



CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTRUCTION

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CJCSI 3810.01E
16 May 2016

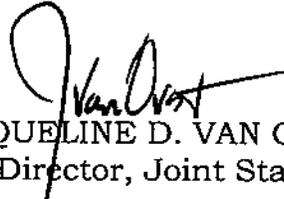
METEOROLOGICAL AND OCEANOGRAPHIC OPERATIONS

References: See Enclosure E.

1. Purpose. To provide Chairman of the Joint Chiefs of Staff (CJCS) policy and guidance and assign responsibility for leveraging and conducting meteorological and oceanographic (METOC) capabilities in support of Combatant Commanders (CCDRs), joint military operations, activities, plans, training, and exercises.
2. Superseded/Cancellation. CJCSI 3810.01D, 28 June 2013, is hereby superseded.
3. Applicability. This instruction applies to the Services, unified commands, Joint Staff, and other joint activities.
4. Policy. Applicable organizations will plan and execute METOC operations in accordance with this instruction and references a-k. See Enclosure A.
5. Definitions. See Glossary.
6. Responsibilities. See Enclosure B.
7. Summary of Changes. Revised terms reflecting reorganization of Service-retained METOC capabilities, inserted cyber domain references and modified responsibilities of participants herein.
8. Releasability. UNRESTRICTED. This directive is approved for public release; distribution is unlimited on NIPRNET. DoD Components (to include the Combatant Commands), other Federal agencies, and the public, may obtain copies of this directive through the Internet from the CJCS Directives Electronic Library at: <http://www.dtic.mil/cjcs_directives/>. Joint Staff activities may also obtain access via the SIPR Directives Electronic Library Web sites.

9. Effective Date. This INSTRUCTION is effective upon receipt.

For the Chairman of the Joint Chiefs of Staff:



JACQUELINE D. VAN OVOST, Maj Gen, USAF
Vice Director, Joint Staff

Enclosures

- A - Policy
- B - Responsibilities for METOC Operations
- C - Service Component METOC Production Units
- D - U.S. Government Policy Regarding Weather Modification
- E - References
- F - Glossary

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ENCLOSURE A

POLICY

1. Commanders must employ METOC capabilities to enable their situational understanding of the operational environment, decision-making and risk management. Commanders must exploit METOC effects assessments on friendly and adversary military capabilities in the air, land, maritime, space, and cyber domains based on METOC limiting thresholds to achieve the asymmetric advantage necessary to meet desired objectives. Commanders must integrate METOC information into Joint Planning and decision-making processes across the range of military operations, planning, training, exercises and logistics to optimize and exploit the employment of military capabilities. Commanders must leverage METOC effects assessments across the joint functions to efficiently and effectively integrate, synchronize and direct operations.
2. Each Combatant Commander (CCDR) will designate a Senior METOC Officer (SMO) to coordinate all METOC operations within the area of responsibility (AOR) or functional responsibility. The SMO is responsible for assisting the CCDR and staff in developing and executing METOC operations, support and service in support of a designated joint force. In addition, during the initial planning for joint operations, the CCDR will establish or leverage a lead METOC production unit from existing METOC capabilities (see Enclosure C).
3. Joint forces will not rely on non-DoD sources of METOC information for joint operations unless determined by the appropriate authority (usually the commander) based on advice from METOC personnel that the information is sufficiently timely, accurate, consistent, and relevant. Under coalition operations, METOC data and information from a host nation or a coalition partner may be authoritative.
4. U.S. military METOC forces must be capable of functioning without substantive dependence or reliance on non-DoD data or support.
5. U.S. military METOC forces must be interoperable, capable of independent operations, and able to operate in a coalition environment integrating systems and formats with partner nations.
6. The United States ratified the Convention on the Prohibition of Military or Other Hostile Use of Environmental Modification Techniques (ENMOD Treaty) in 1977. Enclosure D addresses U.S. policy with respect to environmental and weather modification.

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7. U.S. military METOC effects assessments and information must be integrated within the operational and planning processes across the range of military operations, planning, training, exercises and logistics, and support the commander's battle rhythm (reference a).

