

**BY THE ORDER OF  
THE BASE COMMANDER**

**GRANDFORKS INSTRUCTION 33-102**

**1 MAY 1995**



**Communications and Information**

**RADIO FREQUENCY SPECTRUM  
MANAGEMENT**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements AFI 33-118, Radio Frequency Spectrum Management. It details responsibility and provides policy, guidance and procedures for local management of the electromagnetic spectrum. It tells how to obtain frequency support for new and existing systems. It applies to all AMC and tenant unit frequency users assigned or attached to Grand Forks AFB.

**SUMMARY OF REVISIONS**

This instruction has been revised and updates the responsibilities for all base frequency management procedures. Additionally, policies and procedures were updated and explained more thoroughly to coincide with AFI 33-118.

**1. Terms Explained:** **Attachment 1** is a glossary of frequency management terms. **Attachment 2** Unit Frequency Manager Checklist

**2. General .**

2.1. Air Force and civilian need for frequencies at Grand Forks AFB far exceeds the availability of frequencies that can be used in this area. As a result, effective frequency management is absolutely necessary to meet mission objectives. This regulation establishes responsibilities and procedures for managing the Frequency Management Program at the local level.

**3. Responsibilities.**

3.1. The Base Communications-Computer Systems Officer, on behalf of the installation commander, appoints a staff member to serve as the Base Frequency Manager.

3.2. The Base Frequency Manager keeps frequency records, ensures necessary frequency reviews are done, coordinates frequency actions as required, and authorizes use of radio frequencies on Grand Forks AFB.

3.3. Organization Commanders appoint a Unit Frequency Manager.

3.4. Unit Frequency Managers:

3.4.1. Make sure the operating activity keeps a Radio Frequency Authorization (RFA) on file for each frequency used.

3.4.2. Make sure the operation of equipment complies with authorized limitations and tolerances.

3.4.3. Make sure necessary publications are available and followed.

3.4.4. Act promptly to resolve deficiencies causing interference.

3.4.5. Review assigned frequencies at least annually to make sure they are current by using the checklist found in [Attachment 2](#).

3.4.6. Request the minimum transmitter power and antenna gain or height necessary to ensure satisfactory service.

3.4.7. Report Spectrum Interference Resolution (SIR) incidents according to AFI 10-707, Spectrum Interference Resolution Program.

3.5. Radio users are responsible for:

3.5.1. The proper operation of all radios.

3.5.2. Ensuring that any equipment not working properly is turned in for maintenance.

3.5.3. Reporting SIR incidents to the Unit Frequency Manager.

#### **4. Procedures.**

4.1. New frequency requests will be submitted IAW AFI 33-118 to the Base Frequency Manager at least 6 months prior to the required operational date.

4.2. Short notice requests will require strong, specific justification and will be submitted with as much lead-time as possible to the Base Frequency Manager.

4.3. Consideration should be given to sharing an already existing frequency wherever possible.

4.4. New equipment must be approved by the Communications Systems Requirements Board before a request for a new frequency can be processed.

4.5. Tenant units assigned to Grand Forks AFB will:

4.5.1. Request radio frequencies through their parent MAJCOM.

4.5.2. Coordinate all requests with the Base Frequency Manager prior to submission.

4.5.3. Submit a copy of the frequency approval to the Base Frequency Manager.

4.6. Every 5 years the USAF Frequency Management Center conducts a thorough review of each frequency assignment. The Base Frequency Manager will initiate the 5-year review process. The Unit Frequency Manager will provide all information necessary to insure the review is complete.

- 4.7. Submit requests for deletions of authorized frequencies by letter to the Base Frequency Manager.
- 4.8. A valid assessment/license to operate must exist before a radio frequency can be used.
- 4.9. Applicable international, government, and service regulations will apply to all radio frequency users.
- 4.10. Operation is authorized provided use of the frequency will not result in interference to other users on the same or adjacent frequencies with prior operating authorization.
- 4.11. Transmitter power will under no circumstances exceed the maximum authorized.

**5. Reporting Incidents of Spectrum Interference Resolution (SIR).**

- 5.1. A SIR incident occurs when there is an interruption in data transfer. To define a SIR incident, the following definition is provided:
  - 5.1.1. Electromagnetic Interference (EMI) - Any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics/electrical equipment. It can be induced intentionally, as in some forms of electronic warfare, or unintentionally, as a result of spurious emissions and responses, inter-modulation products, and the like.
  - 5.1.2. Radio users who experience SIR should report it immediately to their Unit Frequency Manager. Keep in mind when reporting SIR that all incidents except interference from a source known to be friendly to the United States are classified a minimum of confidential.
- 5.2. All SIR incidents will be classified and reported IAW AFI 10-707.

