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SECRETARY OF THE AIR FORCE**

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Cyberspace

**SPECTRUM INTERFERENCE
RESOLUTION PROGRAM**

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This instruction implements AFPD 17-2, *Cyberspace Operations*, and AFPD 10-7, *Information Operations*, and describes the US Air Force (AF) Spectrum Interference Resolution Program. Provides Military Department guidance in accordance with Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3320.02F, *Joint Spectrum Interference Resolution (JSIR)*, CJCSI 3320.02E-1, *Classified Supplement to Joint Spectrum Interference Resolution (JSIR)*, and Chairman Joint Chiefs of Staff Manual (CJCSM) 3320.02D, *Joint Spectrum Interference Resolution (JSIR) Procedures*. Provides guidance for reporting, identifying, evaluating, and controlling electromagnetic interference to meet electromagnetic compatibility goals of the DOD Electromagnetic Environmental Effects (E3) program as defined in Department of Defense Instruction (DoDI) 3222.03, *DOD Electromagnetic Environmental Effects (E3) Program*. And also provides guidance for requesting Quick Fix Interference Resolution Capability (QFIRC) and related compatibility measurements and specialized engineering services. This publication applies to the Regular Air Force, Air National Guard, and Air Force Reserve. Major commands (MAJCOM), Air National Guard, field operating agencies, and direct reporting units may develop additional procedures for implementing this instruction, but all supplements must be routed to the Air Force Spectrum Management Office, Spectrum Support (AFSMO/SQ) for coordination prior to certification and approval. Refer technical questions about this publication to AFSMO/SQ, 6910 Cooper Avenue, Ft Meade, MD 20755-7088. The reporting requirements in this publication (para 3.6) are exempt from licensing in accordance with AFI 33-324, *The Air Force Information Collections and Reports Management Program*. Refer recommended changes and technical questions about this publication to AFSMO/SQ, 6910 Cooper Avenue, Ft Meade, MD 20755-7088, using AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 through the appropriate functional chain of command. The authorities to

waive wing/unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, Table 1.1 for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternatively, to AFSMO/SQ for non-tiered compliance items. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed in accordance with Air Force Web-RIMS Records Disposition Schedule located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm>. Refer to Attachment 1 for a glossary of references and supporting information.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include: interference resolution and reporting information and laser events in accordance with (IAW) Joint Staff guidance, interference resolution checklist, and updated reporting offline format for interference incidents.

1. Overview. CJCSI 3320.02F states DOD components will attempt to resolve interference affecting systems under their auspices at the lowest level possible within their chain of command. The Air Force Spectrum Interference Resolution program pertains to AF units experiencing interference at any time except when under the operational control of a Combatant Command. MAJCOMs with units located outside of the continental United States may report and resolve interference in accordance with geographical Unified Command procedures and can request AFSMO or QFIRC assistance, if needed. Report any AF interference experienced while supporting joint operations in accordance with Joint Task Force or Combatant Command procedures. Interference to space systems, including space, ground, and control segments shall be reported to your MAJCOM, IAW Air Force Space Command (AFSPC) supplemental guidance. The focus of the spectrum interference program is to resolve electromagnetic interference at the lowest organizational level. Submit all reports, initial, follow-on, and closure through the DOD Area Frequency Coordinator (AFC) and MAJCOM to AFSMO.

2. Electromagnetic Interference. Interference can be caused by enemy, neutral, friendly, or natural sources, and must be resolved on a case-by-case basis. Users must investigate and report as outlined in paragraph 3 using the recommended checklist in Attachment 2. (T-3)

2.1. Electromagnetic Interference from DOD Users. When the interference clearly results from another DOD user, attempt to resolve the interference at the lowest organizational level. After all local efforts have been exhausted to resolve the interference, request assistance through command spectrum management channels. Within their area of responsibility, installation commanders and DOD AFCs have the authority to implement radio silence/Cease Buzzer procedures for a suspected interfering activity until the interference issue can be resolved.

