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Operations

ELECTRONIC WARFARE (EW)

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This Instruction incorporates JP 3-51, *Joint Doctrine for Electronic Warfare*, dated 7 April 2000, AFDD 2-5, *Information Operations*, dated 5 August 1998, and AFDD 2-5.1, *Electronic Warfare*, dated 19 November 1999. It defines the processes for equipping, manning, and training for EW operations and the fielding and effectiveness of EW systems. It provides guidance for developing and implementing the Air Force Electronic Warfare mission. It assigns responsibilities for the processes to employ EW. It implements Department of Defense (DoD) Directive 3222.4, dated 31 July 1992, with changes 1 and 2, *Electronic Warfare (EW) and Command and Control Warfare (C2W) Countermeasures*; and AFPD 10-7, *Command and Control Warfare*.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This document reflects the change from specifying individual organizations to providing guidance to MAJCOMs/DRUs on what needs to be accomplish leaving them the flexibility of how and who should accomplish. This AFI has been developed with three sections of fielding effective systems, readiness of those systems, and personnel manning/training. Each section is further defined by plan, do, and assess sub-sections.

1. Purpose . This instruction provides guidance for organizations to equip, man, and train the United States Air Force for Electronic Warfare (EW) operations.

2. EW Processes . This instruction assigns responsibilities to organizations based on the following processes: Equipping which consists of fielding effective EW systems and ensuring EW systems readiness; and EW personnel training and manning. These processes can each be described with the classic cycle of plan, do, and assess as described in the *Air Force Strategic Plan* and AFI 90-1102, *AF Planning System*.

Risk management processes identified in AFPAM 91-902, Operational Risk Management (ORM) Guidelines and Tools, will be used to enhance the plan, do and assess cycle.

2.1. Creating and maintaining concepts of operations (CONOPS) for the employment of EW from the strategic level down to the tactical level, both offensively and defensively, is essential to sustaining a credible capability.

2.1.1. AF/XO will ensure applicable CONOPS/OPLANS (Operation Plans) are reviewed and updated biennially and at least prior to updates of this instruction.

2.1.2. AF/XO will be responsible for HQ AF level EW specific CONOPS and ensure CONOPS created by subordinate organizations are integrated and deconflicted.

2.1.3. MAJCOMs/DRUs, with EW requirements, are responsible for creating, maintaining, and coordinating with HQ USAF their specific CONOPS for employment of EW.

3. Equipping EW Forces : The USAF needs effective and operationally suitable EW systems. [The term “EW system” is defined as databases, emitter collection devices, publications, hardware, software, support equipment, training devices and ground-based simulators, mission data tools, and/or mission reconstruction equipment that conduct EW operations.] Current and future Areas of Engagement will contain a continuously changing and increasingly sophisticated array of combat systems that rely on, and are vulnerable to, electromagnetic activity. These real-time changes involved in equipping EW forces consist of two processes; fielding and sustaining.

3.1. Fielding Effective EW Systems: This section addresses fielding new and upgraded EW systems that are effective and responsive to an ever-changing environment. The process entails a continuing repetition of the three-step cycle of Plan, Do, and Assess. In the Plan step, evaluate the shortfalls in light of the global threat, anticipated force employment and expected resources. Then plan for the acquisition of new systems and upgrades of existing systems by producing formal requirements. The Do step consists of acquiring new or modifying existing EW system components in order to satisfy requirements. In the Assessment step, determine the effectiveness of modifications and systems being developed, currently fielded systems and identify shortfalls.

3.1.1. Plan. The Planning step is a continuous analysis of the existing and future needs for EW systems in order to establish new and revalidate existing operational requirements. This process analyzes four sequential and integrated options: mission data software changes, system Operational Flight Program (OFP) software changes, system hardware changes, and new system/major upgrades (including new systems acquisition). These four graduated options balance increasing capability against higher cost and longer time to select the most practicable. On this scale, mission software changes are the cheapest and easiest to implement and new system acquisitions take the most time and investment to accomplish. In addition, any option aside from mission software changes usually results in additional investments in mission data software, mission data tools, training systems, support equipment and technical data. The product of these steps is a documented requirement (e.g. AF Form 1067, *Modification Proposal*, ORD, etc). It identifies requirements, organizations, and resources necessary to fulfill the requirements to maintain EW system effectiveness.