JERRY L. PIPPINS JR., Lt. Col, USAF  
Commander

**Attachment 1****GLOSSARY OF FREQUENCY MANAGEMENT TERMS***Terms*

**Airport Surveillance Radar (ASR):**—Radar displaying range and azimuth normally employed in a terminal area to aid in approach and departure control.

**Allocation:**—The designation of frequency band for use in performing specific functions or services.

**Antenna:**—Any structure or device used to collect or radiate electromagnetic waves.

**Assigned Frequency:**—The frequency coinciding with the center of the frequency band in which the station concerned is authorized to operate.

**Assignment:**—Authorization given for a radio station to use a radio frequency channel under specific conditions.

**Base Station:**— In the land mobile service, a land station carrying on a service with land mobile stations.

**Dipole:**—A straight, center-fed, one-half wave length antenna.

**Duplex Operations:**—A method of operation of a communications circuit in which each end can simultaneously transmit and receive.

**Electronic Countermeasures (ECM):**—A division of electronic warfare involving actions taken to prevent or reduce an enemy's effective use of the electromagnetic spectrum

**Emission:** —Radio waves radiated into free space by a radio transmitter.

**Glidescope:**—A system of vertical guidance embodied in the Instrument Landing System (ILS) which indicates vertical deviation of the aircraft from its optimum path descent.

**Instrument Landing System (ILS):**—A radio navigation system, which provides aircraft with horizontal and vertical guidance just before and during landings.

**Interference:**—A disturbance in radio reception caused by undesired signals or stray currents from electrical devices.

**Localizer:**—A system of horizontal guidance embodied in the ILS, which indicates horizontal deviation of aircraft from its optimum path of descent along the axis of the runway.

**Precision Approach Radar (PAR):**—A rapid-scanning radar system that aircraft on approach to the runway are presented on radar displays in terms of desired glidepath and distance from touchdown point of the runway.

**Radar:**—systems using beamed and reflected electromagnetic energy for detecting and locating objects and for measuring distances, velocity, or altitude.

**Radio Wave:**—Any electromagnetic wave of a frequency lower than 3000 GHz.

**Repeater:**—In general, a device that amplifies, reshapes, or re-times a received signal for further transmission.

**Simplex Operations:**—A method of operation in which communications between two stations take place in one direction at a time.

**Tactical Air Navigation (TACAN):**—A NAVAID operating in frequency bands 962-1024 MHz.

**Watt:**—Practical unit of electrical power.

Attachment 2

ALL PURPOSE CHECKLIST

		PAGE 1 OF 1 PAGES	
TITLE/SUBJECT/ACTIVITY/FUNCTIONAL AREA		OPR	DATE
Unit Frequency Manager Checklist		319 CS/SCML	
<p>1. Is an authorization document RFA on file for each radio frequency used? Ref: GFAFBI 33-102, para <b>3.4.1.</b></p> <p>2. Does your radio equipment comply with the authorized power limitation and tolerance for each frequency? Ref: GFAFBI 33-102, para <b>3.4.2.</b></p> <p>3. Are all necessary publications concerning Radio Frequency Management available?</p> <ul style="list-style-type: none"> <li>a. AFI 10-707</li> <li>b. AFI 33-</li> <li>c. GFAFBI 33-102</li> <li>d. Unit Radio Frequency Handbook</li> </ul> <p>Ref: AFI 33-118</p> <p>4. Have all assigned radio frequencies been reviewed at least annually, with frequencies no longer needed identified to the Base Frequency Manager? Reft GFAFI 33-102, para <b>3.4.5.</b></p> <p>5. Have all frequency actions been coordinated with the Base Frequency Manager? Reft AFI 33-118</p> <p>6. Has the unit commander appointed, in writing, a Unit Frequency Manager? Has a copy of the appointment letter been sent to the Base Frequency Manager? Ref: GFAFBI 33-102, para 3.3.</p> <p>7. Has all radio equipment not working properly been turned in for maintenance? Ref: GFAFBI 33-102, para <b>3.5.2.</b></p> <p>8. Is a log containing pertinent information on SIR incidents kept on file? The log will include time of occurrence, action taken to isolate or correct the incident, and any other data helpful in investigating or resolving the incident.</p> <p>9. Have initial SIR reports been prepared? Reft GFAFBI 33-102, para 6.</p> <p>10 Have supplemental and final SIR reports been submitted as necessary?</p>			
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