-annual training, contact 86 OSS/OSW SIF/MIF to schedule a briefer for the training.

PATRICK X. MORDENTE, Brigadier General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

86 AMDS/SGPB OI 48-151

86 AW OPLAN 84-07, *National Airborne Operations Center (NAOC)*, 6 Oct 2011

AFI 10-206, *Operational Reporting*, 6 Sep 2011

AFI 10-206_USAFESUP_I, *Operational Reporting*, 14 Sep 2009

AFI 10-229, *Responding to Severe Weather Events*, 15 Oct 2003

AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*, 10 May 2013

AFI 10-2501_USAFESUP, *Air Force Emergency Management (EM) Program Planning and Operations*, 16 May 2009

AFI 13-204V2, *Airfield Operations Standardization and Evaluations*, 1 Sep 2010

AFI 13-204V2 _USAFESUP_I, *Airfield Operations Standardization and Evaluations*, 11 Apr 2012

AFPD 15-1, *Air Force Weather Operations*, 19 Feb 2010

AFMAN 15-111, *Surface Weather Observations*, 27 Feb 2013

AFMAN 33-363_USAFESUP, *Management of Records*, 1 Mar 2008

AFI 15-114, *Functional Resource and Weather Technical Performance Evaluation*; 7 Dec 2001
AFMAN 15-124, *Meteorological Codes*; 28 Feb 2013

AFI 15-127, *Air Force Weather Qualification Training*, 14 Mar 2012

AFI 15-128, *Air Force Weather Roles and Responsibilities*, 7 Feb 2011

AFMAN 15-129 V1, *Air and Space Weather Operations – Characterization*, 6 Dec 2011

AFMAN 15-129 V2, *Air and Space Weather Operations –Exploitation*, 7 Dec 2011

AFI 36-2201, *Air Force Training Program*, 15 Sep 2010

AFI 36-2905, *Fitness Program*, 1 Jul 2010

CFETP 1W0XXC5, *Weather*, 15 Mar 2012

RABI 13-203, *Airfield Operations*, 6 Nov 2009

RAB OPLAN 11-204, *Hazardous Munitions Cargo Plan*, 1 Apr 2011

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AF Form 1098, *Special Task Certification and Recurring Training*

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

AF Form 3803, *Surface Weather Observations (METAR/SPECI)*

AF Form 3813, *Surface Weather Observations (METAR/SPECI), electronic*

DD Form 175-1, *Flight Weather Briefing*

Abbreviations and Acronyms

AB—Air Base

ABS—Air Base Squadron

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFW—Air Force Weather

AFWA—Air Force Weather Agency

AGL—Above Ground Level

AMD—Air Mobility Division

AMDS/SGPB—Aeromedical Squadron Bioenvironmental Engineering

AMOS/FMQ—Automatic Meteorological Observing System

AMS—Air Mobility Squadron

AMS/OPSF—Air Mobility Squadron Operations Flight

AOAT—Airfield Operations Air Tower

AOC—Air and Space Operations Center

AOL—Alternate Operating Location

AOR—Area of Responsibility

AS—Airlift Squadron

ASF—Airfield Support Function

ATC—Air Traffic Control

AtHoc—Network-Centric Emergency Mass Notification System

AW—Airlift Wing

Benelux—Belgium, Netherlands, and Luxembourg

CAT—Crisis Action Team

CBRN—Chemical, Biological, Radiological, and Nuclear

CC—Commander

CDM—Chemical Downwind Message

CEF—Fire & Emergency Services

CES—Civil Engineering Squadron

CEX—Emergency Management, Readiness Flight

CFETP—Career Field Education and Training Plan

CP—Command Post

CS—Communications Squadron

DD/DoD—Department of Defense

DSN—Defense Switching Network

DZ—Drop Zone

ETAR—ICAO identifier for Ramstein AB

EDM—Effective Downwind Message

EOC—Emergency Operations Center

EUCOM—US European Command

FAC—Fitness Assessment Cell

FLIP—Flight Information Publication

Flt/CC—Flight Commander

FWB—Flight Weather Briefing

GAL—Global Address List

GCA—Ground Control Approach

GDSS—Global Decision Support System

GTE—Greater Than or Equal To

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IFM—Integrated Flight Management

IGI—Inspections Directorate

IRC—Instrument Refresher Course

ISO—In Support of

JET—Joint Environmental Toolkit

KMC—Kaiserslautern Military Community

LOI—Letter of Instruction

LZ—Landing Zone

MEF—Mission Execution Forecast

METAR—Aviation Routine Weather Report

METWATCH—Meteorological Watch

MIF—Mission Integration Function

MISSIONWATCH—Mission-Scale Meteorological Watch

MSL—Mean Sea Level

MOC—Maintenance Operations Center

MWP—Mission Weather Product

NAOC—National Airborne Operations Center

NIPRNET—Non-classified Internet Protocol Router Network

NLT—No Later Than

NM—Nautical Miles

OPR—Office of Primary Responsibility

OPREP—Operational Report

OPLAN—Operations Plan

ORM—Operational Risk Management

OSS—Operations Support Squadron

OSS/OSW—Operations Support Squadron Weather Flight

OST—Off-Station Training

OWS—Operational Weather Squadron

PIREP—Pilot Report

PMSV—Pilot-to-Metro Service

RAB—Ramstein Air Base

SAR—Support Assistance Request

SE—Safety

SFS—Security Forces Squadron

SIF—Staff Integration Function

SIPRNET—SECRET Internet Protocol Router Network

SPECI—Aviation Selected Special Weather Report

SWAP—Severe Weather Action Plan

TACC—Tanker Airlift Control Center

TAF—Terminal Aerodrome Forecast

TMOS/TMQ—Tactical Meteorological Observing System

TSN—Training and Standardization

USAFE—United States Air Forces Europe

VAAC—Volcanic Ash Advisory Center

VFR—Visual Flight Rules

WF—Weather Flight

WIT—Wing Inspection Team

WS—Weather Squadron

WWAs—Watches, Warnings, and Advisories

XOW—Weather Operations Directorate

XP—Plans and Programs

Terms

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

Aviation Routine Weather Report (METAR)—The WMO METAR code format used worldwide to encode weather observations.