3.1.1.1. Mission Data Software Change (also called mission data change). The requirement for a change will be documented by appropriate Reprogramming Centers in system impact messages and Operational Change Requests (OCR).

3.1.1.2. Minor System Software Change (also called OFP updates). The requirements will be documented IAW AFI 10-703, *Electronic Warfare Integrated Reprogramming*. Changes governed by DoD 5000-series regulations are no longer characterized as minor.

3.1.1.3. Minor System Hardware Change. The requirements document is an AF Form 1067. Changes governed by DoD 5000-series regulations are no longer characterized as minor.

3.1.1.4. New Systems and Major Upgrades. The requirement documents are MNS, ORDs, and AF Form 1067s. This level is governed by the DoD 5000-series documents. The Operations and Intelligence Communities will coordinate to ensure that Command, Control, Communications, Computers, and Intelligence Support Plans (C4ISP) are written.

3.1.1.5. Responsibilities for the Plan step:

3.1.1.5.1. AF/XO is responsible for establishing an integrated reprogramming (upgrade) process for EW systems. (Ref. AFI 10-703, *EWIR*)

3.1.1.5.2. MAJCOMs/DRUs are responsible for documenting requirements, identifying resources, directing fielding for upgrades, and prioritizing requirements for upgrades, new systems, and intelligence products.

3.1.1.6. Intelligence Products. All Air Force intelligence elements need to monitor for possible changes to intelligence production centers (e.g. Defense Intelligence Agency (DIA), National Security Agency (NSA)) databases, formats, products, etc. Intelligence production center efforts at modernization, efficiency gains, and process changes may alter or delete a product (or simply its database format) that AF units require as an input to their operations.

3.1.2. Do. The Do step involves the actual acquisition, upgrade, and fielding of EW systems to achieve an operationally effective capability. The end objective of the Do step is the fielding of an operationally effective and suitable capability.

3.1.2.1. Accomplish Mission Data upgrades on a cyclical, routine, and emergency basis to maintain mission effectiveness. These upgrades are the first line of defense in countering adversarial changes. Mission data upgrades can also be driven by system OFP software or hardware modifications. In higher priority situations, the integrated reprogramming process (e.g. AFI 10-703) must be able to rapidly reprogram mission data.

3.1.2.1.1. MAJCOMs/DRUs are responsible for executing mission data upgrades on a timeline appropriate to the urgency of the change and provide upgrades to any gained Air Reserve Components before deployment.

3.1.2.2. Accomplish System Software upgrades on a routine planned basis or in response to an identified requirement that cannot be satisfied through mission data upgrades.

3.1.2.2.1. AFMC is responsible for executing system OFP software upgrades.

3.1.2.3. Accomplish Minor Hardware upgrades in response to identified requirements that cannot be satisfied through software upgrades.

3.1.2.3.1. AFMC is responsible for executing minor hardware upgrades.

3.1.2.4. Acquire new systems or make major upgrades when minor hardware and software upgrades will not satisfy requirements. This usually involves creating or modifying both hardware and software. System acquisition and major upgrades will provide the greatest effective-

ness increases but will take the longest time to accomplish.

3.1.2.4.1. SAF/AQ is responsible for direction and program management for new systems and major upgrades.

3.1.2.5. Intelligence Products. Current and accurate databases and intelligence products are critical components of EW system effectiveness.

3.1.2.5.1. AF/XO is responsible for advocating operational users' EW intelligence support requirements to the National intelligence community.

3.1.2.5.2. AFMC will make intelligence production requirements known through the appropriate center Director of Intelligence (DI).

3.1.3. Assess. Assessment of EW systems consists of the quick and responsive characterization of changes in the EW environment. This characterization must include technical and operational vulnerabilities of EW systems as they relate to friendly, allied and adversarial systems. These effectiveness assessments should also include analysis, modeling, test, training simulators and the interoperability of Foreign Military Sales (FMS) systems (See paragraph 3.1.3.7. below). The products of this step identify shortfalls in EW system effectiveness.

