

**Forest Service Handbook  
National Headquarters - Washington Office  
Washington, DC**

**Forest Service Handbook 6609.14 – Telecommunications Handbook  
Chapter 40 - Radio**

**Amendment:** 6609.14-1995-1

**Effective date:** May 26, 1995

**Duration:** This amendment is effective until superseded or removed.

**Approved by:** Jack Ward Thomas, Chief

**Date approved:**

**Responsible Staff:**

**Last Change:**

**Superseded Document(s):** 6609.14, Contents; 6609.14,0 Code Contents; 6609.14,0 Code; 6609.14,10 Contents; 6609.14,10; 6609.14,20 Contents; 6609.14,20; 6609.14,20,Ex.06; ID 6609.14-95-1; 6609.14,30 Contents; 6609.14,30; 6609.14,40 Contents; 6609.14,40; 6609.14,41.3,Ex.01; ID 6609.14-95-2; 6609.14,50 Contents; 6609.14,50; 6609.14,60 Contents; 6609.14,60; 6609.14,80 Contents; ID 6609.14-94-1; Amendment 6609.14-94-2, May 24, 1994; Amendment 6609.14-94-1, May 24, 1994; Amendment 6609.14-91-1, September 3, 1991

**Digest:** Following is an explanation of the changes throughout the directive by section.

**01:** Incorporates authorities into FSM 6640.1 and adds cross reference to that section.

**02:** Incorporates objectives into FSM 6640.2 and adds cross reference to that section.

**03 & 04:** Establishes code for Policy and Responsibility.

**05:** Adds the definitions for the terms: Compressed Video Transmission Service (CVTS); Emergency; Frequency Management; Local Access Transport Area (LATA); Local Area Network (LAN); Metropolitan Area Network (MAN); T-1; Telecommunications; Ultra High Frequency (UHF); Very High Frequency (VHF); and, Wide Area Network (WAN);

Removes the definitions for the terms: Answering Device; Answering Service; Auto Dialers; Business Line; DB4; Dedicated Line; Features; Key Telephone System; Operational Plan; Pager

Service; Speakerphone; and, Subsystem. These terms were removed because they are no longer specifically addressed in this handbook.

Revises the term Radio Frequency Authorization (RFA) to Radio Frequency Assignment (RFA) and Voice Mail to Voice Processing to more accurately reflect their application.

**06:** Removes section on Program Management.

**10.3:** Removes policy direction from this section and incorporates it in FSM 6640.6-6640.62.

**11:** Revises caption from Strategic Plan Format to Strategic Plan.

**12:** Revises caption from Tactical and Operational Plan Format to Tactical Plan.

**12.1:** Incorporates and revises direction on guidelines (formerly found in section 13.1).

**13:** Revises caption from Planning to Telecommunications Systems Planning.

**13.1:** Revises caption from Guidelines to Radio Communications Planning.

**13.12:** Removes direction on voice communications planning. (This direction is incorporated into section 13.2).

**13.13:** Removes direction on data communications planning. (This direction is incorporated into section 13.3).

**13.2:** Incorporates direction on voice communications planning (formerly found in section 13.12).

**13.3:** Incorporates direction on data communications planning (formerly found in section 13.13).

**13.4:** Establishes direction on video communications planning.

**13.41:** Establishes direction on cost analysis.

**14:** Establishes section for exhibits.

**20.42:** Revises responsibilities of the Washington Office, Director of Information Systems and Technology to include annual delegation of technical approval authority and thresholds.

**20.62:** Revises technical approval levels and removes technical approval authority thresholds which has been incorporated into section 20.42.

**21.1:** Corrects terms in radio frequency assignments section.

**22:** Revises direction on voice to reflect usage of FTS2000.

**22.8:** Establishes direction for voice processing.

**22.9:** Establishes direction for shared voice services.

**24:** Establishes direction for video conferencing.

**25:** Incorporates ID 6609.14-95-1, revises exhibit numbering, and adds exhibits on documentation requirements for cost thresholds (ex. 02) and local area network (LAN) requirements (ex. 05).