2.2. Electromagnetic Interference from Non-DOD Users. Request assistance through command spectrum management channels. Do not go directly to the Federal Communications Commission or any federal agency. AFSMO will coordinate with the Federal Commission and other government agencies at the national level if the investigation

shows that non-F equipment caused the interference. Within their designated areas, DOD AFCs are authorized to locally coordinate with any federal or non-federal agency to resolve interference at the lowest level possible.

2.3. Electromagnetic Interference from suspected hostile sources. The primary difference between hostile and non-hostile EMI is intent. In a non-operational environment, all incidents should initially be treated as non-hostile EMI until proven otherwise. EMI occurring in an operational environment is to be considered hostile until a determination can be made as to the source of the problem. EMI from hostile sources should be reported to the Joint Spectrum Center (JSC) IAW CJCSI 3320.02F. Military Satellite Communications incidents will be handled IAW the procedures outlined in CJCSM 3320.02 and SI 714.04, Satellite Communications.

3. Electromagnetic Interference Resolution.

3.1. The victim of the interference will contact the installation spectrum manager (ISM) or other point of contact identified by the higher headquarters where the interference has occurred. (T-2) The following actions should be initiated/accomplished prior to the requesting assistance from the higher headquarters spectrum manager per paragraph 3.2.

3.1.1. System operator will contact equipment maintenance personnel to determine if the interference is the result of maintenance actions or an equipment malfunction.

3.1.2. System operator will contact other known nearby units to ascertain if they are experiencing the same type of electromagnetic interference. This may aid in identifying the interference source.

3.1.3. When co-channel interference (interference between systems assigned similar frequency assignments) is suspected, the ISM will attempt to determine the location of frequency assignments that fall within the bandwidth of the victim receiver.

3.1.4. After exhausting all local resolution efforts, the ISM, DOD AFC, or MAJCOM Spectrum Management Office (SMO) can contact the 85th Engineering Installation Squadron (EIS) located at Keesler AFB MS directly for an initial assessment of the problem, obtain consultation, and recommendations regarding actions, coordination and techniques that can be used to identify the source and resolve the interference. AFSMO can also request national-level federal agency and/or JSC support, as appropriate.

3.2. Electromagnetic Interference Reporting.

3.2.1. Report Precedence. The ISM and MAJCOM SMO will work with the operator to determine precedence consistent with the urgency of the reported situation. If electromagnetic interference is suspected to be intrusion, or jamming, it should be reported immediately. All other interference events should be reported within two hours of the start of the event.

3.2.2. Security Classification of Electromagnetic Interference Reports. Units must evaluate the security sensitivity of the interference on the affected system and classify the report accordingly. (T-0) Security classification of interference incidents/reports is determined principally by a Security Classification Guide or stated source of the interference and the security sensitivity of the affected military system/operation. Stations located in combat areas or having a sensitive military mission generally must classify all

interference reports. Guidelines for classifying interference incidents are contained in CJCSI 3320.02F.

3.2.3. Report Format. Electromagnetic interference incidents shall be entered into the Joint Spectrum Interference-Online (JSIR-O) collaboration portal while resolution using local organic assets or host nation assistance is pursued. Entering the incident in the JSIR-O collaboration portal only provides situational awareness. It does not generate a request for technical support. The JSIR-O collaboration portal is located on the Secure Internet Protocol Router Network (SIPRNet) at <https://intelshare.intelink.sgov.gov/sites/jsir/default.aspx> and Joint Worldwide Intelligence Communication System (JWICS) at <https://intelshare.intelink.ic.gov/sites/jsir/default.aspx>. All spectrum managers involved with electromagnetic interference resolution will ensure they have proper access and permissions to access the JSIR-O portal to be able to establish alerts and to be able to edit and maintain reports. As an alternative method of reporting, interference reports can be reported by email. See Attachment 3 for Offline Report Format.