Aviation Selected Special Weather Report (SPECI)—An unscheduled report taken when certain criteria have been met.

Basic Weather Watch (BWW)—Weather technicians will recheck weather conditions at intervals not the exceed 20 minutes since the last observation or recheck, to determine the need for a SPECI observation.

Continuous Weather Watch (CWW)—Weather technicians will monitor weather conditions continuously and perform no other significant duties. In addition to taking METARs, weather technicians will take and disseminate observations as conditions occur that meet SPECI observation criteria. Weather flights may perform a CWW during AMOS augmentation if locally determined to be more appropriate due to existing meteorological conditions.

Desired Lead Time (DLT)—The total amount of time required to disseminate a forecast WWA from the supporting OWS 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.

ICAO (International Civil Aviation Organization) Identifier—A specifically authorized 4-letter identifier assigned to a location. The ICAO is not to be confused with the Routing

Identifier used by the Automatic Digital Weather Switch to transmit addressed messages including Automated Response to Queries. Routing IDs may not always match a station ICAO and can have 5 characters.

International Civil Aviation Organization (ICAO)—A United Nations organization specializing in international aviation and navigation.

METWATCH (Meteorological Watch)—A deliberate process for monitoring terrestrial weather or the space environment in an area or region. The purpose of a METWATCH is to identify when and where observed conditions significantly diverge from forecast conditions and determining courses of action to update or amend a forecast product or group of products and designated agencies notified. Strategic and Operational level weather units typically conduct METWATCH activities

Mission Weather Product (MWP)—Any weather product or group of weather products generated by an Exploitation Unit that is integrated into the military decision making process. MWPs may be planning or execution products and are not limited to aviation missions.

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

Operational Weather Squadron (OWS)—A characterization unit comprised of management, technician, and training personnel responsible for providing regional weather support. Their mission is to produce fine-scale tailored weather forecast products and services to supported users within their area of responsibility (AOR).

Pilot Report (PIREP)—A report of in-flight weather provided by an aircrew member.

Severe Weather Action Plan (SWAP)—Actions taken by a weather unit to enhance the unit's response capability during a severe weather event. Actions include, but are not limited to, recalling personnel or reallocating resources from other tasks to provide focused support during a severe weather event.

Support Assistance Request (SAR)—Used to request specialized weather, space environmental, or climatological support from the Air Force Weather Agency (AFWA), 14 WS, MAJCOMs, or Operational Weather Squadrons (OWS).

Terminal Aerodrome Forecast (TAF)—A standard text forecast containing the cloud cover, cloud heights, and visibility for general flight rule conditions (IAW AFI 11-202, Volume 3, General Flight Rules; and AR 95-1, Flight Regulations), as well as wind, altimeter, and other weather parameters needed to sustain the landing and takeoff of aircraft.

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

Weather Warning (WW)—A special notice to notify installation personnel and supported units when an established weather condition of such intensity as to pose a hazard to life or property is occurring or expected to occur. Weather warnings provide concise information outlining environmental threats and are used to make resource protection decisions.

Weather Watch (WATCH)—A special notice to notify installation personnel and supported units of a potential for environmental conditions of such intensity as to pose a hazard to life or property. Weather watches indicate a potential for environmental threats and are used to make force protection and risk management decisions.

Attachment 2

86 OSS/OSW DUTY PRIORITIES

86 OSW DUTY PRIORITIES	
ORDER OF PRIORITY (1 = Highest)	**DUTIES**
1	Perform WF Emergency War Order (EWO) Taskings
2	Execute WF Evacuation
3	Respond To Aircraft/Ground Emergencies
4	Respond to Pilot-to-Metro Service (PMSV) Contacts
5	Provide Weather Information to 86 AW Flying Squadrons
6	SWAP Operations / Providing Observed Weather Products (WWA)
7	Augment Automatic Meteorological Observing System Observations for Mandatory Elements
8	Collaborate with CU (21 OWS)
9	Mission Execution Forecast Production and Dissemination for 86 AW Flying Squadrons
10	Relay & Disseminate Urgent PIREPs (UUA)
11	Relay and Disseminate PIREPs (UA)
12	Perform MISSIONWATCH
13	Provide Briefings for Members outside of 86 AW Flying Squadrons (Staff Briefs, Transient Crews, etc.)
14	Accomplish Weather Functional Training
15	Accomplish Administrative Tasks

Attachment 3

MISSION PRODUCTS EXAMPLE & DECODING GUIDES

Figure A3.1. MISSION EXECUTION FORECAST EXAMPLE & DECODING GUIDE

RAMSTEIN AB - MISSION PLANNING / EXECUTION FORECAST (MEF)
MEF ISSUE TIMES: 0530L (VALID 05-21Z) / 1200L (VALID: 11-03Z) / 2200L (VALID: 21-13Z/PLANNING)

NOT AN EXECUTION FORECAST UNTIL VALIDATED BY RAMSTEIN WEATHER TECHNICIAN
*** MISSIONS OUTSIDE GERMANY REQUIRE A 175-1 WEATHER BRIEFING ***

RAMSTEIN AB - MISSION WEATHER ELEMENT BRIEFER: DSN 480-7780

DATE:	27-Mar-12
VALID TIME:	0500-2100Z
TECHNICIAN:	CALL FOR INITIALS
MEF #	27-02

RAMSTEIN AB (ETAR) TAKE-OFF/LANDING DATA (TOLD)