**30.1:** Revises and updates authority references.

**31:** Revises caption from Forest Service Standards to Standards.

**31.1:** Revises caption from Data Communications to Radio Communications and adds related direction.

**31.11-31.14:** Establishes pertinent direction on radio communications and incorporates direction formerly provided in sections 31.21-31.24d.

**31.2:** Revises caption from Radio Communications Equipment to Voice Communications which is reserved for use by field offices for supplementation purposes.

**31.21-31.24d:** Removes codes and captions concerning radio communications equipment. This direction has been incorporated in sections 31.11-31.14.

**31.3:** Revises caption from Telephone Equipment to Data Communications and adds related direction.

**31.4:** Establishes direction on video communications.

**40:** Incorporates ID 6609.14-95-2.

**41:** Revises direction throughout on frequency management.

**41.3:** Revises direction on national frequencies. Changes authorizations listed in exhibit 01.

**41.31:** Incorporates direction on air safety guard, air tactics, local air, and aeronautical multicom (formerly set forth in sections 41.31a-41.31d).

**41.31a-41.31d:** Moves direction on air safety guard, air tactics, local air, and aeronautical multicom, formerly found in these sections and incorporates it in section 41.31.

**41.32:** Revises caption from National Fire Radio Cache to National Incident Radio Support Cache (NIRSC). Incorporates direction on command, tactical I and II, and incident tactical (formerly set forth in sections 41.32a-41.32c).

**41.32a-41.32c:** Moves direction on command, tactical I and II, and incident tactical formerly found in these sections and incorporates it in section 41.32.

**41.34:** Revises caption from Incident Air-to-Ground to VHF/AM Aeronautical Band Frequencies.

**41.38:** Incorporates direction on law enforcement and wildlife telemetry (formerly set forth in sections 41.38a-41.38b).

**41.38a-41.38b:** Moves direction on law enforcement and wildlife telemetry and incorporates it in section 41.38.

**41.4:** Clarifies authorization on coordination for additional Continuous Tone-Controlled Squelch System (CTCSS) tones.

**41.5:** Revises caption from Cooperative Arrangements to Cooperative Communications.

**41.6:** Revises caption from Call Signs to International Call Signs.

**41.77:** Adds direction on use of Form FS-6600-4, Initial Report of Radio Interference.

**50:** Revises the title of Chapter 50 from Telephone to Voice.

**51.1-51.3:** Incorporates and adds direction on management tools (formerly set forth in section 51).

**52.3:** Revises caption from Interexchange Carriers (IC) to Services for Employees with Disabilities (formerly set forth in section 52.4). Adds direction to consider equipment and services to assist employees with disabilities in all plans, installations, or system upgrades. Removes direction for ICs previously set forth in this section.

**52.4:** Revises caption from Services for the Handicapped to Technical Approvals (formerly set forth in section 52.5) and incorporates direction on services for employees with disabilities in section 52.3.

**52.5:** Removes direction on technical approvals from this section and incorporates it in section 52.4.

**53.4:** Removes direction on recording (CDR) records from this section and incorporates it in FSM 6642.2.

**60:** Removes references to DEPNET contract and establishes local area network specifications in support of the Integrated Information Management Program (Project 615).

**62:** Adds a cross reference to section 52.3 which requires that services be provided for employees with disabilities.

**70:** Provides guidelines for the implementation of video conferencing, including shared services (sec. 71); issues and concerns (sec. 72); installation and testing (sec. 73); and training (sec. 74).

**80:** Incorporates ID 6609.14-94-1, with no substantive changes in text.

**81.3:** Incorporates direction intermediate distribution facility to work station interface in a local area network environment (formerly set forth in section 81.4) to correct coding.

**81.4-81.41a:** Incorporates direction on backbones (sec. 81.4), Local area network backbones (sec. 81.41), and local area segmentation (sec. 81.41a) (formerly set forth in sections 81.5-81.51a) to correct coding. Moves direction on intermediate distribution facility to a work station interface in a local area network environment from section 81.4 to 81.3.

**90:** Provides guidelines for the Federal Telecommunications System 2000 (FTS2000) including the service order process (sec. 91), switched voice services (sec. 92), virtual on-net services (sec. 93), packet switched services (sec. 94), acceptance (sec. 95), trouble handling and escalation (sec. 96), and billing hierarchy (sec. 97).

