



National Interagency Fire Center

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Area Command Team 4 Briefing Paper

Date: August 30, 2005

Action Item 3

Name: Annual Electronic Equipment Inspections and Testing Protocol

Issue/Topic: Electronic Equipment Maintenance/Inspections, Software Upgrades, and Radio Testing Protocol

Indicators of Need for Action: Electronics equipment such as radios and repeaters are not getting annual maintenance/inspections and are not receiving manufacturer's software upgrades. Radio users need a testing protocol to determine if radios are operating correctly. In discussions with the National Interagency Incident Communications Division (NIICD) and Information Resources Management electronics personnel indicated that many of the communications issues that the wildland fire community has experienced this summer are due to the lack of annual equipment maintenance/inspections and/or lack of software upgrades at the firefighter's home units.

Key Points:

- Field unit managers, Information Service Organization (ISO), and field electronic technicians should work cooperatively to ensure that maintenance/inspection and upgrades are completed annually or as needed.
- Radio users should follow an established protocol to determine if radios are operating correctly.

Proposed Action Description: Unit managers ensure support and completion of requests for annual maintenance/inspection and upgrades of all electronic equipment including two-way radios and repeaters. Complete this item before fire season, when software upgrades are available, or when communication problems are encountered.

Field electronic technicians ensure that software upgrades are installed on all electronic equipment within their area of responsibility.

NIICD includes electronic equipment software upgrade information on their website (<http://www.fs.fed.us/fire/niicd/documents.html>).

NIICD webpage (<http://www.fs.fed.us/fire/niicd/documents.html>) expanded to include maintenance and inspection information on all wildland fire radios. Currently, only three kinds of radios' information are on the site.

NIICD develop a “Help Desk” that could assist field electronic technicians in maintenance/inspection questions.

Contracting Officers require that all contractors’ radios receive annual maintenance and inspection and all current software upgrades.

A radio testing protocol developed by NIICD and should be posted on the NIICD webpage (<http://www.fs.fed.us/fire/niicd/documents.html>). This protocol will help radio users determine if radios are working correctly: Following is an **example** testing protocol:

- Ensure that radio is maintained annually and is in the correct mode (narrowband/wideband)
- Tests should be conducted at a uniform distance between radios. Distances less than 15 feet will likely yield false results. Short distances may mask problems; therefore tests should be conducted with the radios miles apart when possible.
- Simplex and repeater channels should be tested.
- Ensure the transmission is loud and clear. Test should be more than a routine “ten” count. Use the following text for the test.
- “Radio check. Testing 1,2,3,4,5,6,7,8,9,10. How do you copy?”
- Responder should reply (if it applies), “Loud and clear. Testing 1,2,3,4,5,6,7,8,9,10. How do you copy?”
- Results should be weighed against the indicators of incompatibility listed below. If transmissions are not loud and clear, it may indicate a radio problem that should be investigated by electronics technician

CAUTION this is only a aid for users to determine an indication of basic problems, it is not intended to replace the need of regular maintenance.

User should be educated to recognize the indicators of narrowband/wideband incompatibility:

- Transmissions loud and distorted (wideband to narrowband conflict).
- Transmissions soft and quiet (narrowband to wideband conflict).
- Transmissions choppy and repeater cuts-out (wideband to narrowband repeater conflict).