8. U.S. Military METOC forces assigned to support NATO operations must operate in accordance with any U.S.-ratified NATO directives, with the exception of any specific reservations documented in the appropriate Standardization Agreement.

ENCLOSURE B

RESPONSIBILITIES FOR METOC OPERATIONS

1. The Chairman of the Joint Chiefs of Staff:

a. Assesses joint METOC requirements for DoD acquisition programs and provides guidance on aspects that relate to the conduct of joint METOC operations (reference b).

b. Advises the Secretary of Defense on critical deficiencies in METOC capabilities identified during the preparation and review of contingency plans and assesses the effect of such deficiencies on meeting national security objectives. Coordinates with the Services, unified commanders, and United States Government (USG) agencies to fulfill shortfalls in METOC capabilities and meet requirements of the supported and supporting CCDRs. Services will perform this coordination when delegated.

c. Advises the Secretary of Defense on the extent to which METOC program recommendations, budget proposals, and manpower considerations of the Military Departments and other DoD Components conform to the priorities established in strategic plans and CCDRs requirements. Where appropriate, reviews plans (e.g., campaign plans, operation plans (OPLANs), concept plans (CONPLANs), etc.) to ensure adequacy, coordination, and interoperability of METOC operations, resources and activities.

d. Incorporates METOC capabilities in the preparation of combined plans for military action in conjunction with the armed forces of other nations. Holds recurring meetings with unified command SMOs and Service METOC staff representatives to help ensure equipment, doctrine, and training resources build interoperable capabilities. Ensures METOC information is discoverable on supported command and control, planning, and execution systems.

e. Resolve METOC issues through the Joint Requirements Oversight Council and its subordinate Battlespace Awareness Joint Capabilities Board and Battlespace Awareness Functional Capabilities Board Working Group. METOC is formally assigned under the Battlespace Awareness Tier 1 Joint Capability Area (reference c).

f. Develops and establishes METOC doctrine for all aspects of the joint employment of the Armed Forces, including standardized guidance on release of METOC data and information to non-DoD agencies and allied/foreign governments.

g. Evaluates and integrates operational METOC requirements of the CCDRs and coordinates Service sponsorship (reference d).

h. Formulates policies and procedures for joint METOC training of the Armed Forces, including exercises and qualification of personnel for joint METOC billets (reference e).

i. Serves as the focal point for coordination of METOC forces, capabilities, and operational support issues in the interagency and international arenas, unless delegated. Provides Joint Staff representation to interagency and international METOC organizations, as required, to include the NATO Military Committee Working Group for Meteorology and Oceanography (MCWG (METOC)) and subordinate panels.

j. Plans, prepares, and coordinates actions (to include achieving cyber effects) required to deny METOC data and information (to include direct readout of meteorological satellite data) to an adversary while retaining use of the information for U.S. and allied forces (references f and g).

k. Ensures joint force training for METOC personnel to include support in the development of the joint training policy (reference h).

l. Coordinates requests for METOC personnel and capabilities to support CCDRs, USG departments and agencies, state and local governments, and international partners as required.

2. Overall Service Responsibilities:

a. Formulate and implement METOC-related policies and programs that support national security objectives and policies established by the President and Secretary of Defense and this instruction. Provide capabilities required to conduct METOC operations in support of joint operations. Services will field METOC systems that are compliant with DoD cybersecurity policy and interoperable with: (1) one another; (2) supported command and control systems; and (3) allied and coalition forces.

b. Plan for the continued evolution of peacetime METOC operations, support, and services to meet mobilization needs in coordination with federal agencies, Joint Staff, or other appropriate authorities.

(1) Forward requests for interagency assets and/or personnel to the Joint Staff.