TIME (Z)	CIG	VIS (M)	WX	ALSTG	PA (FT)	SFC WINDS (KTS)	TEMP (C)	CLOUD LEVELS	TEMPO CONDITIONS / REMARKS
05	NONE	8000	BR	3020	515	VRB02	+05	SKC	
06	NONE	3200	BR	3021	506	VRB02	+05	SCT010	
07	010	800	FG	3021	506	VRB02	+05	FEW002 SCT005 BKN010	
08	002	400	FG	3022	496	VRB02	+05	BKN002 OVC010	
09	010	1600	BR	3022	496	18006	+07	FEW005 BKN010	
10	030	4800	BR	3022	496	18006	+10	SCT020 BKN030	
11	030	9999		3022	496	20009	+13	BKN030	
12	200	9999		3018	534	20009	+16	SCT040 BKN200	
13	100	9999		3012	591	20012	+18	SCT040 BKN100 BKN200	
14	030	9000	-TSRA	3006	648	20012G25	+18	BKN030 BKN100 OVC200	
15	015	1600	+TSRAGS	2999	715	20025G45	+17	SCT008 BKN015 OVC100	
16	010	1600	+TSRAGS	2996	743	20025G45	+16	SCT008 BKN010 OVC100	
17	025	4800	-SHRA	2995	753	23012G25	+14	SCT020 BKN025 BKN080	
18	040	9999		2996	743	25010G18	+13	BKN040 BKN100	
19	NONE	9999		2997	734	28012	+10	SCT040	
20	NONE	9999		3000	705	32010	+07	SKC	
21	NONE	9999		3004	667	33009	+06	SKC	

WEATHER LEGEND (CIG/VIS) / RISK FACTOR BASED ON 86AW ACFT TAKE-OFF/LANDING WX SENSITIVITIES	LOW RISK	MOD RISK	HIGH RISK
	CIG ≥ 015; VIS ≥ 5000	CIG > 002 BUT < 015; VIS > 0800 BUT < 5000	CIG ≤ 002; VIS ≤ 0800 or TSTM ON STN

TAKE-OFF/LANDING DATA: Forecasted weather data for Ramstein AB (ETAR)

TIME (Z): Valid time of forecasted weather

CIG (Ceiling): Lowest forecasted cloud ceiling (BKN/OVC) in feet (AGL?). Values are color-coded according to the riskfactor chart shown below

VIS (Visibility): Lowest forecasted Visibility in Meters. Values are color-coded according to the riskfactor chart shown below

WX: Forecasted weather phenomena. Thunderstorm activity (VCTS, TS, -TSRA, TSRA, +TSRA) are also all color coded

ALSTG: Lowest Altimeter Setting

PA: Pressure Altitude

SFC WINDS: Surface Winds (Knots)

TEMP: Surface Temperature (Celsius)

CLOUD LEVELS: Up to 4 layers of cloud cover

TEMPO CONDITIONS/REMARKS: Temporary weather conditions and/or weather remarks to clarify the forecasted weather data (none shown in this example)

WEATHER LEGEND: Risk Factors (LOW, MOD, HIGH) dependent upon forecasted weather conditions

MISC DATA		SOLAR/LUNAR DATA (ETAR)						SPACE WX IMPACTS	
FZ LEVEL:	050	BEGIN NAUT TL: (Z)	0407	SUNSET: (Z)	1754	MOONRISE: (Z)	0709	HF	UNLIKELY DEGRADATION
VOLCANIC ASH:	NONE	BEGIN CIV TL: (Z)	0445	END CIV TL: (Z)	1826	MOONSET: (Z)	2312	UHF	SEVERE DEGRADATION LIKELY
CURRENT RCR:	DRY	SUNRISE: (Z)	0517	END NAUT TL: (Z)	1904	MOON ILLUM: (%)	17	GPS	UNLIKELY DEGRADATION
*** PLEASE CALL WEATHER STATION FOR LATEST WEATHER WATCHES, WARNINGS AND ADVISORIES ***								SPACE WX REMARKS	UHF: NIGHTTIME HOURS

MISC DATA: Current Freezing Level; Volcanic Ash; Current RCR

SOLAR/LUNAR DATA (ETAR) (Z): Sunrise/Sunset, etc. for ETAR.

SPACE WX IMPACTS: Forecasted HF, UHF and GPS DEGRADATION

GERMANY/BENELUX - FLIGHT HAZARDS
HAIL, SEVERE TURBC & ICING, HEAVY PRECIPITATION, LIGHTNING & WIND SHEAR EXPECTED IN AND NEAR THUNDERSTORMS

HAZARD	TYPE / INTENSITY	LEVEL	VALID TIME: (Z) (START / END)		REMARKS
THUNDERSTORMS	ISOLATED (1-24%)	MAX TOPS: 350	1400	1800	BENELUX - GERMANY
TURBULENCE	MODERATE	SFC-100	1400	1800	BENELUX - GERMANY
ICING	NONE	N/A	N/A	N/A	N/A
PRECIPITATION	HEAVY RAIN SHOWERS	N/A	1400	1800	BENELUX - GERMANY

GERMANY/BENELUX – FLIGHT HAZARDS: Forecasted Flight Hazards (Type/Intensity/Level/Times) of Thunderstorm, Turbulence, Icing & Precipitation

TODAY'S WEATHER OUTLOOK

A.M. FOG; BECOMING MOSTLY CLOUDY WITH ISOLATED RAINSHOWERS & THUNDERSTORMS WITHDSMALL HAIL ALONG WITH GUSTY SOUTHWESTERLY WINDS AT 25-45KTS THIS AFTERNOON. HIGH IN THE MID 60'S; TOMORROW'S LOW IN THE UPPER 30'S.

