

**BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND**

**AIR FORCE MATERIEL COMMAND
HANDBOOK 15-1**



20 JANUARY 2015

WEATHER

STAFF METEOROLOGIST TOOLBOX

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This handbook supports the objectives of AFPD 15-1, *Air Force Weather Operations*, by providing guidance, identifying, establishing and sustaining terrestrial and space weather support to Air Force (AF) acquisition processes and supporting Research, Development, Test, and Evaluation (RDT&E) and Integrated Life Cycle Management. It supports AFMCI 15-102, *Terrestrial and Space Weather Support Across the Integrated Life Cycle Management Framework*, which establishes policy and procedures for managing Air Force Materiel Command (AFMC) terrestrial and space weather support to Air Force acquisition programs and technology-based efforts. It identifies the responsibilities to determine, document and coordinate terrestrial and space weather support requirements of Air Force acquisition programs from concept through system retirement, including deployment and some aspects of employment in accordance with AFPD 63-1, *Integrated Life Cycle Management*. This handbook provides detailed recommendations for staff meteorologists providing terrestrial and space weather support. This publication may not be supplemented by lower organizational elements. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS).

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. The revised AFMCH 15-1 strengthens support to acquisition, RDT&E and life cycle management by providing guidance and recommendations for staff meteorologists ensuring terrestrial and space weather sensitivities are accounted for during the entire life cycle of a program or effort.

FORWARD

MEMORANDUM FOR NEWCOMERS

SUBJECT: Welcome

By virtue of your selection for this assignment, you are acknowledged as a skilled and dedicated professional with a record of outstanding performance. We are convinced you will find your assignment rewarding, meaningful and challenging. As we move through this period of constrained budgets and manpower reductions, your role as a Staff Meteorologist (Staffmet) becomes even more critical to the success of AFMC's mission. You are in a position where your efforts can affect million-dollar decisions for new weapons systems and technologies and in many cases will have impacts for decades. That's why the Command does its best to be selective in the Staffmet selection process.

A Staffmet is a warrior, a consultant, a diplomat, a detective, a choreographer, and a scientist all rolled into one. Your duty is to function as part of the AFMC life cycle management team to ensure that the weapons systems provided to the war fighting commands are the best available. Therefore you must have field experience (warrior), be able to identify creative solutions (consultant), mediate conflicting interests (diplomat), discover problem areas and solutions to often complex situations (detective), enable different individuals/groups working on the same problem to work together (choreographer), and ensure that sound scientific technology is used in the design and acquisition of weapons systems (scientist). Our efforts must be effective!

Unfortunately, you were not issued an infallible pool of knowledge with your orders. This guide is designed to get you started down the path of success. However, it is not meant to be an exhaustive resource. Where appropriate, we reference publications which provide more detailed information in the areas of importance to you. Your unit may have an orientation program similar to that found in Section 3.

We would appreciate your feedback on this guide to ensure that it is relevant, accurate, and interesting. It is written for your benefit, your suggestions and constructive criticisms will be seriously considered in future versions of this publication.

Once again, welcome.

CATHERINE A. CHILTON
Major General, USAF
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Chapter 1

MISSION OF AFMC AND THE STAFFMET ROLE

1.1. Mission Statement of AFMC

1.1.1. Equip the Air Force for World-Dominant Airpower

1.1.2. AFMC delivers war-winning expeditionary capabilities to the warfighter through development and transition of technology, professional acquisition management, exacting test and evaluation, and world-class sustainment of all Air Force weapon systems. From cradle to grave, AFMC provides the work force and infrastructure necessary to ensure the United States remains the world's most respected air and space force.

1.2. Mission Statement of AFMC Weather Branch (HQ AFMC/A3OW)

1.2.1. Provides policy, technical oversight and unit assistance for weather support to flying operations, weather resource protection at AFMC bases, and acquisition meteorological support across AFMC Centers and Labs. Coordinates and validates requirements for all meteorological services on AFMC bases and ranges. Oversees, validates, and advocates resource requirements for command weather support. Provides AFMC weather readiness oversight and contingency management. Functional manager for the officer, enlisted and civilian weather career fields in AFMC.