3.1.3.1. Analyze Intelligence. This is the first step in determining EW system effectiveness. Various intelligence sources, such as Signals Intelligence (SIGINT), Human Intelligence (HUMINT), Imagery Intelligence (IMINT), and Measures and Signatures Intelligence (MASINT), and others feed the analysis process. (Refer to EWIR Process section, AFI 10-703)

3.1.3.1.1. AF/XO is responsible for advocating all USAF EW priorities to both the Air Force and National intelligence community.

3.1.3.2. Conduct the Foreign Materiel Program (FMP). The FMP, which consist of Foreign Materiel Acquisition (FMA) and Foreign Materiel Exploitation (FME), provides data on the technical and operational vulnerabilities of foreign systems. To maintain the effectiveness of EW systems against foreign systems, FME needs to provide data on capability shortfalls of USAF EW systems. In addition, FME needs to provide data on the technical and operational vulnerabilities of the foreign systems to aid in developing solutions to our shortfalls and enhancement/fixes to our capabilities. The priority for acquisition of new adversary systems or upgrades to older systems to be exploited should be conducted with a thorough understanding of the concept of threat employment, capability, and proliferation. AFI 99-114, *Foreign Materiel Program*, governs the AF FMP.

3.1.3.2.1. AF/TE is responsible for USAF FMP.

3.1.3.3. Accomplish Test and Evaluation. Testing of mission data software changes, minor system software changes, and minor hardware changes is conducted in accordance with the processes outlined in AFI 99-102, *Operational Test and Evaluation* and/or AFI 10-703. Testing of all system software and hardware changes, new systems and major upgrades is conducted under AFI 99-101, *Developmental Test and Evaluation*, AFI 99-102, AFMAN 99-112, *Electronic Warfare Test and Evaluation Process Direction and Methodology for EW Testing*, AFMAN 99-113, *Space Systems Test and Evaluation Process Direction and Methodology for Space*, and AFI 99-150, *Combat Air Forces Test and Evaluation*.. To be truly effective, EW testing should occur in the most operationally representative environment practical. AF FMP assets provide the most representative systems available.

3.1.3.3.1. AF/TE is responsible for the infrastructure required to support EW system operational and development test and evaluation IAW current DoD 5000.2-R for operational testing.

3.1.3.3.2. MAJCOMs/DRUs are responsible for conducting Force Development Evaluations to determine EW system shortfalls in operations and training.

3.1.3.3.3. AFOTEC is responsible for assessing operational effectiveness, suitability, and operational impacts.

3.1.3.4. Exercises. The culmination of EW effectiveness and integration is found in the conduct of exercises. Exercises should focus on total force application to derive force-level, and in some cases, AEF capability versus individual system effectiveness. Exercises can take on many levels of sophistication from base-level exercises, USAF Weapons School mission employment, mission rehearsals, or AEF preparation at Flag events as well as methods using modeling and simulation tools to determine affects of EW system performance on warfighting systems, tactics, and doctrine. Critical to all levels of exercise are realistic representations of the adversary. OPFOR activities, to the level appropriate, should be included in the exercising of EW systems.

3.1.3.4.1. MAJCOMs/DRUs are responsible for ensuring EW system evaluations are planned during their individual exercises.

3.1.3.4.2. ACC, as the Flag exercise manager, is responsible for capturing force level effectiveness shortfalls identified during Red Flag exercises.

3.1.3.5. Contingency Feedback and Lessons Learned. Thorough analysis of any EW operations can yield EW equipment effectiveness shortfalls that need to be addressed. These lessons learned should be documented, incorporated, and widely disseminated as soon as possible after they occur.

3.1.3.5.1. MAJCOMs/DRUs are responsible for documenting and staffing EW effectiveness shortfalls resulting from contingency operations.

3.1.3.5.2. AF/XO is responsible for consolidating, evaluating, and disseminating MAJCOMs/DRUs EW effectiveness shortfalls.