(2) Coordinate requests for interagency METOC data and information directly with the appropriate federal agencies.

c. Coordinate with the other Services to ensure METOC operational capabilities and programs are coherently developed, in an effective, efficient,

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and affordable manner, to maximize compatibility and re-use across the Services to eliminate redundant development efforts, reduce cost to DoD, and achieve national security objectives. Within existing means and capabilities and when appropriate, assist other Services in accomplishing METOC functions, to include coordination of research and development efforts to avoid duplication and ensure commonality in the development of METOC capabilities.

d. Develop concepts, doctrine, and tactics, techniques, and procedures (TTPs) to implement METOC capabilities in DoD operations. Incorporate DoD METOC forces, missions, and capabilities into Joint and Service doctrine, professional military education, and training. Integrate METOC missions, capabilities, and TTPs; the ability to operate against an adversary with enhanced METOC capabilities into MILDEP war games, simulations, scenario development, experiments, and exercises (i.e., adversary actions designed to degrade, disrupt, or destroy DoD METOC capabilities).

e. Ensure METOC activities and operations are effective, efficient, and responsive. Formulate METOC policies that are fully consistent with national security objectives and policies established by the President and Secretary of Defense.

f. Provide, operate, and maintain the METOC capabilities and resources organic to their own organizations.

g. When required, U.S. Navy or U.S. Air Force organizations may be leveraged as a lead METOC production unit to support CCDR joint operations. Enclosure C lists METOC production units.

3. Chief of Staff, U.S. Army, in addition to the responsibilities outlined in paragraph 2, is responsible for:

a. Weather capabilities in direct support of U.S. Army artillery systems and for atmospheric sensing as prescribed in Army Regulation (AR) 115-10/Air Force Instruction (AFI) 15-157.

b. Providing facilities, services, training, equipment, and funding for U.S. Air Force METOC personnel supporting the U.S. Army as prescribed in AR 115-10/AFI 15-157.

c. Funding U.S. Air Force METOC operations in support of the U.S. Army as prescribed in AR 115-10/AFI 15-157.

4. Chief of Naval Operations, in addition to the responsibilities outlined in paragraph 2, is responsible for:

- a. METOC operations in support of all elements of the U.S. Navy.
 - b. Executing funding decisions made by the Department of the Navy for the development and fielding of METOC equipment for the U.S. Marine Corps.
 - c. Oceanographic operations and capabilities in support of all elements of the DoD.
 - d. Precise time and astrometry for all elements of the DoD.
 - e. Recruiting, organizing, training, equipping, and sustaining forces to provide and employ required METOC capabilities for the joint force commander to enable decisive operations across all domains (i.e., land, maritime, air, space and cyber) and spectrums of conflict to achieve the desired end state.
5. Chief of Staff, U.S. Air Force, in addition to the responsibilities outlined in paragraph 2, is responsible for:
- a. METOC operations in support of all elements of the U.S. Air Force, designated parts of the Intelligence Community, and the U.S. Army, to include climate and hydrometeorological support as prescribed by USA-USAF inter-service directives.
 - b. Space weather operations and capabilities in support of all elements of the Department of Defense (reference i).
 - c. Recruiting, organizing, training, equipping and sustaining forces to provide and employ required METOC capabilities for the joint force commander to enable decisive operations across all domains (i.e., land, maritime, air, space and cyber) and spectrums of conflict to achieve the desired end state.
 - d. Modeling and Simulation of the Air and Space Natural Environment (reference j).
 - e. Climate monitoring and analysis and prediction capabilities for all elements of the Department of Defense.
6. Commandant of the U.S. Marine Corps, in addition to the responsibilities outlined in paragraph 2, is responsible for METOC operations in support of the Marine Air-Ground Task Force and all U.S. Marine Corps garrison activities.

7. Combatant Commanders:

a. Designate a SMO to coordinate all METOC operations within the AOR or functional responsibility. The SMO will be assigned to a joint billet on the unified command staff to most effectively integrate joint METOC operations and to coordinate component METOC capability requirements. The SMO should be primarily tasked for METOC-related duties and functions.

b. Ensure METOC-related activities and capabilities are considered and integrated when performing functions assigned in the Unified Command Plan.

c. Assign METOC tasks to, and direct coordination among, the components to ensure unity of effort. Tailor joint METOC operations to ensure a variety of options in response to any crisis. Options must be sufficiently agile to accommodate the uncertainties associated with the transition from a peacetime posture to crisis response. Provide baseline METOC requirements and prioritized METOC-based mission needs and effects based on operational and/or contingency plans to ensure effective advocacy for METOC capabilities.

d. During the initial planning for joint operations:

(1) Establish, designate, or leverage a lead METOC production unit. Enclosure C lists METOC production units.