This Handbook is now available electronically in the National Information Center in the same format as the paper copy.

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## **41 - Frequency Management**

### **41.1 - Radio Frequency Allocations and Utilization**

#### **41.11 - Fixed and Mobile Service**

Use bands 30-50 MHz, 162-174 MHz, and 406-420 MHz for Frequency Modulated (FM) mobile radio service. Do not use frequencies in the band 162-174 MHz exclusively for fixed point-to-point assignments. Because of the heavy land-mobile use of the 406-420 MHz band, assignments for fixed point-to-point operations are becoming hard to justify and obtain. Therefore, it is recommended that units requiring new or expanded point-to-point operations consider other bands/alternatives prior to requesting assignments. Repeater pair frequencies should be assigned with the highest frequency of the pair as the repeater transmit frequency.

#### **41.12 - Aircraft Stations**

Stations on aircraft are authorized frequencies in the Aeronautical Mobile Services as stipulated in chapter 7 of the National Telecommunications and Information Administration (NTIA) Manual. The Washington Office and Regional Frequency Managers maintain a current copy of the NTIA Manual.

Any other requirements not provided for in this section must be authorized through the Washington Office, Information Systems and Technology Staff, Customer Services Branch, Washington Office Frequency Manager.

#### **41.13 - Ship Stations**

Authorization requirements for stations on ships to use frequencies in the Maritime Mobile Service are contained in Part 7.5,2 of the NTIA Manual. The Washington Office and Regional Frequency Managers maintain a current copy of the NTIA Manual.

#### **41.14 - Microwave Systems**

Follow these guidelines when assigning frequencies for microwave relay:

1. Use the 932-935 MHz and 942-945 MHz bands for low capacity channel requirements (less than 12 channels).
2. Use the 1710-1850 MHz band for medium channel capacity requirements (12 to 420 channels).
3. Use the 7125-8500 MHz band for medium to high channel capacity requirements (video or between 300 and 1200 channels).
4. Use the 21-23 GHz band for high channel capacity and/or short distance requirements.

## **41.2 - Common Carrier Mobile Telephone Services**

### **41.21 - Common Carrier Mobile Telephone Service (Including Cellular)**

Common Carrier Mobile Telephone Service does not require frequency assignment approval, but participation in trunking systems requires a Radio Frequency Assignment (RFA) for each frequency used (ch. 20).

### **41.22 - Pagers and Paging Equipment**

Paging equipment may be operated on existing Forest Service radio systems with proper technical approval (sec. 25, ex. 01).

## **41.3 - National Frequencies**

The frequencies identified in exhibit 01 are for use over a wide geographic area. Some are available nation-wide; others are limited to the States west of the Mississippi River. Waivers may be granted by the Washington Office, Information Systems and Technology Staff, Customer Services Branch, Washington Office Frequency Manager (FSM 6640.41e), on a case by case basis (ex. 01).

### **41.3 - EXHIBIT 01 IS A SEPARATE DOCUMENT.**

### **41.31 - Air Frequencies**

(Sec. 41.3, ex. 01) 1. The national Air Safety Guard frequency for Forest Service aircraft is 168.625 MHz. This frequency is shared between USDA and Interior agencies for emergency communications with aircraft. A separate receiver in the aircraft permits continuous monitoring of this frequency. All aircraft FM radios will encode on 110.9 Hz continuously. Limit transmitter power output of radios installed in aircraft to 10 watts. Base stations require a specific RFA for each location. Do not install Continuous Tone-Controlled Squelch System (CTCSS) protection, encode, and decode on receivers which monitor the air guard frequency without Washington Office, Information Systems and Technology Staff, Customer Services Branch, Washington Office Frequency Manager (FSM 6640.41e) approval. Use the air guard frequency only for emergency ground-to-aircraft communications; emergency aircraft-to-aircraft communications. Initial call, recall, and re-direction of aircraft may be handled on 168.625 when no alternative frequency is available. Use of 168.650 MHz should be the first choice for aircraft initial call, recall, and re-direction. Do not use this frequency for tactical communications, local dispatching, administrative, or logistical use. Note: The Pacific Southwest Region has been granted an exception to maintain CTCSS protection on guard receivers using tone 110.9 Hz.