1.2.2. AFMC fulfills its mission of equipping the Air Force with the best weapons systems through a "cradle-to-grave" or "life cycle" management of USAF systems and technologies. The life cycle management community is comprised of multiple stakeholders including leadership, researchers, developers, acquirers, testers, sustainers, and users involved in the successful development, acquisition, fielding, and sustainment of systems, subsystems, end items, and services to satisfy validated warfighter capability needs. To execute its mission effectively, AFMC is organized into: Air Force Research Laboratory (research and development), Air Force Life Cycle Management Center (development and acquisition), Air Force Test Center (test and evaluation), Air Force Sustainment Center (sustainment), Installation and Mission Support Center, and the Air Force Nuclear Weapons Center (acquisition and sustainment). To ensure AFMC can meet the challenge of equipping the Air Force for world-dominant airpower, the Air Force (users and AFMC) utilizes the three principal decision-support systems used by the Department of Defense: (1) the Planning, Programming, Budgeting, and Execution (PPBE) process to conduct strategic planning, program development, resource determination and execution analysis, (2) the Joint Capabilities Integration and Development System to determine military capability needs, (3) and the Defense Acquisition System to acquire that capability.

1.3. Acquisition Weather

1.3.1. Now that you have been introduced to AFMC, a fundamental question remains, what is Acquisition Weather?

1.3.2. Acquisition Weather describes the early and pervasive integration of terrestrial and space weather sensitivities into program cost, schedule and performance planning, to ensure weather supportability throughout the life cycle of atmospherically sensitive programs, projects, work units, activities, and initiatives.

1.3.2.1. Consequently, Acquisition Weather is more—much, much more—than mere programmatic support to research, develop, test, evaluate, and acquire systems supporting Air Force Weather.

1.3.3. Acquisition Weather is executed by meteorologists who perform or support basic research and the development, acquisition, and testing of AF weapon systems and capabilities by identifying, documenting, and helping resolve environmental sensitivity issues and weather support requirements. The acquisition or staff meteorologists also prepare the operational weather community in the Air Force and Army to support new weapon systems with identification of system weather sensitivities and assists lead commands with defining tactics, techniques, and procedures for operational weather support.

1.4. Responsibilities

1.4.1. Staffmets are supported by doctrine and our responsibilities stem from AFPD 15-1, AFPD 63-1, AFI 63-101, AFPD 99-1, and AFI 99-103.

1.4.1.1. Let's look at each of these directives to see where we fit into helping AFMC fulfill its mission:

1.4.1.2. AFPD 15-1, *Air Force Weather Operations*. This directive establishes the framework for Air Force weather operations and specifically establishes the two-fold responsibilities of Staff Meteorologists—in one sentence, which we'll restate as two:

1.4.1.2.1. Support the research, development, acquisition, testing and sustainment of AF weapons systems and capabilities.

1.4.1.2.2. Assist the AF weather community in developing and maintaining capabilities to support emerging weapon systems.

1.4.1.3. AFPD 63-1, *Integrated Life Cycle Management*. This directive provides an Air Force acquisition and sustainment Integrated Life Cycle Management (ILCM) *framework* for Air Force systems, subsystems, end items, services, and activities. It states the following concerning acquisition and sustainment execution:

1.4.1.3.1. Acquisition and sustainment execution within the ILCM enterprise begins with initial identification of requirements, continues through development, fielding, and sustainment, and ends with disposal.

1.4.1.3.2. The Air Force shall apply standard systems engineering processes and practices to ensure the integrity, mission assurance, operational safety, suitability, and effectiveness (OSS&E) of each system throughout the life cycle from concept development through disposal. The Air Force shall apply integrity programs to weapon systems.

1.4.1.3.3. An Air Force program shall have an established program manager (PM) throughout the life cycle. The PM is the designated individual with the responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for program cost, schedule, and performance.

1.4.1.4. AFI 63-101/20-101, *Integrated Life Cycle Management*. This instruction establishes the ILCM *guidelines* and *procedures* for AF personnel who develop, review, approve, or manage systems, subsystems, end-items, services, and activities.

1.4.1.4.1. The PM is responsible for assuring the OSS&E of systems and end items.

1.4.1.4.2. Operational Safety. The level of safety risk to the system, the environment, and the occupational health caused by a system or end item when employed in an operational environment.

1.4.1.4.3. Operational Suitability. The degree to which a system or end item can be placed satisfactorily in field use, with consideration given to availability, compatibility, transportability, interoperability, reliability, maintainability, wartime use rates, full-dimension protection, operational safety, human factors, architectural and infrastructure compliance, manpower supportability, logistics supportability, natural environmental effects and impacts, and documentation and training requirements.

1.4.1.4.4. Operational Effectiveness. The overall degree of mission accomplishment of a system or end item used by representative personnel in the environment planned or expected (e.g., natural, electronic, threat) for operational employment, considering organization, doctrine, tactics, information assurance, force protection, survivability, vulnerability, and threat (including countermeasures, initial nuclear weapons effects, and nuclear, biological, and chemical contamination threats).