3.1.3.6. Standardize Effectiveness Data. The data gathered on the effectiveness of EW systems needs to be standardized, stored and made easily available for upgrade and operations planning. Organizations participating in EW operations must establish an accessible database system with procedures to provide comparison capability and periodic reporting.

3.1.3.6.1. AF/XO is responsible for designating a lead agency to establish and maintain a system with databases and procedures that capture HQ and subordinate unit information on EW operations effectiveness.

3.1.3.6.2. MAJCOMs/DRUs are responsible for providing their effectiveness data to the lead agency for their unique EW systems.

3.1.3.7. Assess Foreign Military Sales (FMS) Interoperability. Coalition operations create a challenge for battlefield interoperability. The EW community needs to maintain an awareness of foreign system capabilities to determine these interoperability issues in a coalition environment.

3.1.3.7.1. SAF/IA is responsible for making U.S. systems sold to foreign governments available for interoperability assessment.

3.1.3.7.2. AF/TE is responsible for directing U.S. system interoperability assessments.

3.1.3.7.3. AF/XO is responsible for non-FMS interoperability assessments.

3.1.3.8. Validate and Verify Training Simulator EW Capability. Periodic evaluation is required to ensure proper function and fidelity of training simulators EW capabilities, IAW 5600-series DoD and MAJCOM regulations and guidance.

3.1.3.8.1. National Air Intelligence Center (NAIC), the AF single manager for threat simulator validation and verification is responsible for reporting EW training system simulator effectiveness to the operating MAJCOM.

3.1.3.8.2. AF Information Warfare Center(AFIWC)/346 Test Squadron, the AF single manager for the threat portions of aircrew training devices validation and verification, is responsible for reporting EW system training effectiveness to the operating MAJCOM and AFMC

3.2. EW Systems Readiness: This section will address the readiness of EW systems for their operational purposes. The Plan step involves analyzing sustainment objectives and EW system readiness shortfalls to determine resource and maintenance requirements. In the Do step, the processes for logistic and maintenance programs are put into operation. These processes include daily maintenance and logistics support and asset allocation. In the Assess step, the readiness of our fielded EW systems are determined at wing and reported through MAJCOM and Air Force levels. Assessment is accomplished through separate, but complementary, measurements and evaluations.

3.2.1. Plan. This step involves analyzing readiness needs, developing readiness standards, and determining requirements for appropriate infrastructure to support assessments. The outcome of this step is a coherent plan and set of requirements that link sustainability planning, readiness reporting, and system availability to ensure the readiness of EW systems.

3.2.1.1. Establish readiness standards for EW systems based on operational requirements to ensure adequate numbers of fully mission capable systems.

3.2.1.1.1. AF/XO is responsible for oversight and implementation of basic and joint requirements.

3.2.1.1.2. MAJCOMs/DRUs are responsible for establishing their unique readiness standards.

3.2.1.2. Establish and document requirements for the necessary infrastructure to sustain EW readiness. Conduct assessment programs of infrastructure such as EW ranges and maintenance test sets.

3.2.1.2.1. MAJCOMs/DRUs are responsible for funding, fielding, and sustaining peculiar EW systems ground test sets, test procedures, and technician training.

3.2.1.2.2. AFMC is responsible for funding and sustaining common EW systems ground test sets and test procedures.

3.2.1.2.3. AF/IL is responsible for funding and fielding replacement of existing unsustainable common ground test sets until such time as planning and programming for support

equipment is decentralized to the MAJCOMs/FOAs/DRUs.

3.2.1.2.4. MAJCOMs/DRUs are responsible for funding, fielding, and sustaining appropriate equipment for conducting aerospace EW assessment programs along with any gained Air Reserve Component for deployment.

3.2.1.2.5. AF/XO is responsible for integrating and advocating MAJCOM requirements for EW assessment programs.

3.2.1.3. Analyze EW System Shortfalls. Determine the changes in EW system sustainment and assessment requirements that are needed to maintain readiness standards.

3.2.1.3.1. MAJCOMs/DRUs are responsible for documenting the requirements necessary to sustain readiness standards.

3.2.2. Do. This step defines and executes process actions that sustain EW systems and associated support equipment. It also defines and executes processes that allocate resources.