(2) Request additional METOC capability as required to meet the Joint Force Commander's (JFC's) METOC requirements.

e. Integrate METOC capabilities and applications into training, exercises, experiments, contingency plans, and operations plans and plan for the employment of these capabilities (defensive and offensive) within their areas of responsibility.

f. Coordinate with U.S. diplomatic missions, senior headquarters, allied or Coalition forces, and other U.S. agencies, as required, to ensure all available METOC data, information, and services, as well as indigenous data, information, and services, are properly considered, evaluated, and if deemed adequate for use, made available to the joint force.

g. Develop and disseminate to the JFC and Service Components a concept of operations (CONOPS) that includes METOC support to joint operations. The CONOPS should include a METOC sensing strategy to leverage and deconflict Service, Federal, allied/coalition, and/or civil capabilities to maximize efficiencies and identify traditional and non-traditional sensing and data collection capabilities.

h. Plan and prepare to execute actions (to include achieving cyber effects) required to deny METOC information (to include direct readout of meteorological satellite data) to an adversary while retaining use of the information for U.S. and allied forces (references f and g). Coordinate with the Joint Staff on all aspects of any plans and actions that may impact other agencies of the USG, allied or neutral nations.

i. Collect and review after action reports and lessons learned during and upon completion of joint operations, incorporating lessons learned into revisions of OPLANs and CONPLANs, and providing them to the Services for future programming and planning.

j. Develop and exercise operational concepts and TTPs to continue operations and achieve assigned national security objectives in an environment in which METOC capabilities have been degraded or denied.

8. Commander, U.S. Special Operations Command (CDRUSSOCOM):

a. Acquires interoperable special operations-unique METOC equipment and providing training to special operations METOC personnel that is beyond Service responsibility and capability.

b. Develops doctrine, tactics, techniques, and procedures for METOC support to special operations.

c. Provides special operations trained METOC personnel to the Theater Operations Command to support Special Operations missions within their designated area of responsibility.

9. JFCs:

a. Establish a requirement for METOC support for the joint force by designating a Joint METOC Officer (JMO) immediately upon initiation of planning. The JMO will be assigned to a joint billet on the JFC staff to most effectively integrate METOC operations into the joint force.

b. Employ component METOC resources to conduct METOC operations in support of joint operations and training.

c. Provide additional METOC guidance, if necessary, to supplement the CCCR METOC CONOPS or other published guidance.

d. Direct and coordinate the activities of all METOC assets under operational control to ensure unity of effort in accomplishing assigned missions.

- e. Identify METOC capability requirements as well as any known shortfalls in METOC capabilities.
- f. Coordinate with the appropriate CCDR for centralized METOC support or other additional support required to fulfill operational needs not within the assigned forces' capabilities.
- g. Coordinate with the CCDR to establish or designate a lead METOC production unit.
- h. Ensure all supporting METOC forces are capable of exchanging information directly and freely with each other in a timely manner to maximize consistency of information.
- i. Ensure air, land, maritime, and space environments are considered during the planning of all operations and that the METOC personnel, data and information are integrated at the beginning of the planning process.
- j. Plan and prepare to execute actions (to include achieving cyber effects) required to deny METOC information to an adversary while retaining use of the information for U.S. and allied forces.
- k. Direct the JMO to develop, integrate, and maintain the Joint Operations Area Forecast (JOAF) for the joint operations area (JOA) and other products as required.

10. Service Components:

- a. Services with organic METOC capabilities will conduct METOC operations in support of joint operations.
- b. Through their respective Services:
 - (1) Provide input to assist with coordination and prioritization of research and development efforts of the individual Services to avoid duplication and ensure commonality in the development of METOC operational capabilities, as appropriate.
 - (2) Coordinate and, as directed by Service agreements or regulations, participate in the funding and procurement of METOC equipment, except for unique special operations forces METOC equipment (see paragraph 8), for the collection, processing, receipt, storage, and transmission of METOC data. This equipment should be configured in accordance with CJCS guidance to ensure interoperability, exploit existing inter-Service capabilities, and avoid unnecessary duplication. Where feasible, equipment should be procured from a common source to reduce costs.