2. Air Tactics frequencies 166.675, 167.950, 169.150, 169.200, and 170.000 MHz are authorized for incident use west of longitude 100 west (Mississippi River). Use these frequencies for air-to-air or air-to-ground operations only. Limit transmitter power output of radios installed in aircraft for this use to 10 watts. Do not authorize base stations and repeaters to use these frequencies. Do not authorize air-to-ground operations on these frequencies in the Pacific Southwest Region.

Pre-assigned AM frequencies may be used for air tactical operations. NIFC will obtain and assign AM frequencies to each Geographic Interagency Coordination Center for initial attack. Additional AM frequencies may be obtained from NIFC for large incidents through established mobilization procedures. Note: 135.975 is available for use nation-wide for temporary operations at incidents for ATC.

3. Flight following and general air administrative traffic shall be conducted on 168.650 units. This includes local and air dispatch. Do not use the air safety frequency for local air dispatch. Regions and forests shall use 168.650 MHz for this purpose. A radio frequency assignment is required for each station utilizing this frequency. Do not use this frequency for ground-to-ground communications. Limit transmitter power output of radios installed in aircraft for this use to 10 watts. Do not assign this frequency to an incident.

4. Aeronautical multicom frequency 122.925 MHz may be used for communications with Forest Service aircraft nationwide. Frequency 122.9 MHz is also available to all pilots for air-to-air communications. These frequencies are heavily used. The Forest Service does not have priority over other users.

Frequencies 123.050 and 123.075 MHz may be used at landing areas used exclusively as heliports. Frequencies 123.025 and 123.075 MHz are authorized for use by aircraft for air-to-air communications directly related to helicopter operations. Frequency 122.850 MHz is also available for helicopter air-to-air or air-to-ground communications.

Frequencies in the VHF-AM aeronautical mobile bands (118-136 MHz) may be obtained for short term use by coordination between the Forest Service Regional Offices and the Federal Aviation Administration Regional Offices.

With the exception of 122.925 MHz, all of the frequencies listed in this section are shared equally with the general aviation community, and with other natural resource agencies.

#### **41.32 - National Incident Radio Support Cache (NIRSC)**

The NIRSC frequencies are generally clear throughout the contiguous United States. However, coordinate use east of the Mississippi River prior to use of these frequencies. Authorize NIRSC frequencies for incident use only. Ensure that all other uses, including those of short duration, are specifically authorized. Limit power to not more than 30 watts for mobiles and a maximum

of 10 watts for repeaters. Ensure that transmitters do not exceed 5 watts when within 75 miles of the Canadian border.

1. Command Frequencies. The NIRSC Command frequencies are available for all Regional Fire Caches. Use in Regional Caches requires coordination through the Regional Incident Communications Coordinator or Regional Frequency Manager prior to deployment. Do not use these frequencies for Forest Nets. The command frequencies are as follows:

- a. Command I     168.700/170.975 MHz
- b. Command II    168.100/170.450 MHz
- c. Command III   168.075/170.425 MHz

2. Tactical I and III. The NIRSC frequencies 168.050 and 168.600 MHz are also available for use in Regional Fire Caches with restrictions similar to those of Command Frequencies. Authorize these for mobile operations only. Do not authorize base stations and repeaters on these frequencies.

3. National Incident Tactical Channel. Frequency 168.200 MHz (TAC II) is the National Incident Tactical Channel which can be used for initial attack on any Forest Service Incident. Authorize use for mobiles and portables only. Prohibit base stations and repeaters on this frequency.

#### **41.33 - National Inter-Agency Incident Management System (NIIMS) Contact**

Restrict the use of frequency 168.550 MHz to an initial contact frequency for mobile and portable units on a NIIMS Incident. Ensure that this frequency is not used in base stations and repeaters.

This frequency may be used in a transportable station, such as at an Incident Command Post, but not at a permanent site. Adhere to the power restriction limit of 60 watts except within the Canadian Coordination Zone (3.4.6 of the NTIA Manual), where power is restricted to 30 watts. Do not use this frequency as a tactical frequency on Forest Service incidents.

