



MISSION WEATHER INTEGRATION

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Units conducting mission weather integration operations perform the weather *integration* function, primarily using the *analysis, prediction, tailoring, integration, and mitigation* processes. Mission weather integration is most effective when the supporting weather teams are located with their supported units, allowing weather personnel to develop relationships and learn how the natural environment affects operations. Department of the Air Force (DAF) weather forces providing mission weather integration should deploy with their home station units to deliver the same support in an expeditionary environment that they provide in garrison. DAF weather forces provide mission weather integration to the combat air forces (CAF), mobility air forces (MAF), and the US Space Force.

CAF AND MAF INTEGRATION

Air Force weather forces integrate tailored environmental data and information into the mission profiles of supported CAF and MAF units. This support includes mission-tailored weather products necessary for planning and executing specific operations, and inherently requires full integration into the supported unit, including clearances to access classified mission requirements. In-garrison support is provided to nuclear bombers and intercontinental ballistic missiles (ICBM) employed from home station. ICBM support includes the entire missile field and encompasses weather support to numerous unique operations: convoy operations, armed over watch, quick reaction force, and maintenance activities.

CAF. Though weather integration personnel are usually assigned to the operations support squadron at home station, they work day-to-day within the supported flying squadrons. In the expeditionary environment, weather forces providing in-person support to deployed CAF squadrons fall under the attached expeditionary fighter or bomber squadrons.

MAF. MAF aircraft are supported in-person or via [reachback](#) by assigned or deployed Airmen, or by the 618th [Air Operations Center](#) (AOC) (Tanker Airlift Control Center) for missions where [US Transportation Command](#) retains [operational control](#) of the aircraft. MAF weather integration personnel are usually assigned to the operations support squadron at home station, though they reside within the supported flying squadrons.

Weather forces deployed to support expeditionary MAF squadrons usually force pool with other deployed MAF weather Airmen at either the AOC or the central location where [command and control](#) (C2) of MAF operations takes place, allowing them to integrate weather impacts either in-person or via reachback. For a detailed explanation of how the MAF operates in an expeditionary environment, see AFDP 3-36, [Air Mobility Operations](#).

AOCs

DAF weather personnel integrate environmental support into AOCs via assigned weather specialty teams (WST). These WSTs are typically aligned under the combat operations division but integrate environmental effects information across all AOC divisions and operations. While airfield weather services are responsible for the five nautical mile ring around the airdrome, the WST is responsible for shared operations area outside the airfields, such as target weather forecasts, aerial refueling tracks, drop zones, and military operating areas. The WST is focused on integration across the AOC divisions, and normally reaches back for a significant portion of weather data products needed to support AOC operations; including staff weather briefings, flight weather briefings, target and enroute weather forecasts, and [mission-scale meteorological watch](#) (MISSIONWATCH) support.

The size of the WST in some AOCs is not large enough to provide in-person support across the AOC divisions during contingency operations. When additional manpower is required for expanded operations, the AOC submits a request for forces to receive augmentation from an operational weather squadron (OWS). In both peacetime and wartime postures, the WST and its associated personnel should remain in close coordination with other weather teams supporting aircraft tasked by the AOC. They are responsible for producing all forecasts for air refueling tracks, military operating areas, drop zones, and targets which allows other mission integration weather teams to leverage central products, avoid duplication of effort, and ensure all forecasts are consistent.

UNMANNED AIRCRAFT SYSTEM (UAS) GROUPS AND WEATHER SUPPORT

UASs are classified into five groups, based on their physical and performance characteristics of weight, operating altitude, and airspeed, with lower numbered groups being smaller and lighter or lower and slower flying, to the largest UASs with enduring, higher-altitude flights (groups four and five). Weather support to groups one and two UASs typically consists of information and products already available from supporting weather organizations and does not require specialized planning or mission weather support products or forecasts. Groups three through five receive direct weather support from the home station weather organization and require mission-tailored planning and mission execution weather products.

Launch and Recovery Element (LRE) Weather Support¹

UASs are launched and recovered in-theater from established LREs. Weather forces at an LRE perform the weather *analysis and forecasting* function, primarily using *collection, analysis, prediction, and dissemination* processes. Weather forces conducting LRE weather operations produce terminal airdrome forecasts, observed and forecast weather watches, warnings and advisories, and the local airfield observation that may be used by other weather organizations supporting UAS operations. LRE weather support is provided from launch to hand-off to the mission control element (MCE), if there is one, and from the MCE hand-off back to the LRE for aircraft recovery.

MCE Weather Support

MCE weather operations include mission planning and execution weather along with MISSIONWATCH. Depending upon the UAS type, this is typically accomplished from a static location within the continental US. MCE weather operations has lead coordination responsibility with other organizations providing weather support, such as home station or deployed weather personnel supporting the LRE, if one exists, or the supporting OWS.

