BY ORDER OF THE SECRETARY OF THE AIR FORCE

AIR FORCE POLICY DIRECTIVE 15-1

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Weather

WEATHER OPERATIONS

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This Air Force Policy Directive (AFPD) provides policy and oversight for weather and environmental operations and implements Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3810.01F, *Meteorological and Oceanographic Operations*. It applies to uniformed members and civilian employees of the Regular Air Force and of the Air Force Reserve and Air National Guard when serving in a Title 10 status. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management System Records Disposition Schedule.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include updates to verbiage encompassing environmental sciences beyond atmospheric science, includes policy on studies supporting Department of Defense (DoD) climate change impact assessments, and delineates roles and responsibilities consistent with existing Air Force policy.

1. Overview. Environmental situational awareness is critical to predictive battlespace awareness. It enables commanders at all levels to integrate the conditional state(s) of the surface, atmosphere, and space environments and consider their effects on military operations. Commanders must integrate environmental effects into appropriate risk management and military decision-making processes. To maximize effectiveness, commanders require timely, accurate, relevant, and consistent environmental information.

2. Policy. It is the Air Force's (AF) policy to:

2.1. Provide past, current, and predicted terrestrial weather, climate, hydrometeorological, and hydrological services for all elements of the Air Force, designated parts of the Intelligence Community (IC), and the U.S. Army in accordance with CJCSI 3810.01F.

2.2. Provide space environment products and services to all elements of the DoD and designated parts of the IC in accordance with Department of Defense Directive (DoDD) 3100.10, *Space Policy*; CJCSI 3810.01F; Joint Publication (JP) 2-01, *Joint and National Intelligence Support to Military Operations*; and JP 3-59, *Meteorological and Oceanographic Operations*.

2.3. Provide Modeling and Simulation of the air and space natural environment in support of all elements of the DoD in accordance with Department of Defense Instruction (DoDI) 5000.70, *Management of DoD Modeling and Simulation (M&S) Activities*; DoDD 5000.59, *DoD Modeling and Simulation (M&S) Management;* and AFPD 16-10, *Modeling and Simulation*.

2.4. Provide weather, space weather, and climatological data and services in support of DoD and National Science Foundation polar operations in accordance with DoDD 5101.16E, *DoD Executive Agent (EA) for Support to the National Science Foundation (NSF) Division of Polar Programs (PLR),* and the Memorandum of Agreement between the Department of Defense and the National Science Foundation for the National Science Foundation's Polar Programs.

2.5. Provide terrestrial weather, climate, hydrometeorological, and hydrological studies and expertise in support of climate change impacts to the DoD in accordance with DoDD 4715.21, *Climate Change Adaptation and Resilience*.

2.6. Interface with interagency and international environmental service providers to ensure compliance with national and international standards and to foster complimentary efforts in research, development, and capabilities.

3. Roles and Responsibilities.

3.1. The Air Staff is responsible for policy, resource advocacy, and resource allocation for environmental operations provided by the Air Force in accordance with the CJCSI 3810.01F.

3.2. Deputy Chief of Staff, Operations (AF/A3) is responsible for:

3.2.1. The Functional Authority for Air Force weather and designation of Functional Manager role to the Director of Weather (AF/A3W).

3.2.2. Weather and environmental operations and capabilities to support military operations and direct support to elements of the AF, U.S. Army, and designated parts of the IC according to interservice directives and CJCSI 3810.01F.

3.2.3. Implementing Global Force Management force allocation guidance for AF weather and environmental capabilities. Organize and allocate environmental science capabilities, in coordination with the Joint Chiefs of Staff, to meet Combatant Commander requirements consistent with AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force (AEF) and Global Force Management*. Provide policy and guidance to all AF military weather and environmental science personnel against AEF Indicators. Assess and monitor AF-wide weather and environmental science technical performance and effectiveness. Monitor operational readiness of weather and environmental science capabilities.

3.2.4. Providing space natural environment products and services to all elements of the DoD and designated parts of the intelligence community in accordance with CJCSI 3810.01F and JP 3-59.

3.2.5. Authoritative atmospheric and terrestrial climate data and information, and retrospective space environment data and information, in support of, and consistent with National Climate Assessments and associated DoD and IC activities involving the mitigation and adaptation of DoD and military planning and resource decisions, worldwide.

3.2.6. Guidance and procedures to implement Air Force weather and environmental science operations, to include Modeling and Simulation activities for the air and space natural environment according to DoDI 5000.70.

3.2.7. Oversight and advocacy for the Air Force Weather Weapon System, to include strategic planning, architecture, capabilities-based analyses, programming, budgeting and sustainment.

3.2.8. Expertise in support of the Total Force, interagency, international, and other government inquiries for weather, space weather, hydrological, climatological or other geoscience-related topics.

3.3. Major Command (MAJCOM) commanders providing support to AF and/or Army missions will:

3.3.1. Employ appropriately sized and organized weather and environmental science staffs to provide functional management and oversight of assigned weather and environmental science forces and subject matter expertise in support of the A-staff and AFFOR staff activities.

3.3.2. Organize, train and equip assigned weather and environmental science personnel to characterize and exploit environmental data and to enable collection, processing, analysis, prediction, tailoring, dissemination integration and mitigation of past, current, and future environmental intelligence within military decision-making cycles.

3.3.3. Assess and monitor technical performance, effectiveness, and operational readiness of weather capabilities consistent with AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force (AEF) and Global Force Management*.

