Chapter 16
Communications

Radio Communications

Radio communications provide for the flow of tactical information needed for the command/control of personnel and resources.

Policy

Agency specific policies for radio communications may be found in:

- *Department of Interior, Department Manual, Radio Communications Handbook (377 DM).*
- *USDA Forest Service Handbook (FSH 6609.14 chapters 10-40 and Forest Service Manual (FSM) 6600 Systems Management Chapter 6640 - Telecommunications.*

Radio Contracts

Contracts specifying the requirements for radios have been let and may be found for the:

- Department of Interior Project 25 Digital Radio contract at http://www.blm.gov/natacq/IDIQ/index.html
- USDA Forest Service National Radio Contract at http://www.fs.fed.us/business/2002%20awards/.
- **BLM -** *Currently the Thales Racal P25 handheld, the EF Johnson 5100 P25 handheld, and the Relm/Bendix King DPHX handheld have been approved for fire use by the BLM. Approved radios have software version requirements and hardware upgrades that must be completed prior to use on fire assignments.*
- **FS/FWS/NPS -** *The Thales Racal, EF Johnson 5100, Motorola XTS5000, Relm/Bendix King DPH, and Datron Guardian handhelds have all been approved for fire use by the National Interagency Incident Communications Division (NIICD).*

For information on software and hardware requirements and approved radios, contact the NWTSU at (208) 672-7880 ext. 103.

Dispatch Recording Devices

- **BLM -** *Recording devices will be used by each BLM dispatch office or an interagency office dispatching BLM resources. The purpose is to record radio communications during emergency operations. This will ensure that in the event of an accident, investigators will be provided with an accurate record of events during reviews of those incidents.*

Radio Frequency Management

- FM frequency assignments for normal operations or initial attack ground operations are made on a permanent basis and are requested through the state office ISO frequency manager to the Washington Office frequency manager.

- The NIFC Communications Duty Officer (CDO) coordinates and assigns incident frequencies at the national level. They will also assign Communications Coordinators (COMC) when necessary to support a specific Geographic Area(s). See the National Mobilization Guide for additional information.

- Mutual-aid agreements for frequency sharing can be made at the local level.

- A mutual-aid frequency sharing agreement is valid only in the specific locale it originates in. These agreements do not authorize the use of a shared frequency in any other area. NIFC national fire frequencies are not to be used for these agreements.

- Do not use a frequency unless authorized to do so by communications personnel at the local, state, regional or national level.

- Initial attack AM air operations frequencies will be assigned by the NIFC CDO and FM air operations frequencies will be facilitated/assigned by the NIFC CDO. These assignments will be on an interagency basis and coordinated with the GACCs.

- On Type 1 or 2 incidents, the Communications Unit Leader (COML) will request, assign, and report to the NIFC CDO/COMC, all frequencies used on the incident. This would include the request and assignment of aircraft frequencies. The ICS-205 and ICS-220 are always a part of the Incident Action Plan (IAP) and distributed at every operational period briefing.

- The COML will contact the NIFC CDO, or the COMC if assigned, for additional FM and AM frequencies. Requests for aviation frequencies will be placed through established ordering channels through NICC and will be filled by the NIFC CDO or COMC. COML's will ensure that the host agency Aviation Dispatcher and the NIFC CDO or COMC has the current ICS-220 for their incident.

- Radios being used in wildland firefighting operations must be able to function in both wideband (25.0 Khz) mode and narrowband (12.5 Khz) mode. Remove radios from the system that cannot be programmed to operate in the narrowband mode.

- When incident management teams are pre-positioned in a geographic area, consideration will be given to pre-positioning a communication system for immediate deployment by the team(s) when assigned to an incident. Pre-positioning will be based on equipment availability and/or priorities established by NMAC at NIFC.

- When prepositioned in a field unit or geographical area, consideration will be given to also repositioning a radio kit for immediate use by the team when assigned.
- Frequencies for Type 1 and Type 2 incidents are assigned through the National Interagency Incident Communications Division (NIICD) located at NIFC. The CDO is responsible for this function.
- During severe situations and/or when there are significant numbers of large incidents, additional frequencies can be assigned. These are temporary assignments, and are requested by the NIFC CDO from the Washington Office (Spectrum) managers and given by the CDO to the incident. This applies to frequencies for command, ground tactical, and aviation operations.
- Additional frequencies are provided in the following circumstances:
  - ➢ The NIICD national frequencies are all committed within a specific geographic area.
  - ➢ The requests continue for frequencies to support new incidents within a specific complex.
  - ➢ The fire danger rating is extreme and the potential for additional new incidents is high.