When an organization is established to provide operational-level C2 of UAS missions, the weather organization directly supporting that organization should be designated as lead weather unit (LWU). The LWU is responsible for producing the controlling mission weather product and providing operational-level weather recommendations to C2 decision makers.

LRE and MCE Coordination and Handoff

For UAS groups four and five (sometimes group three), there will typically be an LRE and an MCE. There are pre-determined distance and rule sets for providing a hand-off from the LRE to the MCE, and again from the MCE back to the LRE based upon UAS type. Since the weather unit supporting the MCE (if one exists) is typically the LWU, its responsibility is to coordinate weather support for the mission and the handoff transitions to ensure one mission, one forecast.

CONVENTIONAL ARMY OPERATIONS

Detailed, accurate, environmental information and the effects of the environment on friendly and adversary weapon systems, tactics, and logistics are required to conduct, direct, and plan for future operations. DAF weather personnel assigned to weather squadrons (WS) supporting Army operations should be fully integrated with the Army unit they support so that they understand the unique weather requirements for the assigned mission. DAF weather operations support Army commanders by effectively

¹ Weather operations at an LRE are provided by Airmen in the airfield weather services mission area but are discussed here for continuity.

integrating weather information and knowledge within mission command, operations process, warfighting functions, and operational framework to enable successful prosecution of the Army's operational doctrine. DAF weather personnel provide Army commanders and their staffs an estimate of the confidence level for all weather analytical assessments and weather knowledge integrated into the Army's operational structure.

DAF weather personnel supporting the Army integrate weather effects knowledge across warfighting functions, enabling commanders to optimize and synchronize forces at a decisive time and place on the battlefield to achieve the desired effects and win decisively. The capability of commanders and their staffs to anticipate, integrate, and mitigate weather effects to the employment of friendly and adversary combat power is important to achieving asymmetric advantage and defeat of the adversary. Weather effects information and knowledge are critical to commanders' situational understanding and decision making and enhance lethality when integrated into the Army's planning process, including intelligence preparation of the battlefield, fires, targeting, protection, risk management, and information collection. While WSs supporting the Army are focused primarily on the weather *integration* function, they perform the weather *analysis and forecasting* function when required.

Conventional Army weather support is integrated through support WSs, positioned under an air support operations group or weather group, which may belong to an air-ground operations wing under a numbered Air Force or with an air component commander. These WSs are comprised of personnel trained in basic soldier skills who deploy with and provide direct support to Army echelons and units.² Habitually aligned weather personnel should seamlessly integrate weather effects information within the Army service component command, corps, division, aviation brigade or battalion, brigade combat team, security force assistance brigade, and other supported unit battle rhythms. In addition, weather personnel coordinate, establish, and maintain weather-reporting networks within their respective operational areas to increase battlespace awareness and for use during operational planning and execution for the joint force. Weather personnel are trained and equipped to operate for extended periods in austere conditions that are removed from traditional airbase logistics support. Additionally, select DAF weather personnel receive special training and equipment to support forcible entry operations (e.g., airborne and air assault) as part of a brigade, division, or corps assault command post.

Because of its diverse mission, a conventional Army support WS is organized to maximize training efficiencies in functional skills, combat survival, and tactical equipment operations. Each WS is attached with specific Army echelons or units and provides Air Force C2 of subordinate detachments and operating locations that are co-located with the supported Army unit they are habitually aligned to support.

² "Basic soldier skills" refers to training mandated and provided by the Army for weather personnel embedded in Army units in accordance with Army Soldier Training Publication 21-1-SMCT, [Soldier's Manual of Common Tasks, Warrior Skills, Level 1](#) (common access card required).

The squadron manages the [centralized control and decentralized execution](#) of environmental support to these echelons and units. The squadrons are resourced to integrate support into specified Army units in both garrison and expeditionary environments via a direct support command relationship. The weather forces supporting these echelons provide general support to subordinate Army echelons, if required.

When deployed to support conventional Army operations, DAF weather personnel are typically assigned to an expeditionary weather squadron (EWXS) comprised of deployed mission-ready weather personnel supporting their habitually aligned Army units. The EWXS is normally a subordinate unit within an expeditionary air support operations group.

When appropriate, the EWXS commander tailors conventional Army weather support to forward deploy in support of their habitually aligned Army modular force echelons. These forward-deployed weather personnel leverage analysis and forecasting information from centralized weather organizations via a combination of [reachback](#) and distributed operations to integrate mission-tailored weather and weather effects information essential to planning and executing operations. The air component commander retains [operational control](#) and [administrative control](#) of conventional Army weather support units and provides those units in direct support of Army operations. As an alternative, the [joint force commander](#) may attach with specification of [tactical control](#) either the EWXS or its subordinate units to the land component commander when needed.

AIR FORCE SPECIAL OPERATIONS COMMAND

Air Force Special Operations Command provides weather support to DAF and Army special operations forces (SOF). Support is provided by assigned weather flights at the installation level. In some cases, SOF weather flights may leverage information provided by reachback weather organizations in support of home station and deployed special operations missions.