3.2.2.1. Sustain EW systems to meet readiness standards.

3.2.2.1.1. AF/XO is responsible for determining lead commands and the subsequent responsibilities for multi-command EW systems.

3.2.2.1.2. AFMC is responsible for the logistics and engineering support of hardware and software elements of EW systems and the associated support, training, and range equipment for those systems.

3.2.2.1.3. AFMC is responsible for identifying sustainability issues to the appropriate MAJCOM, with the exception of space systems, for action.

3.2.2.1.4. MAJCOMs/DRUs are responsible for funding appropriate upgrades and operating costs for EW system sustainment.

3.2.2.2. Allocate assets to equitably meet operational mission requirements.

3.2.2.2.1. AF/XO is responsible for designating the lead agencies for multi-command resource allocation and ensuring the equity of the processes.

3.2.2.2.2. ACC is responsible for allocating CAF Electronic Attack Pods and EW range assessment equipment.

3.2.2.2.3. MAJCOMs/DRUs will allocate command-specific resources.

3.2.3. Assess. The assessment step consists of processes that measure, track, and report EW system readiness. Readiness measurements are available from routine maintenance actions and readiness assessment inspections. These measurements identify types and quantities of equipment, availability, and status. Units should take advantage of all opportunities to exercise EW systems and support equipment to aid in determining their status. Maintenance actions, readiness assessments, and inspections are reported through different channels, but the data should be analyzed together to determine readiness status and future needs. The products of this step are accurate readiness data and shortfalls.

3.2.3.1. Assess and Report EW System Readiness. Periodically assess the actual readiness of EW systems through a combination of airborne and ground checks. The ground check is accomplished by unit personnel or visiting teams using end-to-end ground check equipment.

The airborne or space environment checks can also be done by unit personnel or visiting teams. Report results through MAJCOM for action with annual trend reports to AF/XO.

3.2.3.1.1. MAJCOMs/DRUs are responsible for establishing and funding EW assessment programs.

3.2.3.1.2. AETC is responsible for coordinating with the gaining MAJCOM for those EW systems they currently control which are combat coded.

3.2.3.2. Measure and Report Maintenance Actions. Day-to-day maintenance and operations actions provide essential data for assessing a unit's EW system readiness level.

3.2.3.2.1. MAJCOMs/DRUs are responsible for routine unit reporting procedures and intervals through the appropriate database for assessment.

3.2.3.2.2. AF/XO is responsible for integration of MAJCOM readiness data into an Air Force level report.

3.2.3.3. Inspections. The Air Force inspection program will evaluate and report on the readiness of EW systems and support equipment.

3.2.3.3.1. MAJCOMs/DRUs will establish inspection procedures to allow IG inspection validation of unit EW reporting.

4. EW Personnel (training and manning): Air Force personnel must be ready to employ EW at the strategic, operational, and tactical levels of warfare. Trained personnel must be familiar with EW to design and acquire systems, provide intelligence support, reprogram mission data and perform other critical support and planning tasks. Personnel readiness requires specialized knowledge and experience acquired at appropriate points in the career path. This EW knowledge and experience must be tracked, so personnel are readily identifiable for additional training opportunities or assignment as EW experts. At basic or unit levels, personnel will need the EW skills necessary to accomplish their unit's mission. As they progress, introductions to EW concepts will teach how they fit in the big picture and how they integrate EW with other missions and tasks. Some will become highly specialized in their particular weapon system/field while others will broaden their experience. AF/MAJCOM staffs and Air Operations Centers need EW trained personnel able to integrate EW capabilities at operational levels. Higher level planning will need personnel capable of integrating the full spectrum of EW into campaign plans. Senior officers well versed in the basic tenets of EW employment are needed as commanders of air operations during times of conflict and as decision-makers on equipping, sustaining and employing our forces to meet national objectives.

4.1. Plan. The planning step is a continuous process of analyzing shortfalls in needed EW knowledge and experience and developing or modifying requirements for EW training and manning. EW knowledge and experience needs are dispersed across many career fields at nearly every level. It is necessary to manage the creation, deployment, and career progression of this valuable expertise. The products of the planning step are identified requirements for skills, billets, tracking, career development and training programs.