TODAY'S WEATHER OUTLOOK: Plain language weather forecast highlighting forecasted weather conditions

37th AIRLIFT SQ - BLUE TAIL FLIES
ENROUTE WEATHER DATA

HKY 81,82,83 IFR: HI-LO Bunk/Vorg Drop Zone 1600 2000	FLT ROUTE ETAR - BUNKER	FLT ROUTE BUNKER DZ	FLT ROUTE BUNKER - ETAR	FLT ROUTE	REMARKS / LEVELS	
CLOUD LEVELS (ENROUTE)	008 SCT 009 010 BKN 030 100 OVC/LYRD 350	SEE DZ SLIDE	010 SCT 012 020 BKN 040 120 BKN 350		CLOUD REMARKS	
FL WNDS FL: 100	SEE CHARTS		SEE CHARTS		FL WNDS REMARKS	
TSTMS	ISOLATED (MT350)		VCNTY WILDNP		TSTM REMARKS	ISOLATED (MT350)
TURBULENCE	MDT		MDT		TURBC REMARKS	MDT TURBC SFC-100
ICING	NONE (OS OF TSTMS)		NONE (OS OF TSTMS)		ICG REMARKS	
LLWS	NONE (OS OF TSTMS)		NONE (OS OF TSTMS)		LLWS REMARKS	

76th AIRLIFT SQ - SAFETY - SPIRIT - SERVICE
ENROUTE WEATHER DATA

VALOR 55 Local Local 1600 2000	FLT ROUTE ETAR / LOCAL AREA	FLT ROUTE	FLT ROUTE	FLT ROUTE	REMARKS / LEVELS	
CLOUD LEVELS (ENROUTE)	008 SCT 009 010 BKN 030 100 OVC/LYRD 350				CLOUD REMARKS	
FL WNDS FL: 150	SEE CHARTS				FL WNDS REMARKS	
TSTMS	ISOLATED (MT350)				TSTM REMARKS	ISOLATED (MT350)
TURBULENCE	MDT				TURBC REMARKS	MDT TURBC SFC-100
ICING	NONE (OS OF TSTMS)				ICG REMARKS	
LLWS	NONE (OS OF TSTMS)				LLWS REMARKS	

37th & 76th AIRLIFT SQUADRON – ENROUTE WEATHER DATA: Call Sign, Mission Profile, Expected Flight Route, Dep/Return Times (Z)

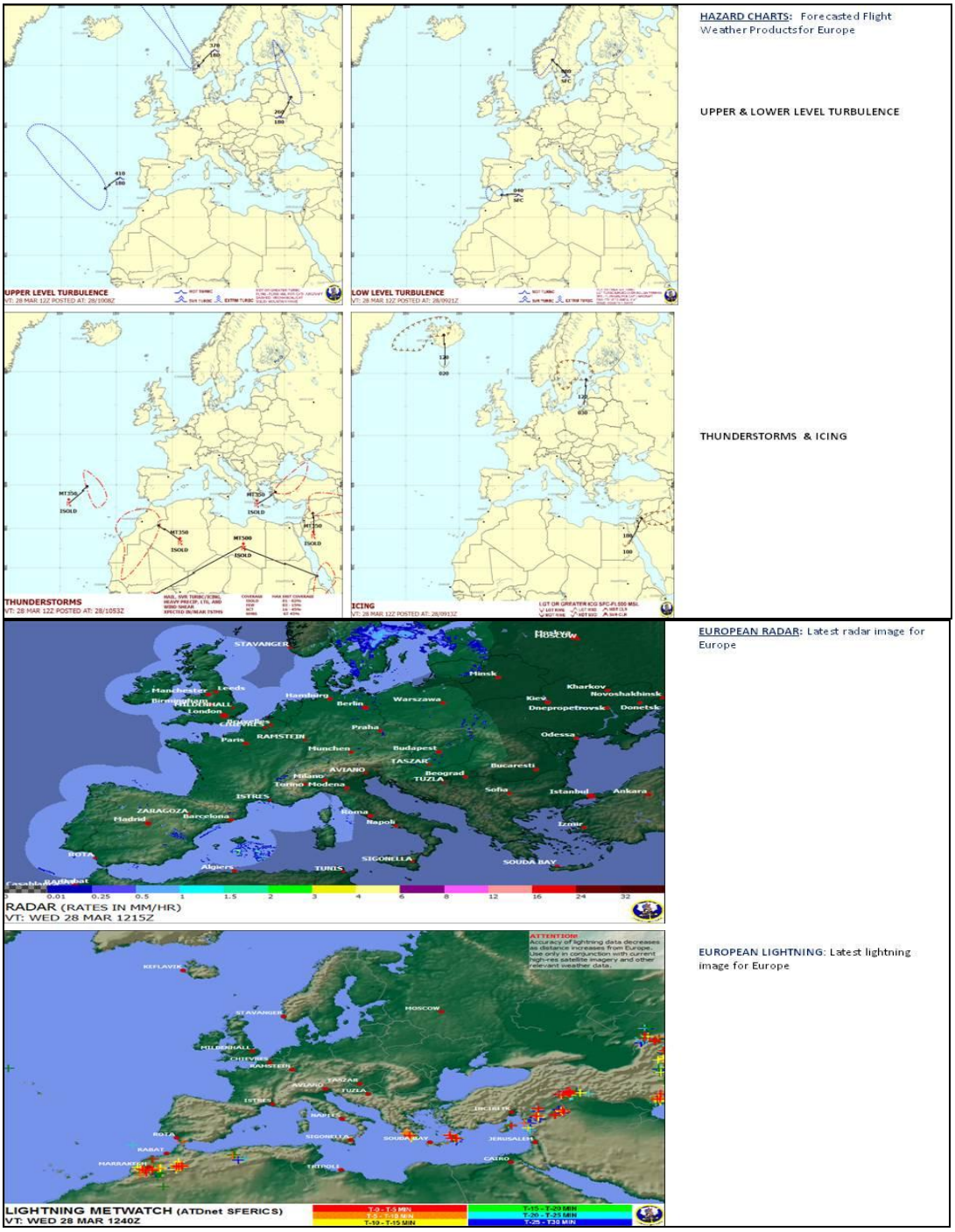
FLT ROUTE: (37TH) ETAR to BUNKER; BUNKER DZ; BUNKER to ETAR (76TH) ETAR/Local Area

CLOUD LEVELS (ENROUTE): Up to 3 layers (BOTTOMS/TOPS) of cloud cover

FL WINDS/FLT LEVEL: Forecasted FL WINDS

TSTMS/TURBULENCE/ICING/LLWS: Enroute FL Hazards that are forecasted to be within 25NM or +/- 5,000FT of flight level MOD/VCNTY = YELLOW, SEVERE/ON STATION = RED)

Figure A3.2. MISSION EXECUTION FORECAST EXAMPLE & DECODING GUIDE(CONT).