1.4.1.5. AFPD 99-1, *Test & Evaluation*. This directive establishes broad policy and direction for all Air Force test and evaluation (T&E) activities and organizations.

1.4.1.5.1. The T&E community is a key stakeholder in the ILCM framework and works in concert with leadership, developers, acquirers, integrators, users, and sustainers to ensure success.

1.4.1.6. AFI 99-103, *Capabilities-Based Test and Evaluation*. This instruction describes the planning, conduct, and reporting of cost effective T&E programs as an efficient continuum of integrated testing throughout the system life cycle.

1.4.1.6.1. The PM will ensure a Chief Developmental Tester (CDT) or Test Manager is responsible for managing all Developmental Test and Evaluation (DT&E) for the program office. The CDT ensures all necessary organizations with specialized skills contribute to development of the Test Evaluation Strategy (TES). The TES documents the overall structure and objectives of the program's T&E activities.

1.4.1.6.2. But where do the "users" fit as stakeholders in this construct? From the vantage point of those three decision support systems we mentioned the Air Force uses, there are three types of MAJCOMs:

1.4.1.6.2.1. Lead Command. The command designated to serve as the operators' interface with the PM for a weapon system as defined by AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*. For example, ACC is designated as the Lead Command for the F-15.

1.4.1.6.2.2. Using Commands. All the other commands possessing a weapon system for which some other command has been designated as the Lead

Command. Using Commands are also designated in AFPD 10-9. For example, PACAF, USAFE, AETC, AFMC, and the ANG are designated as Using Commands for the F-15.

1.4.1.6.2.3. Implementing Command. The command providing the majority of personnel in direct support of the PM responsible for: development, acquisition, test & evaluation, and/or sustainment activities. For example, AFMC is the Implementing Command for the F-15 (as well as a Using Command).

1.4.1.6.3. So it's the Lead Command, representing itself and the Using Commands, which becomes the "user" in the life cycle management community, of which you also are a part.

1.5. Roles of the Staff Meteorologist

1.5.1. The mission of the Staffmet is two-fold:

1.5.1.1. Assist the Centers and Labs in the research, design, acquisition, testing evaluation and sustainment of new and existing weapons systems.

1.5.1.2. Provide information to MAJCOMs and HAF to ensure Air Force Weather capabilities to support future USAF weapons systems are programmed, developed and maintained.

1.5.2. Your role as Staffmet is to function as a member of the AFMC Research & Development (R&D), Acquisition, T&E and Sustainment Team at your base to ensure environmental concerns are considered throughout the life cycle of an Air Force weapons system. It is your role to get integrated into the programs/projects/initiatives and teams that support weapon systems throughout AFMC.

1.5.3. A Staffmet works in many different environments within the structure of AFMC, and may be known by different titles. A Staffmet working with the acquisition community may be called an acquisition meteorologist or Acqmet, one working with the test and evaluation community may be called a test meteorologist, a meteorologist assisting the research and development community may be titled as a research meteorologist. In this document and in most of the other regulations, instructions and other correspondence that HQ AFMC/A3OW develops, we will use the generic term of Staffmet. It doesn't matter what the title may be, the mission of the AFMC Staffmet is to ensure that the US Air Force and AFMC get the best product or system to perform the mission by ensuring that environmental issues are considered in the research, design, acquisition, test and evaluation, and sustainment support for the system.

1.5.4. Involvement in the R&D process ensures that environmental concerns are considered early in the life of the program, where system changes to mitigate the environmental impact on the system or to enhance the operational capability of the system are less costly. Involvement in the acquisition and test phases of the program lifecycle ensure that the Air Force will get a system that will operate as intended in the environment in which it is designed to function.

1.5.5. Following the guidance outlined in AFMCI 15-102, *Terrestrial and Space Weather Support across the Integrated Life Cycle Management Framework*, will help to ensure that

Air Force Weather (AFW) has the technology, equipment and expertise to support new environmental requirements for new USAF weapon systems.

1.5.6. Involvement with the MAJCOMs ensures that all environmental limitations and concerns are understood by the using commands. This process ensures that environmental requirements and constraints are considered and addressed in the tactics, techniques and procedures utilized by those supporting newly acquired weapons systems.

1.5.7. A Staffmet's work is often self-initiated. In contrast to the typical operational support scenario where the users (customers) usually know what weather support they need and go to the weather station to get it, the Staffmet frequently has to go to potential clients and prove to them that they need meteorological or aerospace environmental support.