Pre-assigned National Frequencies

National Air Guard - 168.625 MHz - A National Interagency Air Guard frequency for government aircraft will be used for emergency aviation communications. Continuous monitoring of this frequency in narrowband mode is mandatory by agency dispatch centers. Transmitters on this frequency must be equipped with an encoder on 110.9 Hz. 168.625 is restricted to the following use:

- Air-to-air emergency contact and coordination.
- Ground-to-air emergency contact.
- Initial call, recall, and re-direction of aircraft when no other contact frequency is available.

National Flight Following - 168.650 MHz

The National Interagency Air Net frequency is used for flight following of official aircraft. The intent is not to use this frequency for incident operations. All dispatch centers/offices will monitor the national fight following frequency at all times. 168.650 is restricted to the following use:

- Flight following, dispatch, and/or re-direction of aircraft.
- Air-to-ground and ground-to-air administrative traffic.
- Not authorized for ground-to-ground traffic.

National Interagency Air Tactics - 166.675 MHz, 167.950 MHz, 169.150 MHz, 169.200 MHz, 170.000 MHz

- Frequencies used to support air-to-air or ground-to-air communications on incidents west of the 95th meridian. These frequencies shall be used for air-to-air and ground-to-air communications only.
  - ➢ Exception: Pacific Southwest Geographic Area: 166.675 MHz, 169.150 MHz, and 169.200 MHz will be used for air-to-air only; 170.000 MHz will be used for ground-to-air only.
- Interagency geographic area coordination centers assign these frequencies. Assignment must be coordinated through the NIFC CDO.
- Transmitter power output of radios installed in aircraft operating on these frequencies shall be limited to 10 watts.

Base stations and repeaters are prohibited on these frequencies.

National Interagency Airtanker Initial Call - 123.975 MHz

The national interagency frequency assigned to all airtanker bases for their exclusive use. No other use outside of airtanker bases is authorized.

National Government All-Call Frequencies - 163.100 MHz and 168.350 MHz

For use anywhere, any time. They are good choices as travel frequencies for strike teams moving between assignments. They are available for ground tactical frequencies during initial attack or incident operations. They are not to be used for air-to-ground operations.

- **NOTE:** When you are traveling between incidents, be sure to monitor for incident radio traffic in the area before using these frequencies.

Incident Radio Support

All NIRS cache communications equipment shall be returned to NIICD at NIFC immediately after the incident is turned over to the jurisdictional agency.

No cache communication equipment shall be moved from one incident to another without being first returned to NIFC for refurbishment. However, equipment unused and red-sealed may be moved, if approval is given by the NIFC CDO or COMC.

Military Communications on an Incident

Military units assigned to an incident already have radios. Each battalion is assigned 80 handheld radios. Sixteen of these radios are used by military crew liaisons. Intercrew communications within a military unit is provided by the military on its radios using its frequencies. All frequency assignments at the incident will be made by the COML in accordance with the ICS-205.

Some active military and guard units have aviation VHF-FM radios compatible with civilian systems. Other units are adapting their aircraft for the civilian radios and can be easily outfitted prior to dispatch to an incident. A limited number of wiring harnesses are available at NIFC for those military aircraft that do not have civilian VHF-FM capability. The wiring harnesses and radios will be resource ordered by the incident. The resource order will include a request for trained personnel from NIICD to perform the installation of the equipment. Equipment will not be sent without trained and qualified personnel to install it.

Cellular Communications/Satellite Phone Communication

Cellular/satellite telephones will not be used to communicate tactical operations unless they are the only means possible. Cellular/satellite telephones are not to be used for flight following in lieu of normal flight-following protocols.

Phone communication can be used for logistical purposes.

Effective Radio Use

- If personnel do not follow basic guidelines and use the system properly, the best system, even with full coverage, will not meet the requirements of the situation or incident.
- All emergency communications equipment should be kept away from sources of possible interference. Existing radio communications sites are the best example of where not to place this equipment.
- Keep the antenna as high as possible and in a vertical position.
- Canting or tilting the radio 45 degrees lowers the effective transmitting power by half, so that a two-watt radio performs as a one-watt radio. Use of a chest harness reduces the effectiveness of the radio since most harnesses hold the radio at a 45 degree angle. A decrease in transmitting and receiving capability also occurs due to shielding from your body.
- Frequencies are a finite resource. There are a limited number available for initial attack and/or incident communications. Care must be taken as to how and where they are assigned to minimize the possibility of interference.
- The more channels that are scanned, the busier the radio receiver becomes. In the case of inexperienced radio users, the communication system will appear to be overloaded because the radio is never quiet.
- Use clear text language: use of codes potentially confuses interagency communications.
- Assistance with radio operations, troubleshooting and deficiency reports can be found at http://radios.nifc.gov/.