#### **41.34 - VHF/AM Aeronautical Band Frequencies**

Regional Interagency Coordination Centers shall coordinate through the National Interagency Fire Center (NIFC) the preassignment of AM frequencies in the Aeronautical Band for air-to-air tactical and air-to-ground operations. Provide requirements to NIFC by March 1 each year. Additional AM frequencies may be obtained by NIFC for expanded incident needs. Other than working with local Federal Aviation Administration (FAA) coordinators during incidents, NIFC should be the sole point of contact with the FAA for authorization to use Aeronautical Band frequencies.

### **41.35 - UHF Logistics Communications System**

The National Incident Radio Support Cache (NIRSC) Logistics system uses the following six frequencies:

1. Logistics 1     414.650/410.775 MHz
2. Logistics 2     415.400/411.400 MHz
3. Logistics 3     415.500/411.500 MHz

### **41.36 - VHF Low Band Logistics Communications System**

The following low band frequencies are available for use by Regional caches:

1. 38.73/41.61 MHz
2. 46.77/49.67 MHz
3. 46.97/49.97 MHz

These frequencies may also be used by the Regions on a secondary basis to the caches.

### **41.37 - Common User**

Frequencies 163.100 and 168.350 MHz are available for use on a Region-wide basis to all Regions. Use these frequencies for low priority traffic of a secondary nature. Interference protection is not afforded from other users. Do not use these frequencies for high priority traffic or traffic pertaining to life or property threatening situations. Limit power to a maximum of 30 watts. Limit use to mobile and portable operations only; prohibit aircraft, base stations (including transportable), and repeaters. Do not make these frequencies a part of any cooperative arrangements.

### **41.38 - Other Non-Specific National or Wide Area Frequencies**

1. Law Enforcement. Law enforcement assignments are those primarily used for law enforcement purposes. An RFA for a law enforcement frequency may be for a large geographical area, such as national, State, or region, or they may be for a relatively limited area of operation. Information concerning these frequencies (assignment information and/or Radio Frequency Assignments) is classified as exempt from the provisions of the Freedom of Information Act (5 U.S.C. 522). Deny requests for information on these frequencies under the Act (FSM 6641.37).

2. Wildlife Telemetry. All use of radio frequencies for wildlife telemetry must be covered by a valid RFA. Certain frequencies have been made available for use in wildlife telemetry. Although protection from interference is not given for these frequencies, they have been selected to minimize the potential. Ensure that each project has a specific RFA. Do not transfer these RFAs between projects.

Typical frequency assignments for birds include: station class (STC), Radio Beacon Mobile Station (MOB), and emission (EMS) 1KA1D, power (PWR) W.01 (10 milliwatts maximum output power), and data in the \*EQT and \*EQR fields, for each specific frequency.

Non-Government contractors with contracts with the Forest Service may use these frequencies as long as there is a valid RFA. However, title to transmitting and receiving devices used in the contract shall be with the Government and cannot be transferred.

#### **41.39 - Citizens Band Radio Usage**

Forests may utilize frequencies allocated to the Citizens Band (CB) Radio Service under Part 95, Subpart D of the Federal Communications Commission (FCC) Rules, if there is justification to demonstrate that such an assignment is necessary for intercommunications with non-Government stations.

Ensure that operations by Federal Government stations are in accordance with all applicable FCC Rules and Regulations. Ensure that transmitters are operated only by employees of the Forest Service and only for the purpose of communicating with non-Government entities to coordinate essential and mutual activities. Prohibit communications between Federal Government entities.

Regional Frequency Managers should provide guidelines to the forests in proper use of CB Radio frequencies (FSM 6640.42a). A RFA is issued as a Region-wide assignment for all Forest Service activities within the Region.

#### **41.4 - Continuous Tone-Controlled Squelch System (CTCSS)**

Ensure that all new Forest Service Frequency Modulated Land Mobile Radio (FM LMR) systems use CTCSS protection in the frequency bands between 30 MHz and 420 MHz. Ensure that all such systems have CTCSS operational in the following manner no later than fiscal year 1998:

1. Encode and decode for all base stations and repeaters.
2. Encode as a minimum, in portables and mobiles (land vehicles).
3. Encode and decode in aircraft.