3.2.4. Report Addresses.

3.2.4.1. Air Force units submitting email notification of JSIR-O reports or offline interference reports through their chain of command to their higher headquarters (Wing, Numbered Air Force (NAF), MAJCOM SMOs) and DOD AFC as an action addressee, will provide an info copy to AFSMO NIPRNET: afsmoccworkflow@us.af.mil or

SIPRNET usaf.jbanafw.afsmo.mbx-cc-mbx@mail.smil.mil and 85th EIS

NIPRNET: 85eis.scym.1@us.af.mil and 85eis.scx.1@us.af.mil or

SIPRNET USAF.Keesler.81-TW.MBX.85-EIS-SCY@mail.smil.mil.

3.2.4.2. MAJCOMs can submit offline reports to the 85th EIS NIPRNET 85eis.scym.1@us.af.mil and 85eis.scx.1@us.af.mil or

SIPRNET USAF.Keesler.81-TW.MBX.85-EIS-SCY@mail.smil.mil as the action addressee with an info copy to JSC NIPRNET disa.sosc@mail.mil or SIPRNETdisa.sosc@mail.smil.mil. All requests for JSC support will be coordinated through AFSMO/SQ.

3.3. **Exercise Interference.** During exercise periods, coordinate all interference reports with the Electronic Warfare Cell in the Air Operations Center or Electronic Warfare Duty Officer. Do not submit an exercise-related report if jamming or intrusion activities are authorized during an exercise and determined to be the source of interference. Depending on geographical location, contact the appropriate Range Spectrum Manager or DOD AFC to determine if the interference is an approved part of the exercise.

3.4. **Exceptions to Reporting.** Do not report an incident when:

3.4.1. The interference is transient electromagnetic interference from natural sources (e.g., rain, lightning, etc.).

3.4.2. The interference only affects training frequencies assigned on a non-interference basis for training purposes.

3.4.3. Space weather (e.g., High Frequency fades, Polar Cap Absorption events, geomagnetic storming, etc.) are reasonably believed to be the cause of interference, or confirmed as the, cause of the interference. For assistance, notify the local weather unit of the interference to include date, time, location, system, and frequency impacts. The local weather unit can contact the 557th Weather Wing, as needed.

3.4.4. The interference is only experienced aboard intelligence, surveillance and reconnaissance aircraft aloft and is localized when mission equipment or payload equipment is turned on/off or used. In these cases, the interference must be reported to the flying unit's Director of Maintenance/Maintenance Officer and Director of Operations. The unit's Director of Maintenance/Maintenance Officer may report the electromagnetic interference to Air Force Materiel Command (AFMC/EN); the flying unit's Director of Operations must characterize the operational impact. The unit's Director of Maintenance/ Maintenance Officer must determine if unit maintenance or calibration will resolve the electromagnetic interference before notifying AFMC. If notified, AFMC must determine if any field or depot upgrades meant to resolve the interference are already scheduled. AFMC is responsible for reporting the electromagnetic inference to AFSMO if the incident is detected at a distance of more than 50 meters from the aircraft.

3.5. **Laser Event Reporting.** The National Air & Space Intelligence Center provides analytical assistance pertaining to hostile laser events against USAF and other Service's assets as requested. Also, as detailed in the Defense Intelligence Analysis Program, National Air & Space Intelligence Center determines the capability and performance of foreign airborne laser systems. Data collection on laser events is necessary to understand the nature of the threat and to develop appropriate countermeasures. All parties are urged to contact National Air & Space Intelligence Center's Electronic Analysis Squadron (NASIC/ACL) with questions at the following numbers: 937-257-4911 or DSN 787-4911.

