



Coordination Procedures for Aeronautical Frequencies to Support Emergency Firefighting Requirements

**Federal Aviation Administration
Spectrum Engineering Group AJW-1C
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1. Introduction

This document delineates frequency coordination procedures between the Federal Aviation Administration (FAA), the National Interagency Fire Center (NIFC), the National Interagency Incident Communications Division (NIICD), Department of the Interior, and Department of Agriculture. Proper frequency coordination is important for the FAA to continue its frequency engineering support for firefighting efforts. NIFC must ensure compliance with these procedures to avoid any harmful frequency interference to FAA Systems.

These coordination procedures are effective immediately and should be reviewed annually to determine the need for modifications.

All questions concerning this document can be directed to the points of contact listed in Table 4.

2. General Information

The Spectrum Engineering group at the FAA supports the NIFC by engineering and providing coordination for the use of specific Very High Frequency (VHF) Air Traffic Control (ATC) frequencies. The coordination provided to NIFC is to support the aeronautical spectrum requirements for federal agencies that use aircraft to support fire emergencies across the country. Spectrum support for non-federal agencies is coordinated separately and these agencies must obtain their transmit authority through the Federal Communications Commission (FCC).

Any frequency coordinated by the FAA for firefighting should only be used temporarily as the need arises and within the designated operational airspace. If the operational airspace changes due to fire expansion, the new requirement must be communicated to the NIFC Communications Duty Officer (CDO) and be properly coordinated with the FAA. As a result, the original frequency provided by the FAA may have to change to eliminate the possibility of interference to ATC or other firefighting efforts.

The typical service volume for a firefighting frequency is 20 NM and 5000 ft AGL.

NIFC divides the country in certain geographical zones that are similar to Tailored Service Volumes (TSV). Depending on the predicted incidence of fires, the FAA coordinates a number of VHF ATC frequencies per zone. Every year, NIFC publishes a map with these geographical zones and corresponding frequencies for their field units (ranges).

All such frequencies are validated on a yearly basis and reserved for that entire year. The FAA does not submit NIFC requests for transmit authorizations (frequency assignments) to NTIA. These requests are submitted to NTIA by the Department of Agriculture. The FAA only provides the required pre-coordination for frequencies in the aeronautical

frequency bands and maintains the coordinated frequencies and associated technical parameters in the FAA’s database for engineering purposes.

The FAA has the right to terminate or modify the transmit authorization on frequencies coordinated for firefighting at any time if needed to support an ATC requirement that cannot be met by any other means.

Only the CDO from the NIFC-NIICD will request frequencies from the FAA. It is critical that these frequencies are used only at the location, service volume and function authorized; it is the responsibility of NIFC to ensure compliance to this requirement. Frequencies engineered for firefighting responses, can also be used in other emergency situations such as flooding or oil spills as long as they are properly coordinated with the NIFC’s CDO.

3. Firefighting Frequencies

Firefighting Aircraft require the following spectrum:

Usage	Band	Coordinated by	NIFC Nomenclature
Air-to-Ground Air-to-Air (only in CA)	162-174 MHz	Departments Of Interior and Agriculture	VHF-FM
Air-to-Air	118-136 MHz	FAA	VHF-AM
Air Tanker Base	118-136 MHz	FAA	Air Tanker Base
Fire Tower Local and Ground Control	118-136 MHz	FAA	N/A

Table 1: Firefighting frequencies

It should be noted that normal air traffic channels and procedures should be used for en-route travel to and from fire emergency locations.

3.1. Air Tanker Base Communication Frequencies

This type of frequency is used to control firefighting aircraft that arrive at the tanker bases to refill their water or retardant reservoirs when responding to a fire. There are 129 air tanker bases nationwide.

The requirement is one frequency per base with a service volume of 50 NM and 5000 ft AGL.

Usually, the frequency 123.975 MHz is assigned for this purpose. However, if the frequency is not available at a given location, the FAA will engineer an alternative frequency in the 118-136 MHz band that can be nominated for assignment by NTIA.

Note that air tanker frequencies can change based on location as the need for Air Traffic Control frequencies arise. If there is a need to change the air tanker base frequency, the applicable FAA Frequency Management Office (FMO) will communicate this requirement in advance to NIFC for proper coordination.

3.2. Air-to-Air Frequencies

Air-to-Air frequencies are used by firefighting aircraft located within a designated zone to communicate between firefighting aircraft when responding to a fire emergency. There are 104 communication zones nationwide.

In addition to the frequencies coordinated by the FAA, there are other frequencies managed by the FCC that can be used immediately without FAA notification as shown in Table 2.

Frequency	Managed by	Function	Description
122.925 MHz	FCC	Multicom-Natural Resources	FCC CFR part 87.241 paragraph (c), available for assignment to communicate with aircraft when coordinating forestry management and fire suppression, fish and game management and protection, and environmental monitoring and protection. This frequency should be used at a service volume not to exceed 40 nautical miles, 10,000 feet.
122.900 MHz	FCC	Multicom	
122.850 MHz	FCC	Multicom	
122.750 MHz	FCC	Fixed Wing Air-to-Air	FCC CFR part 87.187 paragraph (j), this frequency is authorized for use by private fixed wing aircraft for air to air communications. This frequency should be used for air to air communications between aircraft. No other frequencies are authorized for this type use in the Air Traffic Control VHF channel plan.
123.025 MHz	FCC	Helicopter Air-to-Air	FCC CFR part 87.187 paragraph (j), this frequency is authorized for use by helicopters for air to air communications. No other frequencies are authorized for this type use in the Air Traffic Control VHF channel plan.