4.1.1. Identify military and civilian positions requiring specialized EW knowledge and experience. These positions include, but are not limited to, pilot, navigator, EWO, Space operations, maintenance, intelligence, acquisition, engineering, and sustainment.

4.1.1.1. MAJCOMs/DRUs are responsible for identifying EW skills and number of billet

requirements for their own specific needs.

4.1.2. Manage the EW trained force to ensure adequate expertise is available for the required positions. EW expertise can be effectively managed if EW experience and training can be identified and tracked. Knowing the existing EW expertise allows planning for additional training and assignment to positions requiring EW expertise. Retention and promotion of personnel with valuable EW expertise will be enhanced by planning for the career progression of sufficient numbers of trained EW professionals.

4.1.2.1. AF/XO is responsible for EW personnel functional requirements to include following career progression.

4.1.2.2. AF/IL is responsible for EW maintenance personnel requirements to include following career progression.

4.1.3. Analyze shortfalls in EW training to establish requirements for needed modification.

4.1.3.1. AF/XO is responsible for integrating training shortfall requirements across commands.

4.1.3.2. MAJCOMs/DRUs are responsible for resolving training shortfalls where possible and semi-annually report the status of resolution to AF/XO. RCS: HAF-XOI(SA)0122. Report is designated emergency status code D. Discontinue reporting data during emergency conditions.

4.2. Do. High levels of proficiency are required for the employment of EW. Other specialties must be familiar with EW to design and acquire systems, provide intelligence support, reprogram mission data and perform other critical support and planning tasks. In response to requirements, formal and operational training programs and tracking systems are designed and executed. It is important that these programs are current with the latest worldwide threat. Many useful formal courses lie outside Air Force channels, such as, the Joint Air Operations Center (JAOC) initial qualification course and other intelligence and EW training courses. The product of this step is a sufficient supply of ready personnel trained in EW.

4.2.1. Formal Training: Generally, formal courses are outlined in the 36-series Air Force Instructions. The basic, advanced, and senior levels of formal training correspond to what is required in the tactical, operational, and strategic levels of warfare.

4.2.1.1. AF/XO is responsible for coordinating with non-Air Force EW training centers to ensure a cadre of personnel are trained to integrate EW at all levels.

4.2.1.2. Basic Level. This training provides a foundation of EW and its impact on the unit mission. It provides the knowledge necessary for the individuals to meet the EW responsibilities of their position.

4.2.1.2.1. AETC is responsible for appropriate introductory/undergraduate EW courses as required for each specialty requiring EW skills.

4.2.1.2.2. MAJCOMs/DRUs are responsible for formal EW training specific to their commands.

4.2.1.3. Advanced Level. This training focuses on the effective integration of EW at all levels of the campaign. It provides an in-depth knowledge of national assets, targeting, and joint/combined operations in order to provide the commander with integrated EW tailored to oper-

ational objectives.

4.2.1.3.1. AETC is responsible for providing advanced level academic training programs.

4.2.1.3.2. MAJCOMs/DRUs are responsible for formal advanced operational level training to maintain an adequate supply of properly trained EW personnel.

4.2.1.3.3. AFMC is responsible for EW Developmental Test and Evaluation training to maintain an adequate supply of properly trained EW developmental testers.

4.2.1.4. Senior Level. This upper level training should be focused on integration of the full spectrum of EW into the campaign plan.

4.2.1.4.1. AETC is responsible for providing senior level academic training programs.

4.2.1.4.2. MAJCOMs/DRUs are responsible for ensuring senior leaders have adequate EW training.

4.2.2. Operational Training. Training must have attainable objectives that are specific, relevant and necessary for combat. Personnel in operational, maintenance, acquisition, sustainment and intelligence positions will need EW training. Programs should include full use of training devices, local training operations, and exercises to hone individual EW skills. These skills will be required for individual system employment through platform interactions to integration of other EW systems and capabilities. EW training should be realistic and based on accurate adversary's capabilities. Timely feedback on actions and decisions is essential to all aspects of operational EW training. EW training is further refined in local and large-scale exercises.

