

Chapter 16 Communications

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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** - *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.*
- **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*

- 1 *in the event of an accident, investigators will be provided with an accurate*
2 *record of events during reviews of those incidents.*
- 3 • **BLM** - *If there is an accident or event that requires an investigation from*
4 *the state or national office, the recording covering that time period will be*
5 *included in the investigation file.*

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7 **Radio Frequency Management**

- 8 • FM frequency assignments for normal operations or initial attack ground
9 operations are made on a permanent basis and are requested through the
10 state office ISO frequency manager to the Washington Office frequency
11 manager.
- 12 • The NIFC Communications Duty Officer (CDO) coordinates and assigns
13 incident frequencies at the national level. They will also assign
14 Communications Coordinators (COMC) when necessary to support a
15 specific Geographic Area(s). See the National Mobilization Guide for
16 additional information.
- 17 • Mutual-aid agreements for frequency sharing can be made at the local
18 level.
- 19 • A mutual-aid frequency sharing agreement is valid only in the specific
20 locale it originates in. These agreements do not authorize the use of a
21 shared frequency in any other area. NIFC national fire frequencies are not
22 to be used for these agreements.
- 23 • Do not use a frequency unless authorized to do so by communications
24 personnel at the local, state, regional or national level.
- 25 • Initial attack AM air operations frequencies will be assigned by the NIFC
26 CDO and FM air operations frequencies will be facilitated/assigned by the
27 NIFC CDO. These assignments will be on an interagency basis and
28 coordinated with the GACC's.
- 29 • On Type 1 or 2 incidents, the Communications Unit Leader (COML) will
30 request, assign, and report to the NIFC CDO/COMC, all frequencies used
31 on the incident. This would include the request and assignment of aircraft
32 frequencies. The ICS-205 and ICS-220 are always a part of the Incident
33 Action Plan (IAP) and distributed at every operational period briefing.
- 34 • The COML will contact the NIFC CDO, or the COMC if assigned, for
35 additional FM and AM frequencies. Requests for aviation frequencies will
36 be placed through established ordering channels through NICC and will be
37 filled by the NIFC CDO or COMC. COML's will ensure that the host
38 agency Aviation Dispatcher and the NIFC CDO or COMC has the current
39 ICS-220 for their incident.

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- 1 • When incident management teams are pre-positioned in a geographic area,
2 consideration will be given to pre-positioning a system for immediate
3 deployment by the team(s) when assigned to an incident. Pre-positioning
4 will be based on equipment availability and/or priorities established by
5 NMAC at NIFC.
- 6 • Prepositioned in a field unit or geographical area, consideration will be
7 given to also repositioning a radio kit for immediate use by the team when
8 assigned.
- 9 • Frequencies for Type 1 and Type 2 incidents are assigned through the
10 National Interagency Incident Communications Division (NIICD) located
11 at NIFC. The CDO is responsible for this function.
- 12 • During severe situations and/or when there are significant numbers of large
13 incidents, additional frequencies can be assigned. These are temporary
14 assignments, and are requested by the NIFC CDO from the Washington
15 Office (Spectrum) managers and given by the CDO to the incident. This
16 applies to frequencies for command, ground tactical, and aviation
17 operations.
- 18 • Additional frequencies are provided in the following circumstances:
 - 19 ➤ The NIICD national frequencies are all committed within a specific
20 geographic area.
 - 21 ➤ The requests continue for frequencies to support new incidents within
22 a specific complex.
 - 23 ➤ The fire danger rating is extreme and the potential for additional new
24 incidents is high.

25 **Pre-assigned National Frequencies**

26 National Air Guard - 168.625 MHz - A National Interagency Air Guard
27 frequency for government aircraft assigned to incidents. It is used in emergency
28 communications for aviation. A separate aircraft priority receiver is required to
29 permit continuous monitoring. Transmitters on this frequency should be
30 equipped with an encoder on 110.9 Hz. 168.625 is restricted to the following
31 use:
32 use:

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

37 **National Flight Following - 168.650 MHz**

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

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

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

- 3 • Frequencies used to support air-to-air or ground-to-air communications on
4 incidents west of the 95th meridian. These frequencies shall be used for
5 air-to-air and ground-to-air communications only.
6 ➤ Exception: Pacific Southwest Geographic Area: 166.675 MHz,
7 169.150 MHz, and 169.200 MHz will be used for air-to-air only;
8 170.000 MHz will be used for ground-to-air only.
9 • Interagency geographic area coordination centers assign these frequencies.
10 Assignment must be coordinated through the NIFC CDO.
11 • Transmitter power output of radios installed in aircraft operating on these
12 frequencies shall be limited to 10 watts.
13 Base stations and repeaters are prohibited on these frequencies.

14
15 **National Interagency Airtanker Initial Call - 123.975 MHz**

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

18
19 **National Government All-Call Frequencies - 163.100 MHz and 168.350**
20 **MHz**

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

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

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28 **Incident Radio Support**

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

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

36
37 **Military Communications on an Incident**

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

43 Some active military and guard units have aviation VHF-FM radios compatible
44 with civilian systems. Other units are adapting their aircraft for the civilian

1 radios and can be easily outfitted prior to dispatch to an incident. A limited
2 number of wiring harnesses are available at NIFC for those military aircraft that
3 do not have civilian VHF-FM capability. The wiring harnesses and radios will
4 be resource ordered by the incident. The resource order will include a request
5 for trained personnel from NIICD to perform the installation of the equipment.
6 Equipment will not be sent without trained and qualified personnel to install it.

7 **Cellular Communications/Satellite Phone Communication**

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

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13 Phone communication can be used for logistical purposes.

14 **Effective Radio Use**

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