HAZARD CHARTS: Forecasted Flight Weather Products for Europe

UPPER & LOWER LEVEL TURBULENCE

THUNDERSTORMS & ICING

EUROPEAN RADAR: Latest radar image for Europe

EUROPEAN LIGHTNING: Latest lightning image for Europe

Figure A3.3. MISSION EXECUTION FORECAST EXAMPLE & DECODING GUIDE (CONT).

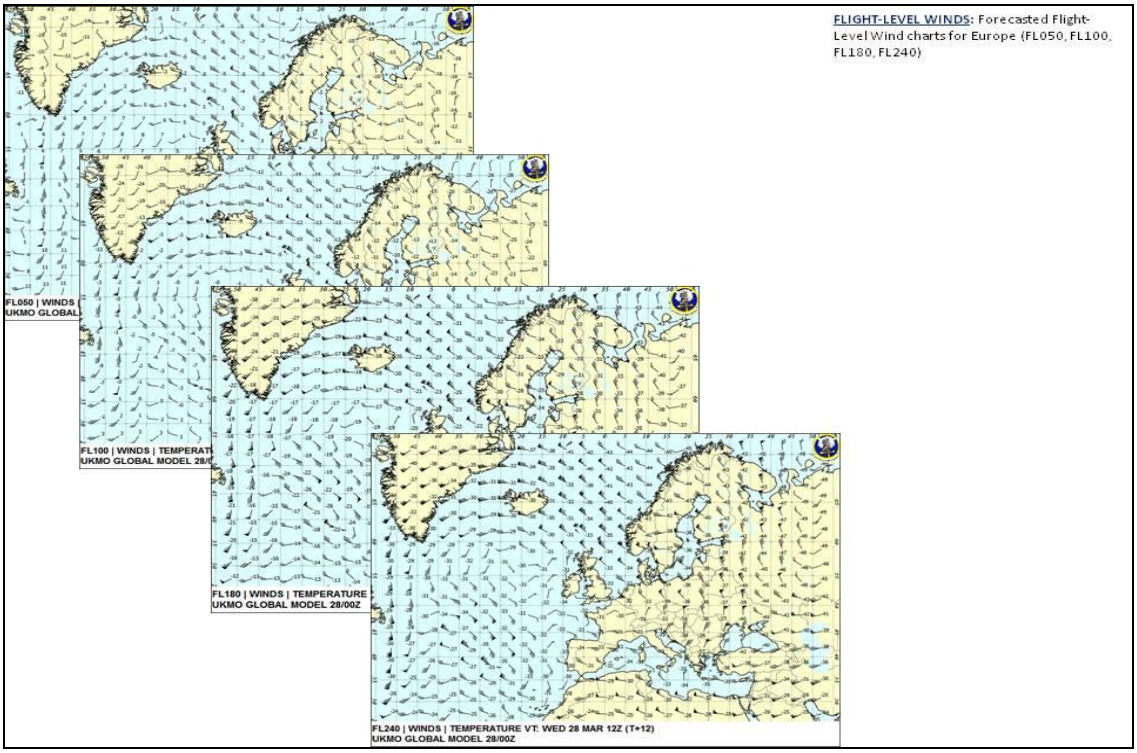
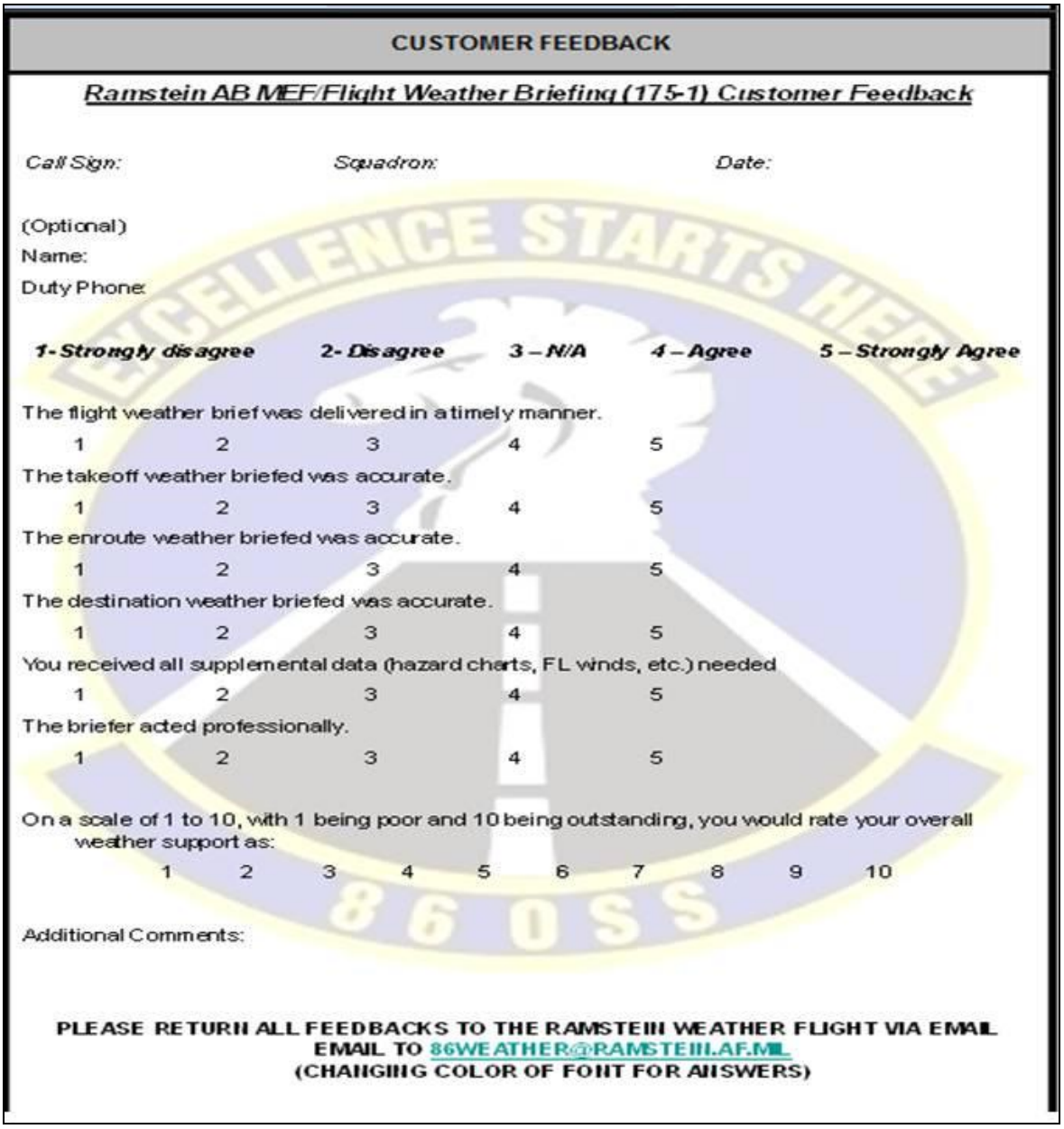