4. Requesting Quick Fix Interference Reduction Capability and JSC Assistance.

4.1. Quick Fix Interference Reduction Capability (QFIRC). The QFIRC reduces or eliminates unintentional (non-hostile) electromagnetic interference associated with Air Force operational equipment. The QFIRC service analyzes and recommends corrective actions for reported interference problems. The 85th EIS provides QFIRC to all Air Force units. This unit can provide people and equipment to perform on-site direction finding and interference problem analysis. The 85th EIS will document corrective actions and give recommendations for solving interference problems in a formal report that will be forwarded to the requesting unit and to the DOD AFC, its parent MAJCOM, and AFSMO. QFIRC assistance must be coordinated through the involved MAJCOM spectrum management channels.

4.2. Joint Spectrum Center. The JSC maintains a central database of interference cases, resolutions, and lessons learned for all DOD and provides analytical and on-site assistance in resolving electromagnetic interference problems. JSC assistance will be requested by AFSMO after all Air Force resources are exhausted.

5. Roles and Responsibilities.

5.1. Director, Joint Spectrum Center:

5.1.1. Manages the DOD JSIR program and the JSIR collaboration portal IAW guidance from the Department of Defense, Chief Information Officer, and the Joint Staff, Director for Command, Control, Communications, and Computers/Cyber (C4)/(J-6). Maintains the DOD interference database and status tracking, to include characteristics and methods of resolution for each interference case reported and provides database access to Air Force units upon request.

5.1.2. Upon request, assists in the resolution of Electromagnetic Interference. If on-site assistance is necessary, the request must be initiated by AFSMO.

5.2. Directorate of Cyberspace Operations and Warfighting Integration (AF/A3C-A6C) and the Directorate of Operational Capability Requirements (AF/A5R) will:

5.2.1. Coordinate and recommend countermeasures, when applicable.

5.2.2. In conjunction with AFSMO, assist in the resolution of operational frequency deconfliction issues.

5.3. Commander, Air Force Spectrum Management Office will:

5.3.1. Act as the Air Force focal point for Spectrum Interference Program and EMI resolution guidance.

5.3.2. Coordinate all policy and instructional guidance with AF/A3C-A6C and AF/A5R.

5.3.3. Act as the focal point for electromagnetic interference problems when the proposed solution involves changes in frequency assignments. (T-2)

5.3.4. Submit U.S./Canada and U.S./Mexico radio interference reports as directed in the National Telecommunications and Information Administration (NTIA) Manual of Regulations and Procedures for Federal Radio Frequency Management. (T-0)

5.4. Commander, Air Force Materiel Command and Commander, AFSPC Space and Missile Systems Center (SMC) will:

5.4.1. Review and coordinate electromagnetic compatibility standards with other agencies, in addition to developing military compatibility standards and specifications for the design, development, procurement, production, test, and measurement of electrical, electronic, and telecommunication equipment.

5.4.2. Design equipment for maximum suppression of undesirable emissions and optimum rejection of potential electromagnetic interference.

5.4.3. Conduct electromagnetic compatibility studies and analyses to ensure that equipment in the design or development stages will meet or exceed established specifications and standards and achieve compatibility in its intended operational environment.

5.4.4. Provide funds for managing and procuring common test equipment required to support electromagnetic interference reduction efforts and centrally procured QFIRC items.

5.5. Commander, 85th EIS will:

5.5.1. Act as the technical focal point for the QFIRC and electromagnetic interference measurements.

5.5.2. Maintain an electromagnetic compatibility office to analyze programs for electronic facilities, identify interference problems and where possible, make or recommend planning adjustments to eliminate or reduce EMI problems. (T-2)

5.5.3. Establish and maintain the QFIRC program for the Air Force. (T-2) QFIRC services include:

5.5.3.1. Receive and analyze reports of interference to operational equipment and systems and providing technical assistance when requested. Technical assistance will include, electromagnetic environmental effects studies, electromagnetic compatibility and interference consultation, on-site interference investigations including direction-finding measurements to locate the source(s) of interference, as well as initiating and recommending corrective actions to resolve interference problems.

5.5.3.2. Procure and maintain reasonable quantities of interference reduction devices to resolve operational interference problems. Items will be provided directly to the unit experiencing interference when the items will be effective in reducing or eliminating the problem.