(3) Assist METOC personnel with obtaining weather limiting thresholds for adversary military capabilities.

c. Upon initiation of joint operation planning (reference k):

(1) Use the CCDR CONOPS as guidance in developing and disseminating specific guidance for METOC operations within the Service METOC organizations.

(2) Provide component METOC support requirements to the CCDR and JFC, and identify any known shortfalls in the components' ability to conduct required METOC operations.

d. Provide funding for the deployment of METOC assets and resources in support of joint training exercises and operations in which their component forces are participating.

e. Provide funding, METOC personnel, and equipment to participate in Joint Staff sponsored training, training exercises, and other training opportunities.

11. The SMO to the CCDR:

a. Serves as the focal point for joint force METOC support and keeps the CCDR apprised of METOC operations and conditions in the AOR.

b. Coordinates with the JMO, the Services, and other agencies for METOC support or other additional capabilities required to fulfill operational needs that are not within the components' ability to provide.

c. Develops, implements, and assists in the execution of a CONOPS for METOC support that is integrated with and complements the CCDR's CONOPS. Through the planning and execution cycles, develops an Annex H (METOC Operations) for each CCDR operations order (OPORD), OPLAN, or CONPLAN, as appropriate (reference k). This Annex incorporates the METOC CONOPS and describes METOC operations and services within a joint force. It is the SMO's primary vehicle to provide directive guidance on tasks, responsibilities, and coordinating instructions.

d. Develops a METOC sensing strategy that leverages all possible national, international, and host nation's capabilities to meet the CCDR's ongoing METOC situational awareness requirements. The SMO collaborates with the Service Components and other agencies to build this sensing strategy, which is then included in Annex H (METOC Operations).

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- e. Develops an initial METOC collection plan, based on the sensing strategy, and incorporates it into Annex H (METOC Operations).
- f. Obtains METOC data and information requirements from all joint forces, recommends assignment of METOC tasks, and coordinates with components to ensure unity of effort.
- g. Oversees METOC activities of the Combatant Commands. Serves as the METOC spokesperson for the CCDRs, especially on the METOC requirements of their commands. Provides guidance on joint METOC concept development and experimentation activities to the Combatant Commands and Military Services.
- h. Coordinates METOC communication requirements with the CCDR's communication system directorate (J-6) and components, and assists in the development of Annex K (Communications Systems Support) of each CCDR OPORD, OPLAN, or CONPLAN, as appropriate.
- i. Coordinates METOC support requirements/information needs with CCDR's J-2, Joint Intelligence Centers, and components. Provides input to the joint intelligence preparation of the operational environment, and assists in the development of Annex B (Intelligence) of each CCDR OPORD, OPLAN, or CONPLAN, as appropriate.
- j. Addresses METOC requirements for Annex N (Space Operations) of each CCDR OPORD, OPLAN, or CONPLAN, as appropriate. Coordinates with the U.S. Strategic Command SMO for nonstandard space environmental support requirements.
- k. With the CCDR's approval and the aid of his staff, coordinates with the U.S. diplomatic missions, Joint Staff, other U.S. agencies and allied or Coalition forces, as required, to ensure all available METOC information and systems, including non-DoD, are properly considered and made available, if needed, for use by the joint force. Coordination should include a review of bilateral or multilateral treaties and treaty requirements where the provision of METOC information or services is concerned, as well as any memorandums of understanding with non-DoD agencies for the same purpose. Use of non-DoD assets should only add to the capability resident within U.S. military METOC operational capabilities.
- l. Coordinates with the JFC, the Services, and the JMO on the requirements for the designation of a lead METOC production unit. In cases where multiple JFCs are designated and JOAs overlap, communicates CCDR's guidance and priorities for METOC operations to de-conflict the different operations.

m. Ensures all METOC capability requirements are included in the time-phased force deployment data (TPFDD) and that METOC TPFDD requirements are validated. Through the planning, execution, and review cycle, evaluates requirements against reach-back capabilities to meet objectives outlined in OPLANs and CONPLANs.

n. Collects AARs and lessons learned upon completion of joint operations, identifies shortfalls, evaluates requirements, incorporates requirements into revisions of OPLANs and CONPLANs, and provides the revised documents to the Services for future programming and planning.

o. Integrates METOC capabilities and METOC effects across information-related capabilities, to include but not limited to cyber plans and activities (i.e., Military Deception).