Figure A3.4. MISSION EXECUTION FORECAST EXAMPLE & DECODING GUIDE (CONT).



CUSTOMER FEEDBACK

Ramstein AB MEF/Flight Weather Briefing (175-1) Customer Feedback

Call Sign: *Squadron:* *Date:*

(Optional)
Name:
Duty Phone:

1- Strongly disagree ***2- Disagree*** ***3 – N/A*** ***4 – Agree*** ***5 – Strongly Agree***

The flight weather brief was delivered in a timely manner.
1 2 3 4 5

The takeoff weather briefed was accurate.
1 2 3 4 5

The enroute weather briefed was accurate.
1 2 3 4 5

The destination weather briefed was accurate.
1 2 3 4 5

You received all supplemental data (hazard charts, FL winds, etc.) needed
1 2 3 4 5

The briefer acted professionally.
1 2 3 4 5

On a scale of 1 to 10, with 1 being poor and 10 being outstanding, you would rate your overall weather support as:
1 2 3 4 5 6 7 8 9 10

Additional Comments:

PLEASE RETURN ALL FEEDBACKS TO THE RAMSTEIN WEATHER FLIGHT VIA EMAIL
EMAIL TO 86WEATHER@RAMSTEIN.AF.MIL
(CHANGING COLOR OF FONT FOR ANSWERS)

MEF Weblink: https://ice.usafe.af.mil/sites/86OG/OSS/OSW/Documents/MEF.pdf
Aircrew Feedback Weblink:
https://ice.usafe.af.mil/sites/86OG/OSS/OSW/Documents/Aircrew%20Feedback.ppt

Figure A3.5. DD FORM 175-1 FLIGHT WEATHER BRIEFING EXAMPLE & DECODING GUIDE

FLIGHT WEATHER BRIEFING

PART I - TAKEOFF DATA

1. DATE (DDMMMYYYY)	2. ACFT TYPE / NO.	3. DEP PT / ETD	4. RUNWAY TEMP	5. DEWPOINT	6. TEMP DEV	7. PRESSURE ALT	8. DENSITY ALT
26-Mar-2012	C21A / SPAR 91	ETAR 0900 Z	+07 °C	+03 °C	N/A °C	+269 FT	N/A FT

9. SFC WIND	10. CLIMB WINDS	11. LOCAL WEATHER WATCH / WARNING / ADVISORIES	12. RCR/RCR
04003 M	N/A	NONE	DRY

13. REMARKS / TAKEOFF ALTN FCST	CROSSWINDS	MINIMUM ALSTG
ETAR: 9999 SKC	X-WIND RWY 09/27: 2 KTS	30.48

PART II - ENROUTE & MISSION DATA

14. FLT LEVEL / WINDS / TEMP	15. SPACE WEATHER				16. SOLAR / LUNAR		LOCATION	
FL: 240-280 X SEE ATTACHED	JAAWIN	NO IMPACT	MARGINAL	SEVERE	BMNT	0409 Z	ETAR	
SEE ATTACHED	FREQ	X			SR	0519 Z	MR	0635 Z
	GPS	X			SS	1752 Z	MS	2214 Z
	RAD	X			EENT	1903 Z	ILLUM	10 %

17. CLOUDS AT FLT LEVEL	18. OBSCURATIONS AT FLT LEVEL RESTRICTING VISIBILITY							
YES X NO IN AND OUT	TYPE / LOCATION	N/A	VOLCANIC ASH	YES	X NO	MIN VIS (M)	N/A	
						LEVEL/MVMT	N/A	

19. MINIMUM CEILING - LOCATION	20. MAXIMUM CLOUDS TOPS - LOCATION	21. MINIMUM FREEZING LEVEL - LOCATION
080 - ADRIATIC & IONIAN SEA FT AGL	350 - ADRIATIC & IONIAN SEA FT MSL	050 / ETAR FT MSL

22. THUNDERSTORMS		23. TURBULENCE			24. ICING				25. PRECIPITATION				
CHART 21 OWS		CHART 21 OWS			CHART 21 OWS				CHART 21 OWS				
NONE X AREA LINE		X NONE	IN CLEAR	IN CLOUD	X NONE	RIME	MIXED	CLEAR	X NONE	DRIZZLE	RAIN	SNOW	PELLET
X ISOLATED 1 - 2%	MT350	LIGHT			TRACE				LIGHT				
FEW 3 - 15%		MODERATE			LIGHT				MODERATE				
SCATTERED 16 - 45%		SEVERE			MODERATE				HEAVY				
NUMEROUS - MORE THAN 45%		EXTREME			SEVERE				SHOWERS				
HAIL, SEVERE TURBULENCE & ICING, HEAVY PRECIPITATION, LIGHTNING & WIND SHEAR EXPECTED IN AND NEAR THUNDERSTORMS.		LEVELS			LEVELS ----				FREEZING				
LOCATION MED AREA/SEE CHART		LOCATION			LOCATION ----				LOCATION ----				