5.5.3.3. Advise all working levels of the other military Services, nonmilitary government agencies, and civilian users of electronic equipment, both domestic and foreign, on methods to eliminate or reduce interference problems, where Air Force equipment is involved.

5.5.3.4. Upon request, provide technical advice and measurement assistance to AFSMO and MAJCOMs on electromagnetic interference problems during equipment and systems acquisition. The requesting organization normally funds assistance. If funds are not available, the requesting organization will need to address funding through their higher headquarters.

5.5.3.5. Advise HQ AFMC and AFSPC SMC of interference trends or developments that require changes in maintenance procedures, requirements for new equipment, or modifications to present equipment.

5.5.3.6. Review and coordinate on compatibility standards, as necessary, with other agencies and assist HQ AFMC and AFSPC SMC in the development of adequate and useful military standards and specifications for the design, development, procurement, production, test and measurement of electromagnetic spectrum-dependent equipment.

5.5.3.7. Provide Air Force activities with measurement services to analyze and resolve electromagnetic interference problems. These services include prototyping and testing various configurations of equipment to determine the best installation criteria when parameters cannot be obtained from equipment design specifications or available test data.

5.5.3.8. Procure, develop, and employ reliable and accurate measurement techniques and equipment with the sensitivity, accuracy, range, and stability necessary to provide

valid electromagnetic measurement data on Air Force electronic equipment and systems to evaluate electromagnetic compatibility and interference, and providing measurements and specialized engineering services as outlined in this instruction.

5.5.3.9. Maintain an online reference library of technical information on actions taken to resolve electromagnetic interference problems, and provide available information to the JSC to be included in the JSIR database.

5.5.3.10. Publish a user/maintainer technical guide for resolving interference at the local level.

5.6. MAJCOM, Field Operating Agencies, and Direct Reporting Unit commanders/directors will:

5.6.1. Adhere to the policy of the Air Force spectrum interference resolution program.

5.6.2. Identify electromagnetic compatibility and interference requirements and request the appropriate technical assistance to perform the required analysis, measurements and evaluations.

5.6.3. Supplement this instruction, as necessary, or provide a policy letter to establish reporting channels and office of primary responsibility at each level of command. Supplements must not impede the reporting of EMI or restrict the direct communication of policy between subordinate units and Air Force engineering agencies that provide QFIRC consulting and technical support, measurements and specialized engineering services. Coordinate command supplements with AFSMO and send a copy to the 85th EIS, 670 Maltby Hall Drive, Ste 234, Keesler AFB MS 39534-2633.

5.6.4. Provide a command point of contact for electromagnetic compatibility and interference to the 85th EIS. (T-2)

5.6.5. Ensure that electromagnetic interference is reported in accordance with the EMI reporting policy and procedures.

5.6.6. Assist subordinate organizations with electromagnetic interference education and training, and the development of local procedures and checklists.

5.6.7. Assist subordinate units in identifying, resolving and reporting electromagnetic interference.

5.6.8. Determine if the frequency assignments involved in the interference are in compliance with respective spectrum certification and assignment parameters.

5.6.9. Ensure that electromagnetic compatibility requirements are considered before assigning frequencies.

5.6.10. Coordinate actions to resolve interference.

5.7. Installation Spectrum Managers will:

5.7.1. Implement a base-level interference resolution program using the guidance contained in this AFI or provided by the respective MAJCOM/NAF as applicable. (T-3)

5.7.1.1. Resolve electromagnetic interference resulting from frequency assignment problems through coordination with DOD AFCs, as required, MAJCOMs, and other

agencies and foreign countries, through the appropriate Combatant Command, as required.

5.7.2. With assistance from the higher headquarters, develop a spectrum interference resolution training program and local interference reporting checklists for all installation spectrum users on all aspects of documenting, analyzing, and reporting.