Table 2: FCC Frequencies for use without notification to FAA

Air-to-Air frequencies are Initial Attack and Project Fire frequencies. The typical service volume for Project Fire frequencies is 20 NM and 5000 ft AGL.

Initial Attack (IA) frequencies are assigned for firefighting aircraft’s immediate response within a zone. The number of frequencies that the FAA coordinates per zone depends on the predicted incidence of fires and the availability of frequencies. When more than one frequency is coordinated per zone, the second (and in some cases the third) frequency will be used for additional fire emergencies in the zone. When no frequencies are assigned for a zone and a fire occurs, a frequency will be requested by the NIFC and provided by the FAA in real time (“on demand”).

Table 3 lists the number of IA frequencies that should be engineered by the FAA per zone by state.

Service Area	States	Number of IA Frequencies
Western	CA, NV, AZ	2
	WA, OR, ID, UT, CO, WY, MT	2 or 3
	AK	3
Central	TX, OK, NM	2
	SD, MN, MI, WI	1
	IA, KS, MO, NE, AR, LA, IL, IN, ND, OH	0
Eastern	NC, GA, FL	2
	SC	1
	CT, ME, MA, NH, RI, VT, DE, MD, DC, NJ, NY, PA, VA, WV, AL, KY, MS, TN	0

Table 3: IA Frequencies

Project Fire (PF) frequencies are provided by the FAA on a case by case and in real time for ongoing firefighting support. When a fire starts, the IA frequencies are used first but if the fire spreads quickly or intensifies, a PF frequency will be used for the remainder of the operation. The IA frequencies will be released for use at other potential fire sites located in the same zone.

It should also be noted that NIFC has coordinated the use of frequencies managed by the Aerospace & Flight Test Radio Coordinating Council (AFTRCC) for PF communications. When these frequencies are available NIFC will use them before requesting a PF frequency from the FAA.

3.3. Fire Tower Local and Ground Control

In some special cases, particularly in severe fires, FAA's Air Traffic will establish a temporary Fire Air Traffic Control Tower (ATCT) for the large number of incoming and outgoing aircraft into an area. In these cases, the FAA will provide the entire infrastructure at emergency locations including controllers and frequencies. The FAA Air Traffic personnel will contact and request the applicable FMO to engineer a Local and Ground control frequency to fulfill their requirements, and will also notify the FMO when the frequencies for the temporary ATCT are no longer needed.

The NIFC is not involved with the request or use of these frequencies.

4. Procedures

- 1) By October 31 of each year, NIFC will send IA zone maps (polygon shapes) and frequency spreadsheets that indicate any changes to zone boundaries to FAA HQ; FAA HQ will distribute this information to the Service Area (SA) FMOs.
- 2) The FMO validates or engineers/modifies the air tanker base frequencies and IA frequencies for each zone as necessary.
- 3) The FMO creates or modifies a frequency assignment in the FAA's database and saves it to "HN" status. After reviewing the assignment and performing any international coordination if needed, the Spectrum Engineering group at headquarters will save it to "HW" status.
- 4) If a new frequency to support civil ATC is required and it fails against a firefighting frequency (air tanker base, IA or PF frequency), the firefighting frequency should be replaced if possible and the NIFC should be notified.
- 5) By February 28 of each year, FMOs will send notice of all FAA coordinated frequencies to NIFC.
- 6) NIFC publishes a map of these IA frequencies specifying primary, secondary and in some cases tertiary frequencies for each zone.
- 7) NIFC through the Department of Agriculture submits a list of these IA and air tanker coordinated frequencies to NTIA.
- 8) When additional PF frequencies are required, the NIFC will send a frequency request via email to the Service Area FMO detailing location, coordinates, radius of operations, and the required flight level.
- 9) At the same time, NIFC will also follow up with a phone call to the applicable FAA Regional Operation Center (ROC) so that the FMO can be contacted and notified that an immediate requirement exists to coordinate additional frequencies to meet emergency firefighting operations, especially during off-duty hours.

10) The FMO will engineer and respond with coordination for the number of frequencies requested with an FF Serial Number, a start and tentative end date and a copy of the frequency assignments. The FMO will send their response via e-mail to NIFC with a “cc:” copy to NTIA (fab@ntia.doc.gov).

PF frequencies are valid for a maximum of 30 days and extensions should be requested at least 5 days prior the expiration date.

11) NIFC, through the Department of Agriculture, submits a request for a Special Temporary Authorization (STA) to NTIA for each PF assignment. These STA requests should be submitted to NTIA the next business day after the PF frequency is coordinated.

12) After the project firefighting operation has ended, the NIFC will send a fire frequency release notice to the FMO so that the temporary PF frequencies can be deleted from the FAA database. A notice will also be sent via the Department of Agriculture to NTIA.

5. Timeline

October 31 of each year: NIFC sends information to FAA.

February 28 of each year: FAA responds to NIFC with all air tanker and IA frequencies.

6. Points of Contact

6.1. National Interagency Fire Center (NIFC)

Function	Name	Telephone	Email
Communications Duty Officer (CDO) Main Office	Various CDO rotating	877-775-3451 208-387-5644	nifccdo@fs.fed.us
CDO Coordinator	Garold (Gary) Stewart	208-387-5718 208-559-1309 (c)	gstewart@fs.fed.us
CDO Engineering and Development	Robert (Bob) Dukart	208-387-5852	bdukart@blm.gov

Table 4: NIFC Points of Contact