PART III - AERODROME FORECASTS

26. AERODROME	27. VALID TIME	28. SFC WIND	29. VSBY/WEA	30. CLOUD LAYERS	31. ALTIMETER	RWY TEMP	PRES ALT
DEST LGSA	ARMY 175-1? YES X NO 26/1200 26/1100 Z TO 26/1300 Z	T 29005	9999 NSW	FEW020	INS 30.01	°C +21	FT +408
ALTN LGIR	26/1230 26/1130 Z TO 26/1330 Z	T 34015	9999 NSW	FEW020 SCT080 UNKN UNKN KTS	INS 30.00	°C +22	FT +41
ALTN	Z TO Z				INS	°C	FT
DEST ETAR	26/1730 26/1630 Z TO 26/1830 Z	M 04003	9999 NSW	SKC 2	INS 30.50	°C +16	FT +251
ALTN ETAD	26/1800 26/1700 Z TO 26/1900 Z	T 04009	9999 NSW	FEW040 X-WIND RWY 05/23: 2 KTS	INS 30.51	°C +15	FT +657
ALTN EDDS	26/1800 26/1700 Z TO 26/1900 Z	T 03007	9999 NSW	FEW040 X-WIND RWY 07/25: 4 KTS	INS 30.49	°C +15	FT +754
DEST	Z TO Z				INS	°C	FT
ALTN	Z TO Z				INS	°C	FT

PART IV - COMMENTS / REMARKS

32. BRIEFED RSC/RCR	YES	X NOT AVAILABLE	33. PMSV	34. ATTACHMENTS	X YES	NO
			284.425			

35. REMARKS (TSTMS IMPLY LLWS) / PLEASE CALL RAMSTEIN WX FOR UPDATE: DSN 480-2488

36. WX BRIEFED TIME	USN / USMC?	37. FLIMSY BRIEFING NO.	38. FORECASTER'S INITIALS	39. NAME OF PERSON RECEIVING BRIEFING
0645 Z		N/A	MB	

40. VOID TIME	41. EXTENDED TO / INITIALS	42. WX REBRIEF TIME / INITIALS	43. WX DEBRIEF TIME / INITIALS
Z	Z	Z	Z

DD FORM 175-1, OCT 2002 (Microsoft Excel) PREVIOUS EDITION MAY BE USED.

A3.1. Completing DD FORM 175

A3.1.1. **BLOCK 1 – DATE**. Enter the Coordinated Universal Time (UTC) departure date in the format DD MMM YY.

A3.1.2. **BLOCK 2 – ACFT TYPE/NO**. Enter aircraft type (C130, C21, C20, etc) and radio call sign (HKY52, JMP56, VLR20, etc) or the last three digits of the tail number.

A3.1.3. **BLOCK 3 - DEP PT/ETD**. Enter the departure location identifier (ETAR) and estimated time of departure. Enter departure grid point or latitude/longitude for locations that do not have location identifiers.

A3.1.4. **BLOCK 4 & BLOCK 5 - RWY TEMP & DEWPOINT**. Enter the runway temperature (prefixed with a "+" or "-" as applicable) and designate degrees Celsius.

A3.1.5. **BLOCK 6 - TEMP DEV**. Only enter Temperature Deviation if requested IAW AFMAN 15-129 A8.2.6. If not requested place a dash in the block.

A3.1.6. **BLOCK 7 - PRES ALT**. Enter the pressure altitude in feet (prefixed with a "+" or "-" as applicable).

A3.1.7. **BLOCK 8 – DENSITY ALT**. Only enter Density Altitude if requested IAW AFMAN 15-129 A8.2.8. If not requested place a dash in the block.

A3.1.8. **BLOCK 9 - SFC WIND**. Enter the surface wind direction in Magnetic for missions departing ETAR, and in True direction for missions departing another airfield. Designate "M" for magnetic" or "T" for true. Enter surface wind direction to the nearest 10 degrees in three digits and surface wind speed (including gust) in two or three digits. Ensure wind entries use a minimum of 5 digits (3 digits for direction and 2 digits for speed). Enter "VRB" for a forecast variable wind direction and "CALM" when the winds are forecast calm.

A3.1.9. **BLOCK 10 - CLIMB WINDS**. Only enter Climb Winds if requested IAW AFMAN 15-129 A8.2.10. If not requested place a dash in the block.

A3.1.10. **BLOCK 11 - LOCAL WEATHER WWA**. Enter any known forecast/observed weather watch, warning, or advisory valid for ETD +/-1 hour. If none, enter NONE. For aircraft departing from other than ETAR, leverage the 21 OWS WWA page to fill out block 11. When WWA information for a location are not available (e.g., remote briefing), enter "Check with local flight agencies." Inform the aircrew that the status of local weather watches, warnings, and/or advisories is undeterminable, and recommend they check with the local ATC or airfield operations for any weather watches, warnings, or advisories that may be in effect.

A3.1.11. **BLOCK 12 - Runway Surface Condition (RSC)/Runway Condition Reading (RCR)**. Enter the latest reported Runway Surface Condition/Runway Condition Reading (RSC/RCR) for the departure airfield, if available (e.g., WR//, RCRNR, IRPSR10, P DRY). When RSC/RCR is not available, enter "N/A."