1.5.8. Staffmets have saved the US Air Force millions of dollars in precious R&D, Acquisition, T & E and Sustainment resources. Some examples of this include;

1.5.8.1. F-16 Program Office- Analysis of world-wide temperature extremes - Saved \$9M/yr

1.5.8.2. SOF Program Office- Analysis of contractor proposals avoided redesign - Saved \$7M

1.5.8.3. OTH-B Radar- Identified sensor requirement - Saved \$500K

1.5.8.4. LANTIRN Support- Saved \$200K

1.5.8.5. 4950th Test Wing- Sonobuoy location cloud study - Saved \$1M

1.5.8.6. Advanced Tactical Air Reconnaissance Program - Saved \$300K

1.5.8.7. B-1 Program- Icing study - Saved \$250K

1.5.8.8. Aeroacoustic Research Complex / Acoustic Software- Saved \$1M

1.5.8.9. Hypersonic Test Vehicle- Saved \$4M

1.5.8.10. Precision Airdrop- Saved \$100K

1.5.9. It is very important to document the value of Staffmet projects to convince those who control resources not to degrade this valuable service. Utilize the process outlined in AFMCI 15-102, *Terrestrial and Space Weather Support across the Integrated Life Cycle Management Framework*, for transmitting these valuable success stories to key leaders.

Chapter 2

KEYS TO BECOMING A SUCCESSFUL STAFF METEOROLOGIST

2.1. What are the Keys to Becoming an Effective Staffmet

2.1.1. An excellent question!

2.1.1.1. Key 1: Get to know your organization.

2.1.1.1.1. People often are well into projects before they run into problems and realize they don't know where to go for help. First things first! Get to know the people and expertise in your own organization and the resources available to support you.

2.1.1.1.1.1. Study the command's wiring diagram

2.1.1.1.1.2. Get to know the projects/programs you support by reading program documentation, etc.

2.1.1.1.1.3. Get out of your office and meet the customers on their home ground

2.1.1.1.1.4. Attend system program office, technology directorate or division staff meetings

2.1.1.1.1.5. Walk the halls of the program office, organization, or directorate you are supporting

2.1.1.1.1.6. Become an integral part of the organization you support

2.1.1.1.1.7. Offer to present a briefing of your capabilities at appropriate staff/technical meetings

2.1.1.2. Key 2: Get to know the tools of the Staffmet.

2.1.1.2.1. Other AFMC Weather Units

2.1.1.2.2. Unit Monthly Activity Reports

2.1.1.2.3. 21st Intelligence Squadron

2.1.1.2.4. 557th Weather Wing

2.1.1.2.5. World Wide Web Information

2.1.1.2.6. HQ AFMC/A3OW

2.1.1.2.7. AFMC Center Electronic Newsletters

2.1.1.2.8. Defense Acquisition Guidebook (DAG)

2.1.1.2.9. AFRL Investment Management (AIM) Database

2.1.1.2.10. 14th Weather Squadron

2.1.1.2.11. Relevant DoD, AFPDs and AFIs

2.1.1.2.12. Army and Navy Research Centers

2.1.1.2.13. Meetings and Symposia

2.1.1.2.14. Range Commander's Council, Met Group

2.1.1.2.15. Air Force Weather Knowledge Center

2.1.1.2.16. Other Staffmets

2.1.1.3. One of the most valuable resources/assets you have is the network of other AFMC Staffmets. There are meteorologists assigned to Kirtland AFB, Eglin AFB, Wright-Patterson AFB, Edwards AFB, Holloman AFB and Hanscom AFB. These Staffmets have a wide range of experience and expertise which includes space vehicles, directed energy, atmospheric physics and aerospace systems to name a few. If these Staffmets do not know the answer to your question or have not worked this issue before, they will be able to point you in the right direction to find the answer. (See [Attachment 6](#))

2.1.1.4. Staffmets aren't required to answer difficult questions on the spot. It's better to research the problem and come back with a good answer. You will need to know how to submit a Support Assistance Request (SAR) via the 14th Weather Squadron or specialized support for a test via one of the local weather flights through the appropriate OWS.