3.3.4. Execute, if designated as a lead command for all or part of the Air Force Weather Weapon System, lead command responsibilities and duties consistent with AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, and ensure weather capabilities are integrated and considered in any lead-command planning, programming, budgeting, and requirements processes. As a using command, forward weather requirements to the designated lead command.

3.4. Commander, Air Combat Command, will:

3.4.1. Conduct global and regional centralized weather and environmental science operations in support of AF, Army, IC and other designated missions, leveraged across all combatant commands and MAJCOMs.

3.4.2. Provide a full spectrum of centralized weather and environmental science information (including output from numerical weather prediction models, meteorological satellite imagery, air and space environmental data and products, and climatology) to analyze the past, current, and future land, air, and space environments.

3.5. Commander, Air Education and Training Command will:

3.5.1. Assess training needs, provide initial skills and institutional advanced training programs for enlisted weather operations specialists and weather and environmental science officer personnel. Assist the Air Staff in effectively developing and sustaining weather and environmental science personnel. Develop distributed learning materials in support of the weather and environmental science -training program.

3.5.2. Sustain a Basic Meteorological Program for the entry-level accession of weather and environmental science officers without requisite meteorology or atmospheric science degrees. Sustain advanced academic degree programs at the Masters and Doctorate levels for environmental sciences to include resident advanced degree programs.

3.6. Commander, Air Force Materiel Command (AFMC) will:

3.6.1. Conduct integrated lifecycle management for assigned components of the Air Force Weather Weapon System through supporting Program Executive Officers.

3.6.2. Provide weather and environmental science support to AFMC-managed research, development, acquisition, testing, and sustainment efforts for AF weapon systems. Assist the AF weather and environmental science community in developing and maintaining capabilities to support emerging weapon systems.

3.7. Commander, Air Force Special Operations Command will:

3.7.1. Maintain responsibility for unique weather and environmental science capabilities required to support special operations missions.

3.7.2. Support US Army Special Operations Command, through US Special Operations Command, to include planning, programming, budgeting and sustainment of required capabilities.

BARBARA BARRETT
Secretary of the Air Force

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

CJCSI 3810.01F, *Meteorological and Oceanographic Operations*, 23 April 2019

AFMAN 33-363, *Management of Records,* 21 July 2016

DoDD 3100.10, *Space Policy*, 4 November 2016

JP 2-01, *Joint and National Intelligence Support to Military Operations*, 5 July 2017

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DoDI 5000.70, *Management of DoD Modeling and Simulation (M&S) Activities,* 15 October 2018

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AFPD 16-10, *Modeling and Simulation,* 23 January 2015

DoDD 5101.16E, *DoD Executive Agency (EA) for Support To The National Science Foundation (NSF) Division of Polar Programs (PLR),* 17 August 2017

Memorandum of Agreement between the Department of Defense and the National Science Foundation for the National Science Foundation's Polar Programs, 1 May 2007

DoDD 4715.21, *Climate Change Adaptation and Resilience,* 31 August 2018

AFPD 10-4, *Operations Planning: Air & Space Expeditionary Force (AEF) and Global Force Management,* 4 April 2019

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems,* 8 March 2007

Prescribed Forms

None.

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AEF—Air and Space Expeditionary Force

AF—Air Force

AFMC—Air Force Materiel Command

AFPD—Air Force Policy Directive

CJCSI—Chairman, Joint Chiefs of Staff Instruction

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDI—Department of Defense Instruction

IC—Intelligence Community

JP—Joint Publication

MAJCOM—Major Command

OPR—Office of Primary Responsibility

Terms

Analysis—In weather operations, the process of studying and transforming collected and processed weather observations in the form of data and information into a current or near term characterization of the state of the air and space environment; usually including a separation of the entity into its component patterns and involving the drawing of families of isopleths for various elements . Thus, the analysis of weather charts may consist, for example, of the drawing and the interpretation of the patterns of wind, pressure, pressure change, temperature, humidity, clouds, and hydrometeors, all based on observations taken or forecast simultaneously.

Collection—In weather operations, the process of gathering and storing raw weather data and information into databases and processing elements from which weather products are later derived.

Dissemination—The process of delivering information and products to end users in a suitable form.

Functional Authority—Senior leaders, to include Assistant Secretaries, Deputy Chiefs of Staff (three-star), and other selected AF two-letter General Officer/Senior Executive Service-level leaders that provide corporate perspective of institutional requirements and force management and development. The Functional Authority serves as a final authority to ensure all policies, established in accordance with this document, and are implemented within their functional community. Functional Authorities are supported by functional managers who are supported by Career Field Managers.

Functional Manager—Senior leaders, designated by the appropriate Functional Authorities, who provide day-to-day management responsibility over specific functional communities. While they should maintain an institutional focus with regard to resource development and distribution, functional managers are responsible for ensuring their specialties are equipped, developed, and sustained to provide Air Force capabilities.

Integration—The process of applying tailored information and products to appropriate missions, tasks, and functions to inform planning and execution decision-making.

Mitigation—The process of providing decision-makers with options and courses of action, based on tailored and integrated information, allowing adjustment of resources to reduce risks and maximize desired outcomes.

Prediction—In weather operations, the process of determining the future state of the atmospheric and space weather environment from analyzed weather data and information, including, but not limited to, assessing advanced mathematical models. The end product of the predictive analysis is a weather forecast.

Processing—A system of operations (process) designed to convert raw data into useful information.

Tailoring—The process of transforming general environmental information into relevant actionable information and products by accounting for operationally significant parameters and values.