A3.1.12. **BLOCK 13 - REMARKS/TAKEOFF ALTN FCST**. Enter forecasted sky condition, visibility, and altimeter setting for departure time. Also enter remarks on weather that will affect takeoff and climb (e.g., inversions, icing, turbulence, low level wind shear). Ensure the contents of the briefing and the local TAF are consistent. If requested, enter a forecast for the specific takeoff alternate and time.

A3.1.13. **BLOCK 14 - FLT LEVEL/WINDS/TEMP**. Enter planned flight level in hundreds of feet in three digits (e.g., "060" for 6,000 feet). Enter true wind direction at flight level in tens of degrees and speed to the nearest 5 knots. Enter forecast flight level temperature in degrees Celsius (prefixed with a "+" or "-" as applicable). If there are

significant wind speed and direction changes, break the forecast into legs (e.g., ETAR-ETAD 27020/-05, ETAD-EGUN 32035/-05). Otherwise, brief a representative wind and temperature for the entire route (e.g., 32025/-10). Check "See Attached" if providing wind charts.

A3.1.14. **BLOCK 15 - SPACE WEATHER**. Check the appropriate block indicating the Frequency (FREQ), Global Positioning System (GPS), and Radiation (RAD) as applicable to the specific mission. Indicate the boundaries of the degradation in the space provided in block 15, (e.g., UHF 20N180W to Paya Lebar). When using the High Altitude Radiation Dosage Chart, 10.0 to less than 100.0 milirems per hour constitute marginal and 100.0 milirems per hour and greater constitute severe. A second option is to simply check the appropriate blocks and attach the applicable Space Weather charts to the 175-1. Indicate there are attachments by writing “SEE ATTACHED” in block 15 and check “Yes” in block 34.

A3.1.15. **BLOCK 16 - SOLAR/LUNAR**. Enter the location specified by the aircrew. If none specified, enter data for ETAR. Input Beginning Morning Nautical Twilight (BMNT), Sunrise, Sunset, Ending Evening Nautical Twilight (EENT), Moonrise (MR), Moonset (MS), and Percent Moon Illumination (ILLUM).

A3.1.16. **BLOCK 17 - CLOUDS AT FLT LEVEL**. Check appropriate block. "Yes" implies flight in cloud at least 45 percent of the time; "No" implies the flight will be in cloud less than 1 percent of the time; and "In and Out" implies the flight will be in cloud between 1 percent and 45 percent of the time.

A3.1.17. **BLOCK 18 - OBSCURATIONS AT FLT LEVEL RESTRICTING VISIBILITY**. Check the appropriate block. If "Yes," enter the type of forecast obscurations that could potentially restrict the in-flight visibility along the planned route or mission flight level (e.g., fog, haze, smoke, etc.). Specify the intensity and location if applicable.

A3.1.18. **BLOCK 19 - MINIMUM CEILING**. Enter the lowest ceiling enroute and for the specific mission (if applicable) in hundreds of feet AGL**,** and the geographical location (e.g., "060 ft ETAR-EDDS"). If the minimum ceiling is over hilly or mountainous terrain, or in thunderstorms, so indicate; e.g., "010 feet MTS," or "020 feet SW GERMANY TSTMS." If no ceiling, enter NONE.

A3.1.19. **BLOCK 20 - MAXIMUM CLOUD TOPS**. Enter maximum tops of cloud layers (exclusive of thunderstorm tops) with more than 4/8 coverage in hundreds of feet **MSL** and the geographical location. If no ceilings, enter N/A.

A3.1.20. **BLOCK 21 - MINIMUM FREEZING LEVEL**. Enter the height and geographical location of the lowest freezing level enroute and for the specific mission (if applicable) in hundreds of feet MSL. If the lowest freezing level is at the surface, enter "SFC" and geographical location.

Attachment 4

FLYING SQUADRON OST FORECAST/CLIMATOLOGY

37 AS OST FORECAST

ROTA EODMU8 JA/ATT
02 APRIL - 05 APRIL

	02 April	03 April	04 April	05 April
	Monday	Tuesday	Wednesday	Thursday
ROTA AREA 4 DAY FORECAST JA/ATT CRITERIA				
	72°F 49°F 10KT AM: PM:	72°F 49°F 10KT AM: PM:	73°F 48°F 10KT AM: PM:	73°F 47°F 10KT AM: PM:

"Virtus Perdurat – Enduring Courage!"

76 AS OST CLIMATOLOGY

ROTA, SPAIN
02 APRIL - 05 APRIL

ROTA APRIL CLIMATOLOGY	
AVG MAX TEMP:	67°F
AVG MIN TEMP:	53°F
PRECIP ACCUMULATION:	1.6"
AVG WIND DIRECTION:	W
AVG WIND SPEED:	11 KT
PEAK WIND SPEED:	38 KT
PERCENT CIG/VIS<1500/3:	5%
AVG NUMBER TS DAYS:	2

"Virtus Perdurat – Enduring Courage!"

Attachment 5

FIVE DAY FORECAST SLIDE EXAMPLE

21st OWS Five Day Forecast: RAMSTEIN

	Mon Aug 26	Tue Aug 27	Wed Aug 28	Thu Aug 29	Fri Aug 30
A.M.	RAIN	CLOUDY	RAIN	SUNNY	PARTLY CLOUDY
Wind(KTS)	NE 9KT	NW 6KT	N 3KT	N 4KT	N 4KT
P.M.	RAIN	MOSTLY CLOUDY	PARTLY CLOUDY	PARTLY CLOUDY	PARTLY CLOUDY
Wind(KTS)	NE 25KT	NE 5KT	NE 7KT	E 6KT	E 4KT
High	18C / 64F	18C / 64F	20C / 68F	21C / 69F	22C / 71F
Low	12C / 53F	12C / 53F	14C / 57F	13C / 55F	13C / 55F
SR/SS(UTC)	0437/1825	0438/1823	0440/1821	0441/1819	0442/1817
MR/MS(UTC)	2047/1059	2123/1202	2204/1259	2251/1351	2343/1436
Lunar Illum	72.9%	63.6%	54.0%	44.4%	35.1%