2.1.1.5. Key 3: Get to know your job

2.1.1.5.1. Spend some time walking around the pool before jumping in. You may find your job is not well defined or understood, especially if you have no overlap with your predecessor. You may find an in-box full of projects waiting for you to get started. To be effective, you must quickly learn the following (you may not get time later):

2.1.1.5.2. Your job responsibilities ([Attachment 2](#))

2.1.1.5.3. Your points of contact

2.1.1.5.4. Your work priorities ([Attachment 3](#) & [Attachment 5](#))

2.1.1.5.5. Other MAJCOM Wx POCs ([Attachment 6](#))

2.1.1.5.6. The Acquisition/Planning Process (DAG) ([Attachment 4](#))

2.1.1.5.7. Your contacts in HQ AFMC/A3OW

2.1.1.5.8. Language and Terminology (DAG) ([Attachment 4](#))

2.1.1.5.9. Security concerns

2.1.1.5.10. Pertinent References and Publications ([Attachment 1](#))

2.1.1.5.11. Get necessary training (See [Chapter 3](#))

2.1.1.5.12. The right People

2.1.1.6. Key 4: Get to know yourself.

2.1.1.6.1. No one likes to admit they need help. But inefficiency can often be rooted in stubborn self-reliance. This is especially true for the person who has never served as a Staff Meteorologist.

2.1.1.6.2. To be effective you must examine your:

2.1.1.6.2.1. Strengths and weaknesses. Do you have what you need to do the job? If you don't then where can you find training or someone who can help you?

2.1.1.6.2.2. Ability to work with others. Cooperation not confrontation is the key to success.

2.1.1.6.3. Finally, get organized. It is important to develop some internal guidelines on Staffmet support. Each Staffmet must use initiative and creativity to determine what their job requires. Reference the “Methodology for Customer Support” in [Attachment 5](#). It is an excellent example of how to organize support to your customers.

Chapter 3

TRAINING FOR SUCCESS

3.1. Training

3.1.1. Now that you have been able to find your desk with some consistency, you may ask: **What do I need to know to do my job?** There is no simple answer to this question since each Staffmet position requires a unique educational and experience level. We cannot present a shopping list of specific schools and training. Instead we want to focus on the common training requirements for all Staffmets. Some specific examples and sources are listed at the end of this section. These fall into two categories: Technical and Acquisition Support.

3.1.2. Technical - Ask yourself (or HQ AFMC/A3OW), what technical expertise do I need to do my job? Do I need to become more knowledgeable on the space environment, aircraft flight dynamics, atmospheric propagation of electro-magnetic energy or radar ducting? Where can I get this expertise? Try local libraries, universities, local university short courses, the Air Force Institute of Technology (AFIT) in-residence or short courses, attendance at conferences and symposia and their short courses. Ask other Staff Meteorologists!

3.1.3. Acquisition Support - Ask yourself (or HQ AFMC/A3OW), do I understand how the Air Force acquisition process works? Do I need to become Acquisition Program Development Process (APDP) qualified/certified or do I just need a basic understanding of the process? At a minimum, you should take the online course ACQ 101 via Defense Acquisition University (DAU), for a basic understanding of how acquisition works. You'll need to talk with those you support, but if you serve as a program manager (PM), you should try to achieve at least PM level 1 and level 1 for T&E, if that is your focus. There are plenty of courses via Defense Acquisition University (DAU) to help you achieve the right level of certification. AFIT also has in residence, correspondence; video teleconference, virtual classroom, and other computer based learning courses available. Don't limit yourself either, there are plenty of short courses at symposia and talk to those you support for advice, chances are they'll be able to help.

3.1.4. Planning Process - Do you know how the DoD and the USAF determine mission requirements, plan for and meet these requirements? A quick review of the appropriate instructions and policy directives may answer this question. Reviewing the Defense Acquisition Guidebook (DAG) will help to understand how this process works.

3.2. Staffmet Orientation

3.2.1. Due to the nature of Staffmet support, HQ AFMC/A3OW has tried to establish some basic, command-wide orientation and training requirements as outlined in AFMCI 15-102. We do understand requirements may be different for each Staffmet based upon your organization, experience and lessons learned supporting your customers and their programs.

3.2.2. Your challenge at each unit is to adapt your training and certifications to your local mission and requirements. You may find you can delete some items, but you may have to add other facets to your training program which do not appear here. Of course, not

mentioned until now, but vital to the success of any Staffmet is the fundamental training which each Staffmet brings to the job. Specifically, that is their background and experience as a weather officer and the advanced education received in earning their graduate degree.

3.3. Organization and Mission

3.3.1. A Staffmet should be familiar with the following areas:

3.3.1.1. AFMC Mission

3.3.1.2. Unit Mission and Organization

3.3.1.3. Supported Unit/Units Missions and Organizations

3.3.1.4. Planning Process (JCIDS, PPBE, Defense Acquisition Management System)

3.3.1.5. Position/Job Description

3.3.1.6. Test & Evaluation Process

3.3.1.7. Research & Development Process

3.3.1.8. Acquisition Process

3.3.1.9. Unit Financial Planning and Sources

3.3.1.10. Program/Project Continuity Binders: Here are some elements which might be appropriate for inclusion in these binders, please add to the list if needed.