Coordinate forest plans for CTCSS through the Regional Frequency Manager.

For all forest FM LMR systems accessible by mobiles and portables (such as Station Classes MA, ML, MS, MO, and MOP), use tones selected from the following eight frequencies as their first choices for primary nets. Use additional tones only when limiting the design to the basic eight would restrict cost effective operational system design.

1. 103.5 Hz,
2. 110.9 Hz,
3. 123.0 Hz,
4. 131.8 Hz,
5. 136.5 Hz,
6. 146.2 Hz,
7. 156.7 Hz, and
8. 167.9 Hz.

Coordinate requirements for additional CTCSS tones with the Regional Frequency Manager. (The order of frequencies shown does not relate to channel or numeric order.)

#### **41.5 - Cooperative Communication**

Arrangements between Government agencies and non-Government agencies allow operations on each other's licensed/assigned frequencies when of mutual benefit. This section pertains solely to authorization for use of a frequency, not to shared services on a Forest Service frequency or system (such as a forest owned microwave system) which is restricted to the conditions set forth in FSM 6641.

Do not require written arrangements between forests and research stations. Coordinate such cooperative use through the Regional Frequency Manager. Provide each member of such intra-Region arrangements with a copy of the relevant RFA.

Ensure that cooperative arrangements (Memorandum of Understanding and Cooperative Agreements) providing for the sharing of specific radio frequency(s) authorized to a unit:

1. State the purpose of the agreement.
2. Provide for the continued control and responsibility for all transmissions on that frequency by the license/RFA holder.

3. Provide that the license/RFA holder's dispatch and management procedures must be used.
4. State a time limit for the arrangement. It cannot be longer than the expiration date of the license or RFA.
5. Provide for termination of the agreement by either party.
6. List the specific frequency(s) covered by the agreement.
7. Include operational details of use:
  - a. Power output.
  - b. Specific site(s) covered for base stations and area (such as a forest, or vicinity of a geographic location) for mobiles.
  - c. Agency contact points (Forest Service and/or other).
  - d. Other operational information regarding the use of the frequency, including restrictions on use.
8. State clearly that use of the frequency, under conditions other than identified in the agreement, shall be reported as interference and appropriate action shall be taken.

Do not use written cooperative arrangements in lieu of RFA, except as provided in section 21.1. When cooperative arrangements require the Forest Service (or other Federal Agency) to obtain RFA, or a non-Federal entity to obtain a license, forward a copy of the arrangement to the Washington Office, Information Systems and Technology Staff, Customer Services Branch, Washington Office Frequency Manager (FSM 6641).

#### **41.6 - International Call Signs**

International regulations require that all base stations in the Fixed Service capable of causing harmful interference beyond the boundaries of the country to which they belong must have call signs from the international series. In addition, call signs are required nationally to provide for identification of stations in the event of harmful interference. The Washington Office Frequency Manager determines when call signs are required and assigns them as appropriate.

Radio stations having several frequencies require only one international call sign. Adding frequencies to an existing station does not require a change in the call sign.

Mobiles and portables associated with base stations do not require international call signs. They may use geographical names, last names of individuals, or any other appropriate identifier. However, systems comprised of mobile stations only, do require a single

international call sign for the system. International call signs for these systems consist of 1 or 2 letters followed by 5 numbers (for example: KD20014).

## **41.7 - Operating Procedures**

### **41.71 - Unauthorized Interception, Divulgence, or Publication of Communications by Radio**

Do not permit any unauthorized interception or monitoring of any communication by radio, including radiotelephone and radiotelegraph communications. Do not permit any unauthorized divulgence or publication of the existence, contents, substance, purport, effect, or meaning of any communication (or part thereof) received or transmitted by radio, and not intended for the use of the general public, (Pub. L. 90-351, Title III).

### **41.72 - Prevention of Interference**

At all stations, forbid the unnecessary transmissions and transmission of superfluous signals and correspondence. Radiate only as much power as is necessary to ensure satisfactory service. Complete all transmissions as soon as feasible, use standard procedures unless an exception has been approved, and confine transmissions to official business.