4.2.2.1. Unit training: Rigorous proficiency training maintains the combat edge, increases unit experience, and provides increased knowledge essential to individual progress. This is daily, weekly, quarterly and exercise continuation training for all personnel at the wing and squadron level.

4.2.2.1.1. MAJCOMs/DRUs are responsible for unit training.

4.2.2.2. Advanced Training. This is experiential training for operational levels of warfare. It features practice and feedback in integrating EW in exercises such as Blue Flag and Red Flag and Distributed Mission Training (DMT).

4.2.2.2.1. ACC is responsible for including operational level EW training objectives in Flag exercises.

4.2.2.2.2. MAJCOMs/DRUs are responsible for advanced EW training specific to command missions.

4.2.2.3. Senior Training. This is experiential training as a senior staff member integrating EW at the campaign level at major or minor exercises (e.g. JFACC, J2 at Ulchi Focus Lens and Blue Flag etc).

4.2.2.3.1. ACC is responsible for including campaign level EW training objectives in appropriate Flag exercises.

4.2.2.3.2. MAJCOMs/DRUs are responsible for training senior officers in missions specific to the command.

4.2.3. Identify and track EW training and experience. Establish a system to ensure EW expertise is recorded and accessible.

4.2.3.1. AF/XO, in conjunction with functional managers, is responsible for operating an EW expertise tracking system for designated AFSCs.

4.2.3.2. AF/DP is responsible for advice and guidance regarding tracking of EW expertise..

4.2.4. Assign qualified personnel to established EW billets. Establish an EW manning system to ensure that fully trained EW personnel are assigned to positions identified for EW specialties.

4.2.4.1. MAJCOMs/DRUs are responsible for assigning qualified EW personnel.

4.3. Assess. The readiness of EW personnel is a combination of quality training and to assign EW trained personnel where they are needed. Assessments should involve all personnel with EW responsibilities (aircrew, maintenance, logistics, intelligence and staff). Exercises, evaluations, training feedback, and inspections are used to identify EW personnel readiness, shortfalls, and future needs. The products of the assess step are manning and identifying training shortfalls.

4.3.1. Assess the quality of EW training. This step involves processes that measure the availability and effectiveness of training. The products of this step are shortfalls in training programs.

4.3.1.1. Exercises provide feedback on the performance of participants. This feedback can be analyzed to assess training levels at the unit level, advanced level and senior level. Exercises will be designed to assess the EW readiness of the participants.

4.3.1.1.1. MAJCOMs/DRUs are responsible for EW training assessments in exercises.

4.3.1.2. Evaluations and inspections will identify training shortfalls. Evaluations include local and higher level stan/eval and IG inspections.

4.3.1.2.1. MAJCOMs/DRUs are responsible for EW training assessments in evaluations and inspections.

4.3.1.3. Formal Training Feedback should be designed to assess shortfalls in formal EW training.

4.3.1.3.1. AETC is responsible for obtaining feedback on course effectiveness.

4.3.2. Assess the manning of positions requiring EW expertise.

4.3.2.1. Manpower studies periodically revalidate authorized billets and training verses required billets and training.

4.3.2.1.1. MAJCOMs/DRUs are responsible for periodic EW manpower assessments.

4.3.2.2. Personnel studies periodically assess the assignment levels for the billets and the training qualifications of the assigned personnel.

4.3.2.2.1. MAJCOMs/DRUs are responsible for periodic EW personnel studies.

5. Forms Adopted. AF Form 1067, *Modification Proposal*, dated 1 Nov 99.

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

AFDD 1, Basic Aerospace Doctrine

AFDD 2-5, Information Operations

AFDD 2-5.1, Electronic Warfare Operations

AFDD 2-5.2, Intelligence, Surveillance, and Reconnaissance

AFI 10-301, Responsibilities for Air Reserve Component Forces

AFI 10-601, Mission Needs and Operational Requirements Guidance and Procedures

AFI 10-702, Psychological Operations

AFI 10-703, Electronic Warfare Integrated Reprogramming (EWIR)