3.3.1.10.1. Program Overview

3.3.1.10.2. Points of Contact

3.3.1.10.3. Environmental Sensitivities

3.3.1.10.4. Work Done/Data Provided

3.3.1.10.5. Projects Completed

3.3.1.10.6. Pertinent Correspondence

3.3.1.10.7. Pertinent Files and Locations

3.3.1.10.8. Organizational Structure

3.3.1.10.9. Support Agreements

3.3.1.10.10. Visit Reports

3.3.1.10.11. TDY Instructions

3.4. Training Suggestions/Sources

3.4.1. A Staffmet should acquire/maintain the following types of training:

3.4.2. Specialized Training on hardware and software you will be using (MODTRAN, etc.)

3.4.3. Basic Acquisition Training (ACQ XXX, SYS XXX, etc.) Available from AFIT or The Defense Acquisition University via In-Residence, online, etc.

3.4.4. Technical and scientific Short Courses

3.4.4.1. AFIT – Various courses on Lasers, Atmospheric Physics

3.4.4.2. Local Universities – Available Technology and Training (various)

3.4.4.3. SPIE Tutorials

3.4.5. Meetings, Conferences and Symposia Attendance/Presentations, short courses while attending

3.4.6. Base/Unit Procedures

3.4.7. Specific Unit Training Requirements

3.4.8. Management Training

3.4.9. Mobility Training

3.4.10. Atmospheric Computer Models, if required.

3.4.11. All of this training should be requested through your supervisor, local training facilitator/training office. Some of this in-residence or other training may involve training costs. You may have to provide a fund cite for either or both the training course costs and the TDY costs. This funding can be requested through your unit, customers, or as an unfunded requirement through your financial personnel.

3.5. Suggestion

3.5.1. Maintain a notebook, for your personal use, chronologically listing a summary of all meetings, phone conversations, correspondence and discussions concerning each project, program or support question answered. This serves as a reminder and a valuable source document.

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Director of Air, Space and Information Operations

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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- AFI 99-106**, *Joint Test and Evaluation Program*, 26 August 2009
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- AFPD 61-1**, *Management of Science and Technology*, 18 August 2011
- AFPD 63-1**, *Integrated Life Cycle Management*, 3 July 2012
- AFPD 99-1**, *Test and Evaluation*, 3 June 2014
- AFPAM 14-111**, *Intelligence Support to Acquisition*, 19 June 2014
- CJCSI 3170.01**, *Joint Capabilities Integration and Development System*, 10 January 2012
- MIL-HDBK-310**, *Global Climatic Data for Developing Military Products*. Provides worldwide climatic data for guidance, not requirements, in the design and testing of weapons systems
- MIL-STD 810G w/Change 1**, *Military Standard, Environmental Test Methods and Engineering Guidelines*. Establishes uniform environmental test methods for determining the resistance of equipment to the effects of natural and induced environments associated with military operations
- MIL-STD 1809**, *Military Standard, Space Environment for USAF Space Vehicles*. Addresses the natural unperturbed space environment, the standard is intended to ensure that space environment interactions are considered and incorporated into the design of space systems, and provide a basis for evaluation of the hardness of space systems
- Defense Acquisition Guidebook**, <https://dag.dau.mil/Pages/Default.aspx>. Acquisition Policy and Discretionary Best Practice Guide

Adopted Forms

AF FORM 847, Recommendation for Change of Publication

Abbreviations and Acronyms

AFI—Air Force Instruction

AFW—Air Force Weather

AFIT—Air Force Institute of Technology

AFPD—Air Force Prescribing Directive

AFRL—Air Force Research Laboratory

AIM—AFRL Investment Management

APDP—Acquisition Program Development Process

CDT—Chief Developmental Tester

DAG—Defense Acquisition Guidebook

DAU—Defense Acquisition University

DT&E—Developmental Test and Evaluation

ILCM—Integrated Life Cycle Management

JCIDS—Joint Capabilities Integration Development System

OSS&E—Operational Safety, Suitability and Effectiveness

OWS—Operational Weather Squadron

PM—Program Management

PPBE—Planning, Programming, Budget and Execution

R&D—Research and Development

RDT&E—Research, Development, Test, and Evaluation

SAR—Support Assistance Request

T&E—Test and Evaluation

TES—Test Evaluation Strategy

Attachment 2

GENERAL INFORMATION

A2.1. Role of the Staffmet

A2.1.1. Air Force Weather (AFW) personnel are key players in the acquisition process. Acquisition Meteorologists throughout AFMC provide all necessary technical advice, information, and aid, from a weather viewpoint, to AFMC acquisition programs through all phases of the acquisition cycle. Staff meteorologists identify and quantify weather sensitivities of Air Force systems during all phases of the acquisition cycle to the respective Program/Project office and communicate these to the Lead Command Staff Weather Officer (SWO).