5.7.3. Assist all victims/users in the completion of the actions noted in Attachment 2 and prescribed offline reporting format and submission channels contained Attachment 3.

5.7.4. Ensure victim system is operating with a valid frequency assignment and within the specified technical parameters of the assignment. (T-0)

5.7.5. Coordinate all QFRIC assistance request through MAJCOM spectrum management channels.

BRADFORD J. SHWEDO, Lt Gen, USAF
Chief, Information Dominance and
Chief Information Officer

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

DODI 3222.03, *DOD Electromagnetic Environmental Effects (E3) Program*, Change 1, 8 January 2015

CJCSI 3320.02F, *Joint Spectrum Interference Resolution (JSIR)*, 8 March 2013

CJCSM 3320.02D, *Joint Spectrum Interference Resolution (JSIR) Procedures*, 3 June 2013

CJCSI 3320.02E-1, *Classified Supplement to Joint Spectrum Interference Resolution (JSIR)*

Joint Publication 3-13.1, *Electronic Warfare*, 8 February 2012

AFPD 10-7, *Information Operations*, 4 August 2014

AFPD 17-1, *Information Dominance and Management*, 12 April 2016

AFPD 17-2, *Cyberspace Operations*, 12 April 2016

AFI 33-324, *The Air Force Information Collections and Reports Management Program*, Change 1, 18 December 2014

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFMAN 33-363, *Management of Records*, 9 April 2015

Prescribed Forms

None

Adopted Forms

AF Form 847, Recommendation for Change of Publication

Abbreviations and Acronyms

AFMC—Air Force Materiel Command

AFSMO—Air Force Spectrum Management Office

AFSPC—Air Force Space Command

CJCSI—Chairman Joint Chiefs of Staff Instruction

CJCSM—Chairman Joint Chiefs of Staff Manual

DOD—Department of Defense

E3—electromagnetic environmental effects

EIS—Engineering Installation Squadron

IAW—in accordance with

ISM—installation spectrum manager

JP—Joint Publication

JSC—Joint Spectrum Center

JSIR—joint spectrum interference resolution

JSIR-O—joint spectrum interference-online

MAJCOM—major command

NAF—Numbered Air Force

NTIA—National Telecommunications and Information Administration

QFIRC—quick fix interference reduction capability

RDS—records disposition schedule

SMC—Space and Missile Center

SMO—Spectrum Management Office

Terms

Electromagnetic environmental effects (E3)—The impact of the electromagnetic environment upon the operational capability of military forces, equipment, systems, and platforms. It encompasses all electromagnetic disciplines, including electromagnetic compatibility and electromagnetic interference; electromagnetic vulnerability; electromagnetic pulse; electronic protection, hazards of electromagnetic radiation to personnel, ordnance, and volatile materials; and natural phenomena effects of lightning and precipitation static. (JP 1-02/JP 3-13.1)

Electromagnetic Compatibility—DoD: The ability of systems, equipment, and devices that use the EM spectrum to operate in their intended environments without causing or suffering unacceptable or unintentional degradation because of EM radiation or response. (JP 3-13.1).

Electromagnetic interference—Any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics and electrical equipment. It can be induced intentionally, as in some forms of electronic warfare, or unintentionally, as a result of spurious emissions and responses, intermodulation products, and inadequate EMS management. (JP 3-13.1)

Attachment 2

CHECKLIST FOR EMI CHARACTERIZATION AND RESOLUTION OF EMI AT THE LOCAL LEVEL**Table A2.1. Checklist for EMI Characterization and Resolution of Electromagnetic Interference at the Local Level.**