### **41.73 - Use of Call Signs**

Use the minimum identification requirements as follows:

1. Fixed and land stations shall transmit their international call sign on each frequency in use at the beginning and end of operation, and at least once an hour. A mobile or portable station associated with a base station, transmitting only on the base station frequency, is not required to transmit identification. However, if the mobile or portable station is not associated with a base station, transmit identification as described for a fixed or land station.

2. Use "This is" followed by the call sign. Automatic identifiers using Morse Code shall use "DE" followed by the call sign.

### **41.74 - Profane or Obscene Language**

Prohibit the transmission of obscene, indecent, or profane language by means of radio communications.

### **41.75 - Operator Licenses**

A radio-operator license is not required to operate a Federal Government radio station. However, all operations must be under the control of a responsible employee from the agency authorized to use the station.

#### **41.76 - Operator Guidelines**

Operators of radio equipment should follow these guidelines:

1. Monitor prior to use (do not interfere except in an emergency).
2. Keep transmissions brief (do not use slang terms).
3. Keep all communications in plain English (clear text). Do not use codes (including 10-codes).
4. If no call sign is assigned, use a geographical name for base stations and unit identifier or individuals name for mobiles and portables.

#### **41.77 – Interference**

Report harmful interference to the Regional Frequency Manager. If the Regional Frequency Manager is unable to resolve the problem, the Regional Frequency Manager refers the situation to the Washington Office, Information Systems and Technology Staff, Customer Services Branch, Washington Office Frequency Manager. Resolution of harmful interference from international sources shall be coordinated through the Washington Office. Use Form FS-6600-4, Initial Report of Radio Interference, for submitting interference reports (ex. 01).



**41.77 - Exhibit 01**

FS-6600-4 (7/93)

(SAMPLE OF REQUIRED INFORMATION)

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**INITIAL REPORT OF RADIO INTERFERENCE**

**1. Complainant Data:**

Region/Forest: REGION 8 / DANIEL BOONE

Name: TOM THOMISON

Facility: FIRE DISPATCH

Address: 1621 KENT STREET, ROSSLYN, VIRGINIA 22209

Telephone No: 703-555-1212

**2. Particulars regarding station experiencing the interference:**

A. Name/Call Sign/Stn ID: HIGH MTN / KLL557

B. Freq(s) Receiving Interference: 172.025

C. Government Master File (GMF) Agency Serial No.(s) A930611

D. Station Class(es)/Emission Designator(s): MO, MOP / 16K00F3E

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**E. Geographic Location and Elevation of Receiver:**

State/County (RSC): KY

Antenna Loc'n (RAL): HIGH MTN

Latitude (RLA): 370805N

Longitude (RLG): 0832845W

Antenna Dimensions (RAD): 03G COLLINEAR 00565H0030T

Is Tone Squelch or Digital Squelch Used On Victims Receiver: YES

**41.77 - Exhibit 01--Continued**

**INITIAL REPORT OF RADIO INTERFERENCE**

F. Date, Time Interference Started: 061215L

G. Date, Time Interference Most Disruptive: 061405L

H. Date, Time Interference Ended: ON-GOING

I. Description of Harm Caused By Interference:

X Harmful to Safety of Life?

**OR**

NON-SAFETY? (Obstructs Communications in Progress)

J. Description of Interfering Source (Provide as much detail as possible, e.g. recordings, etc.):

VOICE AND DATA TRAFFIC SEEMS TO INCREASE IN AFTERNOON.

TAPES MAILED TO REGIONAL FCC OFFICE.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

K. Description of How Interference Disrupts Your Activity:

UNABLE TO COMMUNICATE WITH FIRE CREWS.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Particulars of Station Causing the Interference (if known)

A. Name/Call Sign/Stn ID: JOHNSON CONSTRUCTION

B. Frequency Measured: 172.025

C. Class of Emission/Bandwidth: 16K00F3E

D. Bearing: SEEMS TO BE COMING FROM THE SOUTH AND WEST

## 41.8 – Training

The individual delegated the responsibility of Frequency Manager for a Region shall be provided with appropriate training, either prior to, or as soon as possible following their appointment (FSM 6640.42). This training shall, at a minimum, consist of:

1. Training Options. An entry level course in Federal Radio Frequency Management. This can be in a formal class such as that presented by the National Telecommunications and Information Administration (NTIA) in Washington, D.C. Another source for Frequency Management training is the Interservice Radio Frequency Management School, through the Air Force Frequency Management Office, Washington, DC. An alternative to formal class training is a 2-week detail to the Washington Office, Information Systems and Technology Staff, Customer Services Branch.