12. JMO:

a. Coordinates the JFC's METOC operations to accomplish the commander's intent via coordination and collaboration with the SMO and component METOC forces assigned or attached to the command. Coordinates with the JFC's staff, to include but not limited to cyber plans and activities, logistics, and civil affairs, to integrate METOC capabilities and METOC effects within the Joint Task Force.

b. Monitors METOC operations within the JOA and oversees development of the JOAF.

c. Collects after actions reports, feedback and assessments from METOC units and provides reports and lessons learned to the SMO.

d. Responsible for coordinating, deconflicting, and overseeing METOC collection capabilities within the JOA.

ENCLOSURE C

SERVICE COMPONENT METOC PRODUCTION UNITS

1. The U.S. Air Force and U.S. Navy maintain METOC production units in support of Service-specific missions that can be leveraged with lead METOC production responsibilities.

2. Most U.S. Air Force METOC production centers are aligned geographically and provide support inherent within a functional or regional Air Operations Center organized under appropriate Air Force Service Component to a CCDR. The U.S. Navy METOC production centers are functionally aligned to support the U.S. Navy's Numbered Fleets and report to the Commander, Naval Meteorology and Oceanography Command. Three METOC production units provide specialized support to the joint force: the 14th Weather Squadron in Asheville, NC provides climatology products; the 2d Weather Squadron in Offutt AFB, NE provides space weather and designated intelligence community support products; the Joint Typhoon Warning Center in Pearl Harbor, HI provides tropical support products.

3. Combatant Commanders, through their respective Service Components, can leverage any of the identified METOC production units. Combatant Commanders may have to leverage a lead METOC production unit with the preponderance of products within the JOA and a supporting METOC production unit for METOC products not covered by the lead METOC unit.

| METOC PRODUCTION UNIT | LOCATION | SERVICE COMPONENT ALIGNED |
|---|----------------------------|---|
| 15th Operational Weather Squadron (OWS) | Scott AFB, IL | AFNORTH Regions (NE CONUS/Canada) |
| 17 OWS | JB Pearl Harbor-Hickam, HI | PACAF AFNORTH (Alaska) |
| 21 OWS | Kapaun AS, Germany | USAFE-AFAFRICA |
| 25 OWS | Davis-Monthan AFB, AZ | AFNORTH Regions (W CONUS/Canada) AFSOUTH |
| 26 OWS | Barksdale AFB, LA | AFNORTH Regions (SE CONUS) |
| 28 OWS | Shaw AFB, SC | AFCENT |
| 23d Special Operations Weather Squadron | Hurlburt Field, FL | Air Force and Army Special Operations (under USSOCOM) |

Figure C-1. Service-Retained U.S. Air Force METOC Production Units

| METOC PRODUCTION UNIT | LOCATION | FLEET ALIGNED |
|-------------------------------------|-----------------|--------------------------|
| Fleet Weather Center – Norfolk | Norfolk, VA | TF80, C4F, C6F |
| Fleet Weather Center - San Diego | San Diego, CA | C3F, C5F, C7F |

Figure C-2. Service-Retained U.S. Navy METOC Production Units

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ENCLOSURE D

U.S. GOVERNMENT POLICY REGARDING WEATHER MODIFICATION

1. The United States is party to an arms control treaty known as the Convention on the Prohibition of Military or other Hostile Use of Environmental Modification Techniques (ENMOD Treaty), ratified in 1980.

a. The ENMOD Treaty states that “Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long lasting, or severe effects as the means of destruction, damage, or injury to any other State Party.” Furthermore, “Each State Party to this Convention undertakes not to assist, encourage or induce any State, group of States or international organization to engage in activities contrary to the provisions of paragraph 1 of this article” (referring to the first quotation).

b. Environmental modification techniques refer to any techniques for changing (through the deliberate manipulation of natural processes) the dynamics, composition, or structure of the Earth, including its biota, lithosphere, hydrosphere, and atmosphere or of outer space.