To assist users and spectrum managers at the local level, the following checklist can be used to identify and potentially resolve interference. This checklist should be implemented prior to or in conjunction with submitting an Air Force spectrum interference report through the appropriate chain of command to the MAJCOM.		
STEP	ACTION	COMPLETE Y/N
1	Start a log and collect as much information about the EMI as possible.	
2	Record what interference sounds like. If appropriate measurement equipment is available, attempt should be made to quantify the characteristics of the interference signal. These characteristics include the interfering source center frequency, bandwidth, relative amplitude, modulation, direction of interference, time of occurrence, and any other characteristics that can be obtained.	
Geographical Information		
3-1	Check with other units in the geographical area to determine the area affected.	
3-2	Verify exact location of receiver using GPS, if available.	
4	Determine interference start and stop times.	
5	Have maintenance personnel: <input type="checkbox"/> Ensure all connectors are tight. <input type="checkbox"/> Ensure antenna cables are in good condition. <input type="checkbox"/> Ensure equipment is operating IAW technical manual specifications and frequency assignment parameters.	
6	Verify antenna is on the correct azimuth and elevation.	
Environment Information		
7-1	Contact nearby units to determine if there is any recently installed equipment.	
7-2	Contact the Electronic Warfare Officer to determine if there is any local jamming or exercise occurring in the local area. If air assets are suspect, validate with spectrum analyzer and have the Electronic Warfare Officer validate.	
7-3	Check with equipment and facility maintenance personnel to determine if the interference is the result of maintenance actions or an equipment malfunction. This should include non RF equipment that can cause spark-type interference used to support the operation of RF equipment (e.g., thermostat-controlled devices, electric motors, welders, etc.)	

7-4	If possible, conduct a site survey looking for other users and environmental considerations that may impact affected emitter.	
7-5	Check to see if construction is being conducted in the immediate area.	
7-6	Determine whether the natural environment is the cause	
Frequency Assignment Information		
8-1	Verify through the ISM or MAJCOM SMO that a valid frequency assignment authorization exists.	
8-2	If no assignment exists, cease transmission and request valid frequency.	
8-3	If valid assignment exists, change to alternate frequency and determine if interference is present.	
8-4	If a valid assignment exists and the interference goes away after changing to an alternate frequency, submit an interference report through your MAJCOMSMO.	
8-5	Where co-channel or adjacent channel interference is suspected (i.e., the interfering signal overlaps the operating bandwidth of the victim receiver), check with local and area frequency management personnel to determine if other locally operated equipment has been recently assigned a co-channel/or adjacent channel frequency.	
General Characterization		
9	<p>If resources are available, system operations and equipment maintenance personnel will attempt to determine the bandwidth, relative amplitude, and modulation of the electromagnetic interference with a spectrum analyzer. Find the approximate bandwidth by varying the receiver frequency to determine the affected frequency band.</p> <p>Determine if the following are true to help characterize the interference:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The interfering signal is encrypted. <input type="checkbox"/> The interfering signal is understandable, e.g., voice. <input type="checkbox"/> Note all settings (demods, bandwidths, gains, etc.) of your receiver equipment that enabled you to hear intelligible information on the interfering signal. <input type="checkbox"/> The interference is due to a steady receive key indicating equipment failures, glitches, or lapses in operational discipline. 	

Attachment 3**OFFLINE REPORT FORMAT****Figure A3.1. Offline Report Format.**

Since all reported interference reports should be submitted to the DOD central repository managed by the JSC at <https://intelshare.intelink.sgov.gov/sites/jsir/default.aspx>, the following reporting format will be used to facilitate the process and should be reported by any electronic means possible, email being the preferred method.

All interference will be reported regardless of type, frequency, occurrences and source. This will supplement the database, which can be used to determine trends in area of interference.

SECURITY CLASSIFICATION

Subject: (Security Classification) AIR FORCE SPECTRUM INTERFERENCE
RESOLUTION REPORT - INITIAL, FOLLOW-UP, or FINAL

MESSAGE TEXT:

Exercise Name (if applicable)

Operation Name/Plan Originator & Number

Activity Type (contingency, exercise, or project)

Originator & Office Code/000-00// (where 000- 00 is your local tracking number)

POC/Last Name, First, Middle Initial/Grade & Title/Organization & Office Code/Street
Address/Telephone (DSN)/Telephone (Comm)/e-mail (SIPRNET)/(NIPRNET)//24/7 POC
Information.