A2.1.2. Lead command SWOs supporting the operating commands have the primary responsibility to identify environmental support requirements for the USAF acquisition and technology-based programs generated by their MAJCOMS. They ensure environmental support requirements and resources are identified in Initial Capability Documents (ICDs), Capability Development Documents (CDDs), Capability Production Documents (CPDs) and CONOPS prepared by their command. Lead command SWOs identify to the appropriate Staffmet and program/project office, any system weather sensitivities or potential operational weather support shortfalls they discover within the planned system.

A2.1.3. Staffmets also identify weather support requirements for Air Force acquisition and technology-based programs. Staffmets ensure weather support requirements and resources are identified in test plans and other technology and acquisition documentation. They ensure new resource requirements are considered in subsequent system acquisition documents for funding outside of AFW as well as those to be funded by AFW. Requirements funded outside of AFW or those unique to the operating command are identified to the Program/Project Office and to the operating command SWO. Weather support requirements for Air Force wide applications are identified to and AF/A3W.

Attachment 3

PROGRAM SUPPORT

A3.1. General

A3.1.1. Acquisition programs follow a four phased program life cycle. These phases along with the decision points to proceed to the next phase, milestones, and documentation are discussed and described in the Defense Acquisition Guidebook, and will not be discussed here. A website with valuable acquisition information and links to other acquisition sites is located at <https://dag.dau.mil/Pages/Default.aspx>, the Defense Acquisition Guidebook home page.

A3.1.2. Staffmet responsibilities:

A3.1.2.1. Track and comment on all the program documentation during each program phase. The best time to make inputs on the program documentation is when the documents are open for comments within the Program Office.

A3.1.2.2. Assist the program/project office to quantify the environment in program documentation.

A3.1.2.3. Work with the program/project office to establish the environmental requirements the contractor must design, while the weapon system evolves or the project develops. Once the contract has been signed by the Air Force, changes in environmental requirements become more difficult.

A3.1.2.4. The Staffmet should maintain multiple contacts within the program/project offices to ensure access to these documents.

A3.1.2.5. As a program/project matures, changes in environmental requirements become more difficult because design changes become more expensive. Therefore Staffmet involvement with a program needs to begin in the earliest stages possible.

A3.2. Program Support Checklist for Staffments:

A3.2.1. The following checklist can be used as a guide by Staffmets who have recently acquired a new or already existing program. The checklist serves to introduce a Staffmet to a program through readings and discussions with the Program/Project Office and the previous Staffmet. This checklist is slanted toward program support; however, it can be modified and used for laboratory projects. A checklist should be worked for all applicable programs and filed in the applicable program file. Additional comments may be added as necessary.

A3.2.2. Introductory Program Information:

A3.2.2.1. Program Name:___.

A3.2.2.2. Program Office Symbol:___.

A3.2.2.3. Lead/Using Command(s) (MAJCOM):_____.

A3.2.2.4. Supporting MAJCOM Weather Unit (e.g., AFSOC/A3OW):_____.

A3.2.2.5. MAJCOM Staff Weather Officer (SWO):.

A3.2.3. Actions to be Taken Using Continuity Information: (initial and date).

A3.2.3.1. Interview with previous program Staffmet: .

A3.2.3.2. Review of Applicable Program Files: .

A3.2.3.3. Interview with Program/Project Point of Contact(s): .

A3.2.4. Review of Program Documentation/Environmental Sensitivity Issues:

A3.2.4.1. References: Review [Attachment 1](#).

A3.2.4.2. Important program/project/initiative documentation should be reviewed to ensure you are up to date on all relevant issues related to the program/project/initiative. Many of the documents needed for review can be accessed via the offices supported and a list of common items referenced are listed in the DAG.

A3.2.4.3. Common documents cited for review include the ICD, the Capabilities Development Document (CDD) and the Capabilities Production Document (CPD), Test and Evaluation Master Plan (TEMP), etc.

A3.2.4.4. Ensure there is open communication between the Centers/Labs/MAJCOMs, program, test offices and leadership at all levels to ensure the right information is understood, passed and acquired when needed.