2. The terms “widespread,” “long lasting,” and “severe” will be interpreted as follows:

a. Widespread. Encompassing an area on the scale of several hundred square kilometers.

b. Long lasting. Lasting for a period of months or approximately a season.

c. Severe. Involving serious or significant disruption or harm to human life, natural and economic resources, or other assets.

3. The United States occasionally receives requests for assistance with weather modification operations in foreign nations, some of which are proposed initially to U.S. military commands or agencies located in those nations. In the event that foreign nations or international organizations request assistance with weather modifications, they should be informed to forward their request through diplomatic channels to the Department of State. No encouragement or commitment should be indicated by the receiving military organization.

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ENCLOSURE E

REFERENCES

PART I -- REFERENCES

- a. Joint Publication 3-0, 11 August 2011, “Joint Operations”
- b. DoDD 5100.01, 21 December 2010, “Functions of the Department of Defense and Its Major Components”
- c. JROCM 103-14, 1 October 2014, “2014 Refinement of the Joint Capability Areas”
- d. CJCSI 3170.01 Series, “Joint Capabilities Integration and Development System (JCIDS)”
- e. Title 10, U.S. Code, Chapter 5, Section 153, 1 March 2012, “Chairman: functions”
- f. CJCSM 3219.01 Series, “Interruption of Remote Sensing Space System Data Collection and Distribution During Periods of National Security Crisis”
- g. Joint Publication 3-13.1, 8 February 2012, “Electronic Warfare”
- h. CJCSI 3500.01 Series, “Joint Training Policy for the Armed Forces of the United States”
- i. DoDD 5101.02E, 25 January 2013, “DoD Executive Agent (EA) for Space”
- j. DoDD 5000.59, 8 August 2007, “DoD Modeling and Simulation (M&S) Management
- k. Joint Publication 5-0, 11 August 2011, “Joint Operation Planning”

PART II -- RELATED

1. DoDI 5100.73, 1 December 2007 (Incorporating Change 2, Effective 12 June 2012), “Major Department of Defense Headquarters Activities”
2. DoDD 5101.16E, 27 May 2015 (Incorporating Change 1, Effective 12 June 2015), “DoD Executive Agent (EA) for Support to the National Science Foundation (NSF) Division of Polar Programs (PLR)”
3. DoDD 7045.20, 25 September 2008, “Capability Portfolio Management”

4. Joint Publication 2-01.3, 21 May 2014, “Joint Intelligence Preparation of the Operational Environment”
5. Joint Publication 3-59, 7 December 2012, “Meteorological and Oceanographic Operations”
6. Title 10, U.S. Code, Section 113, “Secretary of Defense”
7. Title 10, U.S. Code, Section 181, “Joint Requirements Oversight Council”

GLOSSARY

PART I-ABBREVIATIONS AND ACRONYMS

| | |
|---------|---|
| AOR | area of responsibility |
| AAR | after action report |
| AFI | Air Force Instruction |
| AR | Army Regulation |
| CCDR | Combatant Commander |
| CCMD | Combatant Command |
| CDR | commander |
| CJCS | Chairman of the Joint Chiefs of Staff |
| CONOPS | concept of operations |
| CONPLAN | concept plan |
| DoD | Department of Defense |
| ENMOD | environmental modification |
| JFC | Joint Force Commander |
| JMO | Joint METOC Officer |
| JOA | joint operations area |
| JOAF | Joint Operation Area Forecast |
| METOC | Meteorological and Oceanographic Capabilities |
| OPLAN | operation plan |
| OPORD | operations order |
| SMO | Senior METOC Officer |
| TPFDD | time-phased force deployment data |
| TTP | |
| USG | United States Government |
| USSOCOM | U.S. Special Operations Command |

PART II-DEFINITIONS

METOC Forces and/or Personnel - Personnel trained to conduct meteorological, oceanographic, or space environmental operations. This does not imply individual personnel are capable of performing all three aspects of METOC operations.

METOC Information - Meteorological, climatological, oceanographic, hydrological and space environment observations, analyses, predictions and effects.

METOC Operations - Characterizing the past, current, or future state of the meteorological, oceanographic, or space environment and/or exploiting that information.

NOTE: Unless otherwise stated, the terms and definitions contained in this glossary are for the purposes of this document only.