REMARKS:**1. DESCRIPTION OF AFFECTED SYSTEM****A. FREQUENCY(IES) AFFECTED:**

B. FREQUENCY ASSIGNMENT NUMBER: The Air Force serial number or unique identification number of the frequency assignment being affected by the interference, if known.

C. NETWORK(S)/CIRCUIT(S) AFFECTED: Network circuits affected by the interference.

D. LOCATION OF SYSTEM(S): Location of system(s) affected by the interference, i.e., latitude, longitude, and site name.

E. SYSTEM AFFECTED: Include function, name, nomenclature, manufacturer with model number, or other system description. If available, include equipment characteristics of the

affected receiver, such as receiver bandwidth, antenna type, antenna size, and information about any installed frequency band filters.

F. OPERATING MODE: Operating mode of the affected system, if applicable (frequency agile, pulse Doppler, search, upper/lower sideband, etc.).

G. NETWORK CONTROL STATION & PRINCIPAL USER(s) and PRIORITY NUMBER: Network control station and principal users. This information may be used to determine the priority of the restoration attempts.

H. OTHER STATIONS/UNITS EXPERIENCING INTERFERENCE:

Other stations or units affected by the interference; include geographical location, coordinates, and line-of-bearing and distance from reporting site.

2. CHARACTERIZATION OF Electromagnetic Interference

A. INTERFERENCE FREQUENCY, BANDWIDTH, AND SIGNAL STRENGTH: Record the frequency and bandwidth (in kHz, MHz, etc.) at which the interference is most apparent and the EMI signal strength (in dBm, dBW, etc.).

B. INTERFERENCE CHARACTERISTICS: CONTINUOUS, INTERMITTENT, RANDOM, or CHARACTERISTIC pattern; VARIED or CONSTANT amplitude; NOISE and/or PULSED. Include any other information that may assist in determining the source of the problem.

C. PERFORMANCE EFFECTS. Description of interference effects on performance, e.g., one or more of the following: usable or unusable, garbled, frame loss, steady receive indication (SRI), reduced range, false targets, reduced intelligibility, data errors, etc.

D. CIRCUIT RELIABILITY: Describe the quality of user circuit as affected by the interference as observed through the symptoms, e.g., frequency USABLE or UNUSABLE for DATA or VOICE, GARBLED, FRAME LOSS, SRI, etc.

E. INTERFERENCE CAUSE(S) & SOURCE(S): For example, solar weather, atmospheric conditions, terrestrial or structural blockage, stuck carrier or cryptographic phase, another unit (include unit name, geographical coordinates, and line-of-bearing and distance from reporting site, if available).

F. DATES AND TIMES: Give the dates and times of the interference commencement and cessation or indicate "ongoing." Indicate whether the duration of the interference is continuous or intermittent, the approximate repetition rate of the interference, and whether the amplitude of the interference is varying or constant. Indicate if the interference is occurring at a regular or irregular time of day and if the occurrence of the interference is coincident with any ongoing local activity.

3. RESOLUTION

A. SPECIFIC ACTIONS TAKEN TO MITIGATE, NULLIFY, IDENTIFY SOURCE(S) OF & RESOLVE INTERFERENCE: Include clear, concise description of steps taken to mitigate or nullify, isolate source(s) of, and resolve interference. Add additional narrative of anything else known or suspected about interference that might be helpful in technical analysis.

Specify whether assessment is based on technical measurement, observation, or estimation.

B. Electromagnetic interference STATUS: Indicate whether the problem has been identified and resolved.

C. REQUEST FOR RESOLUTION ASSISTANCE: Indicate if technical assistance is desired or anticipated; request should be directed to operational chain of command. Include recommendation for specific action.

4. ADDITIONAL INFORMATION: Include anything not addressed in previous paragraphs and include declassification instructions as appropriate.