AFI 10-704, Military Deception Program

AFI 10-705, Command and Control Warfare Procedures

AFI 10-707, Air Force Spectrum Interference Resolution Program

AFI 16-201, Foreign Disclosure of Classified and Unclassified Military Information to Foreign Government and International Organizations

AFI 36-2251, Guide for the Management of Training Systems

AFI 63-101, Acquisition System Procedures

AFI 63-1201, Assurance of Operational Safety, Suitability and Effectiveness

AFI 90-1102, AF Planning System

AFI 99-101, Developmental Test and Evaluation

AFI 99-102, Operational Test and Evaluation

AFMAN 57-1, Policies, Responsibilities, and Guidelines for Determining Materiel Requirements

AFMAN 99-112, Electronic Warfare Test and Evaluation Process Direction and Methodology for EW Testing

AFMAN 99-113, Space Systems Test and Evaluation Process Direction and Methodology for Space System Testing

(S) AFI 99-114, Foreign Material Program

AFI 99-150, Combat Air Forces Test and Evaluation

AFP 51-45, Electronic Warfare Principles

AFPD 10-7, Information Warfare

AFPD 10-11, Operations Security (OPSEC)

AFPD 10-6, Mission Needs and Operational Requirements

DoDD 3222.4, Electronic Warfare (EW) and Command and Control Warfare (C2W) Countermeasures

JP 3-51, Joint Doctrine for Electronic Warfare

Abbreviations and Acronyms

ACC —Air Combat Command

AETC —Air Education and Training Command

AEF —Aerospace Expeditionary Force

AFDC —Air Force Doctrine Center

AFDD —Air Force Doctrine Document

AFFMA —Air Force Frequency Management Agency

AFI —Air Force Instruction

AFIWC —Air Force Information Warfare Center

AFMAN —Air Force Manual

AFMC —Air Force Materiel Command

AFOTEC —Air Force Operational Test and Evaluation Center

AFPD —Air Force Policy Directive

AFRC —Air Force Reserve Command

AFSAA —Air Force Studies and Analysis Agency

AFSOC —Air Force Special Operations Command

AFSPC —Air Force Space Command

AIA —Air Intelligence Agency

AMC —Air Mobility Command

ANG —Air National Guard

AoA —Analysis of Alternatives

AOC —Air Operations Center

AQ —Deputy Chief of Staff for Acquisition

C2W —Command and Control Warfare

C4ISP —Command, Control, Communications, Computers, Intelligence Support Plan

CAF —Combat Air Forces

CONOP —Concept of Operations

DIA —Defense Intelligence Agency

DMT —Distributed Mission Training

DoD —Department of Defense
DP —Directorate for Personnel
DRU —Direct Reporting Unit
DT —Development Testing
EA —Electronic Attack
EC —Electronic Combat
EMCON —Emission Control
EP —Electronic Protection
ES —Electronic Warfare Support
EWIR —Electronic Warfare Integrated Reprogramming
FDE —Force Development Evaluation
FME —Foreign Materiel Exploitation
FMP —Foreign Materiel Program
FMS —Foreign Military Sales
HAF —Headquarters, Air Force
IA —International Affairs
IADS —Integrated Air Defense System
IL —Deputy Chief of Staff, Installations and Logistics
IR —Infrared
IW —Information Warfare
JAOC —Joint Air Operations Center
JCS —Joint Chiefs of Staff
JFACC —Joint Forces Air Component Commander
MNS —Minimum Needs Statement
NAIC —National Air Intelligence Center
NSA —National Security Agency
OCR —Operational Change Request
OFP —Operational Flight Program
OPFOR —Opposing Force
OPLAN —Operations Plan
ORD —Operational Requirements Document
OT —Operational Testing

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

SAF —Secretary of the Air Force

SC —Directorate for Communications

TE —Director, Test and Evaluation

TEMP —Test and Evaluation Master Plan

XO —Deputy Chief of Staff, Air and Space Operations

XOI —Directorate for Intelligence, Surveillance, and Reconnaissance

XOR —Directorate for Operational Requirements

XP —Deputy Chief of Staff, Plans and Programs