A3.2.5. Summary

A3.2.5.1. This is not meant to be a complete listing of all the documents that a Staffmet should review or be familiar with for each of the supported programs, it is only meant to highlight some of the more important documents encountered. Each of these documents is reviewed and updated throughout the various phases of the acquisition/development cycle. The Staffmet must be involved in this review process to ensure that environmental concerns are evaluated throughout the acquisition life cycle.

Attachment 4

DEFENSE ACQUISITION GUIDEBOOK

A4.1. What is the Defense Acquisition Guidebook?

A4.1.1. The Defense Acquisition Guidebook is an online tool that outlines acquisition policy and best practices. You can view it online and download as needed.

A4.2. How Can I Get a Copy of the Deskbook?

A4.2.1. Cut and paste this link, <https://dag.dau.mil/Pages/Default.aspx> on the Defense Acquisition University webpage.

Attachment 5

METHODOLOGY FOR CUSTOMER SUPPORT

A5.1. Determine customer needs.

A5.1.1. Visit the program/project manager and other key personnel. Request a tour of their work area/facility.

A5.1.2. Become thoroughly familiar with the pertinent aspects of the program (read program documentation such as the ICD, TEMP, CDD, etc.).

A5.1.3. Determine the areas of meteorological impact.

A5.1.4. Feedback to the program the specific support you recommend and gain their concurrence.

A5.2. Determine the proper sources of information and resources.

A5.2.1. Research local files and review relevant databases.

A5.2.2. Discuss with the Lead MAJCOM SWO, other Staffmets or AFMC/A3OW.

A5.2.3. Task 14 WS, etc., as appropriate.

A5.3. Maintain close contact with the program manager and key personnel involved to maintain awareness of changes.

A5.3.1. Document phone calls, correspondence and discussions in a case/continuity file.

A5.3.2. Follow-up, anticipate, re-examine.

A5.3.3. Inform MAJCOM SWO of your actions and coordinate any support questions.

A5.4. Present finalized support to the customer.

A5.4.1. Ensure customer thoroughly understands meteorological input(s).

A5.4.2. Be sure the customer applies the meteorological input appropriately to the problem.

A5.4.3. Remain alert for follow-up support.

A5.4.4. Coordinate with MAJCOM SWO on transitioning new systems to operational support.

A5.5. Conduct a self-evaluation or lessons learned of your work. Submit value-added and reports as required per AFMCI 15-102. Value-added reports show our leaders, customers and ourselves where we "save them money." Documented savings can have a profound impact in lean budget years.

Attachment 6**AFMC STAFFMET WEATHER UNITS****A6.1. HQ AFMC/A3OW at Wright-Patterson AFB**

A6.1.1. Provides leadership and strategic vision to organize, train, and equip AFMC Weather support for safe operations, resource protection and weapon systems research, development, acquisition, testing, evaluation and sustainment across the command.

A6.2. Air Force Life Cycle Management Center (AFLCMC/XZ) at Wright-Patterson AFB

A6.2.1. Deliver meteorological expertise to the Wright-Patterson R&D and Acquisition communities and advise weather functional forces on emerging warfighter capabilities.

A6.3. Air Force Test Center (AFTC) 96th Weather Flight at Eglin AFB.

A6.3.1. Provides operational weather support to Eglin AFB and assigned units. Provides meteorological consultation services for AFTC, the Munitions Directorate (AFRL/RW), the Armament Directorate (AFLCMC/EB), and other units at Eglin AFB.

A6.4. Air Force Life Cycle Management Center (AFLCMC/HBAW) at Hanscom AFB.

A6.4.1. Provides programmatic support to develop, test, evaluate, and acquire systems supporting Air Force Weather.

A6.5. Air Force Test Center (AFTC) 412 OSS/OSW at Edwards AFB.

A6.5.1. Provides operational base weather station support to Edwards AFB, as well as support to space vehicle atmospheric test, and de-orbit to landing operations. Provides meteorological consultation services to the Air Force Test Center, AFRL activities at Edwards AFB, and the Air Force Test Pilot School.

A6.6. Directed Energy Directorate (AFRL/RD) at Kirtland AFB.

A6.6.1. Provides meteorological consultation services to Starfire Optical Range and the Directed Energy Directorate.

A6.7. Space Vehicles Directorate (AFRL/RV) at Kirtland AFB.

A6.7.1. Provides meteorological consultation services to the Space Vehicles Directorate of AFRL.

A6.8. Air Force Test Center (AFTC) 846TS/TGTPW at Holloman AFB.

A6.8.1. Provides meteorological consultation services to the 96th Test Group, which operates the Air Force's rocket sled test track.