

Chapter 16 Communications

A. Radio Communications

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

1. Policy

Agency specific policies for radio communications may be found in:

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

2. Radio Contracts

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

- a. Department of Interior Project 25 Digital Radio contract at <http://www.blm.gov/natacc/IDIQ/index.html>.
- b. USDA Forest Service National Radio Contract at <http://www.fs.fed.us/business/2002>.
- c. **BLM**- *New digital radios used in fire operations are tested by the National Wireless Technology Support Unit (NWTSU) for fire approval. The testing is conducted to verify that the radios will withstand the rugged work environments specific to fire and that the radios have operational features and programmability options to meet fires needs.*
BLM – *Currently the Thales Racal P25 Handheld and the EF Johnson 5100 P25 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.*
BLM – *Testing of additional radios by the manufacturers is in progress.*

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

3. Dispatch Recording Devices

- a. **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.*

BLM – If there is an accident or event that requires an investigation from the state or national office, the recording covering that time period will be included in the investigation file.

4. Radio Frequency Management

- a. FM frequency assignments for normal operations or initial attack are made on a permanent basis and are requested through the state office or regional telecommunications manager to the Washington Office frequency manager.
- b. The NIFC Communications Duty Officer (CDO) coordinates and assigns incident frequencies at the national level. They will also assign Communications Coordinators when necessary to support a specific Geographic Area(s). See the *National Mobilization Guide* for additional information.
- c. Mutual-aid agreements for frequency sharing can be made at the local level.
- d. 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.
- e. Do not use a frequency unless authorized to do so by communications personnel at the local, state, regional or national level.
- f. Initial attack aircraft frequencies (AM) will be assigned by the NIFC CDO.
- g. On a Type 1 or 2 incident, the Communications Unit Leader (COML) will request and assign 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.
- h. The COML will contact the NIFC CDO, or the Communications Coordinator if assigned, for additional FM and AM frequencies.
- i. When incident management teams are 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.
- j. 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.
- k. 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.

1. Additional frequencies are provided in the following circumstances:
 - 1) The NIICD national frequencies are all committed within a specific geographic area.
 - 2) The requests continue for frequencies to support new incidents within a specific complex.
 - 3) The fire danger rating is extreme and the potential for additional new incidents is high.

5. Pre-assigned National Frequencies

- a. **National Air Guard – 168.625 MHz** – A National Interagency Air Guard frequency for government aircraft assigned to incidents. It is used in emergency communications for aviation. A separate receiver is required to permit continuous monitoring. Transmitters on this frequency should be equipped with an encoder on 110.9 Hz. 168.625 is restricted to the following use:
 - 1) Air-to-air emergency contact and coordination.
 - 2) Ground-to-air emergency contact.
 - 3) 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 flight following frequency at all times. 168.650 is restricted to the following use:

- 1) Flight following, dispatch, and/or re-direction of aircraft.
 - 2) Air-to-ground and ground-to-air administrative traffic.
 - 3) Not authorized for ground-to-ground traffic.
- b. **National Interagency Air Tactics – 166.675 MHz, 167.950 MHz, 169.150 MHz, 169.200 MHz, 170.000 MHz** –
 - 1) 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.
 - (a) Exception: 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.
 - (b) Exception: Pacific Northwest Geographic Area: 170.000 MHz frequency cannot be used in Columbia

River Gorge area (located between Oregon and Washington).

- 2) Interagency geographic area coordination centers assign these frequencies. Assignment must be coordinated through the NIFC CDO.
 - 3) 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.
- c. **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.
- d. **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 area before using these frequencies.

6. Incident Radio Support

- a. All cache communications equipment shall be returned to NIICD at NIFC immediately after the incident is turned over to the jurisdictional agency. The only exceptions are the seven Pacific Southwest Regional Starter Systems, which must be returned to their designated home unit.
- b. 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.

7. Military Communications on an Incident

- a. 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.
- b. 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.

8. Cellular Communications/Satellite Phone Communication

- a. Phone communication is a closed-loop conversation between two parties; it does not allow others to share critical information. This lack of open communication can contribute to any number of dangerous and undesirable situations. Cellular telephones will not be used to communicate tactical operations, unless they are the only means possible. Cellular telephones are not to be used for flight following in lieu of normal flight-following protocols.
- b. Phone communication can be used for logistical purposes, if warranted.
- c. Cell systems get overloaded with calls during emergencies, making access difficult impossible. Since all systems are interconnected in some form or another, problems that occur in one system can cause problems in other cell system(s), which can shut down all or part of an entire network.

9. Effective Radio Use

- a. 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.
- b. 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.
- c. Keep the antenna as high as possible and in a vertical position.
- d. 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.
- e. Frequencies are a finite resource. There are a limited number available for initial attack and/or incident communications. Care must be taken how and where they are assigned to minimize the possibility of interference.
- f. To be effective with the scanning function end each initial message with the radio channel identifier being used. This is still required even with more sophisticated radios.

- g. 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.
- h. Use clear text language: use of codes potentially confuses interagency communications.