2. Technical Approval Training. The technical approval process is a separate training issue from paragraph 1, and can be satisfied by a formal training course conducted by the Washington Office, Information Systems and Technology Staff, Customer Services Branch or by an additional detail to that Branch.

3. National security requirements in Federal Radio Frequency Management. This requirement can be met by a briefing through the Washington Office, Information Systems and Technology Staff, Customer Services Branch, or by a Regional Security Officer who has been briefed in frequency management security.

## 41.9 - Incident Communications

Activate the Regional Incident Communications Coordinator position whenever the potential for multiple adjacent incidents and/or a Multiple Agency Coordination (MAC) situation exists. These employees assign frequencies to incidents within their geographic areas of responsibility (FSM 6640.42a). Ensure that frequencies are assigned only within the terms of their RFA or license.

1. Frequencies assigned to the Forest Service are for use by the Government on Forest Service lands. Coordinate all other use through the the Washington Office, Information Systems and Technology Staff, Customer Services Branch.

2. Incidents on non-Forest Service Lands shall use frequencies assigned/licensed to the host agency. An exception to this may be made when a National Incident Radio Support Cache (NIRSC) is assigned to an incident. In those cases, the cache frequencies may be used in accordance with the national policies and directions. Ensure that additional frequencies are coordinated through the procedures of the host agency.

3. During multiple incidents or when Multiple Agency Coordination is in effect, the Incident Communications Coordinator shall, on a daily basis, electronically mail a listing of frequencies in use to:

- a. Regional Frequency Manager and
- b. National Interagency Fire Center (NIFC).

Do not send the listing to others except those specifically requiring the information to perform their duties, such as adjacent Incident Communications Coordinators.

## **42 - Radio Procurement**

### **42.1 - Service-wide Consolidated Contracting**

The Washington Office, Information Systems and Technology Staff, Advanced Technology and Systems Engineering Branch (FSM 6640.41b), prepares the following for distribution by August 1 of each year:

1. Draft "Minimum Standard Specifications for FM LMR Communications Equipment".
2. Draft "Schedule of Items for Anticipated Field Requirements".

Use the information in these packages as guidelines for preparing the annual radio requirements input. Additions, removals, or modifications may be suggested as necessary. See FSM 6641 for annual reporting requirements.

The Washington Office, Information Systems and Technology Staff, Advanced Technology and Systems Engineering Branch, ensures that the advertisement and bidding cycle is performed in the last quarter of each calendar year so awards can be made in January.

Ensure that all FM LMR communications equipment accepted for award under the consolidated contracts meets the standards established in the "Minimum Standard Specifications for FM Land-Mobile Communications Equipment".

### **42.2 - Radio Standards and Evaluations**

The Washington Office, Information Systems and Technology Staff:

1. Provides ongoing review of current state-of-the-art radio equipment that is considered within the scope of Forest Service requirements.
2. Provides test and evaluation reports to the Regions, Stations, Area, and Institute when they are completed.

3. Conducts continuing interactive communications with the Regions, Stations, Area, and Institute to stay current with changing field requirements. For example: Attends regional meetings or participates in forest visits to stay current with Forest Service needs.

#### **42.3 - Unsatisfactory Equipment Reports (URs)**

Forests shall provide URs to the Washington Office, Information Systems and Technology Staff, Advanced Technology and Systems Engineering Branch, through their Regional Offices. Stations, Area, and Institute offices can work either through a Regional Office or directly with the Radio Lab. Reports may be informal summaries with the intent of providing feedback on test, evaluation, and vendor contract performance. Problems considered minimal at the forest level may be significant when viewed from a Service-wide standpoint. The extent of a problem can only be known if the information is provided to a central point.