Arizona State Forestry Division

2015
Wildland Fire
Radio Frequency Guide
#
A Guide for Cooperators of the ASFD

May 20, 2015 Version 1.3
The Arizona State Forestry Division (ASFD) has established a Statewide Wildland VHF Radio Frequency Guide for initial attack (IA) incidents within the jurisdiction of the ASFD. For larger scale events, Incident communications personnel, i.e. COML’s, will have access to many other radio resources for extended attack incidents beyond what is represented here.

The planning of initial attack radio channel usage and establishing partner agency frequencies into radios, in advance of incidents, strengthens preparedness. However, technology alone, no matter how expansive or advanced, is limited in its effectiveness unless it is exercised and tested regularly.

The use of the ASFD radio network by your agency for ASFD Incidents is supported through co-operative agreement and pre-authorized under the authority of the FCC Rules Regulation Part 90, Sections 90.421 and Section 2.103, AND, by your submittal of the attached ASFD Radio Frequency Sharing Agreement if not previously completed. This plan includes the 2014 ASFD Wildland Fire Communications Radio Frequency List of pre-approved narrow banded ASFD radio frequencies for your use on ASFD incidents. Please disregard this submittal request If you have previously submitted your sharing agreement within the last year as these agreements are considered a non-lapsing agreement until such time wherein a party can dissolve the aforementioned agreement.

While the ASFD recognizes the existence of many local jurisdiction two-way radio systems throughout Arizona, other wildland fire specific radio systems that should be given equal importance are identified in the 2015 Southwest Area Wildland Fire Radio Frequency Interoperability Guide available from the Southwest Interagency Coordination Center—SWCG—Communications section. The Southwest Area radio guide contains mostly Federal wildland fire agency radio frequency information and is provided to you through your agreement with the ASFD. Important: Please note the sensitive and confidential nature of the federal radio frequency information as it contains Federal radio frequency data that are considered Freedom of Information Act (FOIA) release exempt and are to be protected as Sensitive But Unclassified data (SBU).

New for 2015, The ASFD has merged radio repeater systems with the Arizona Department of Agriculture wherein the combination of both agency radio systems affords enhanced radio coverage for both agencies. As such, please note the 8 primary repeated channels along with a generalized radio repeater coverage map.

Additionally, the Arizona Interagency Radio System (AIRS) for all-risk incidents continues to be a supplementary interoperability tool for all emergency response agencies for all risk incidents. http://www.azgita.gov/psic/library/airs/. The ASFD encourages all emergency responder agencies to secure the AZDPS-Wireless System Bureau Interagency Services Agreement for AIRS usage in the event that the ASFD engages in its temporary use for wildland fire emergencies. http://www.azpsic.gov/library/airs/AIRS_MOU.pdf

**ASFD Radio Frequency Plan Use Guidelines**

1. The attached ASFD radio frequency list is suggested to be pre-programmed into all responder radios as an entire group to afford statewide coverage in the event your department is dispatched to an out of area response. Local policy will dictate radio channel/frequency assignments for an extended or beyond incident attack incident until an Incident Commander (IC) or Communications Unit Leader (COML) establishes the Incident Radio Communications Plan (ICS Form 205). The intent of this plan is to be used for initial attack incidents or until a formalized Incident Radio Communications Plan (ICS-205) can be developed for those incidents requiring more than an initial or extended incident in addition to other radio communications resources such as the pre-established 2015 Air-to-Ground radio frequency list which is also suggested to be pre-programmed in all responder radios.

2. The Incident Commander or, if assigned, the Communications Unit Leader is responsible for managing assigned radio channels/frequencies and must clear the use of local, state and federal frequencies with the controlling
agencies prior to inclusion in an Incident Radio Communications Plan (ICS Form 205) with the exception of ASFD licensed frequencies as listed in this document.

3. Clear text (plain English) should be used for all communications. Standardized channel/frequency names should be stated, e.g., “VFIRE21,” or “ASFD TAC 1.” It is strongly suggested that Channel/frequency plan for ASFD must be programed in its entirety, i.e. ASFD Channel 1 thru 11 except if published in a separate incident based ICS-205 Comm Plan where in only specific channels are needed.

4. When calling another unit/ICS position, the standard is to identify who you are calling first, followed by your call sign (e.g., “Engine 236, Battalion 4” or “Division B, Strike Team 6”). Recognize that on large mutual aid incidents, there may be several units with the same radio ID. In those cases, the agency name should also be used (e.g., “State Fire Engine 325, Daisy Mtn Engine 41”).

5. Data communications (i.e., automated or push button status keeping systems) SHALL NOT be used outside the local agency’s normal area of operation.

6. Radio programming that enables data signaling (e.g., push-to-talk identification) is prohibited on ASFD or interoperability channels (e.g., ASFD Channel 1 thru 11, VFIRE21).

7. Vehicular repeater systems (mobile extenders) SHALL NOT be used outside the local agency’s normal area of operation.

8. The use of gateways (including portable, mobile or fixed) shall be limited to the smallest geographical area of coverage to meet the temporary needs of the incident. Gateways shall only be used on channels/frequencies that are specifically licensed for that type of operation (e.g., temporary mobile relay) and must be specifically authorized based upon an approved Incident Radio Communications Plan (ICS Form 205), or be recognized as a fixed gateway as identified in the Arizona Interagency Radio System Priority Programing Guide.

9. Family Radio Service (FRS) radios are prohibited from use on Federal and State of Arizona incidents. Use of any non-public safety radio (e.g., FRS, etc.) or use of a frequency not identified on the Incident Radio Communications Plan (ICS Form 205) or identified within this ASFD Radio Frequency Channel Plan is prohibited on any incident unless approved by a COML.

10. The use of any frequency outside the agency’s normal licensed area of operation is prohibited by FCC rules and will likely cause harmful interference to other users (e.g., Strike Teams using a local channel in a distant part of the state or in other State’s).

Additional radio use information to consider:

- **Enhanced use of CTCSS or Tones** – Channel Guard, Tone, PL Tone or Code Guard are all manufacturer’s terms describing the same thing for the common use of CTCSS, (Carrier Tone Coded Squelch System). CTCSS is a pre-defined set of nationally recognized and engineered set of sub-audible secondary sub-frequencies that are becoming more widely implemented by member agencies. Some uses of CTCSS tone include: transmit tone only, tone on both transmit AND receive, and, in some cases, may or could be a different tone between transmit and receive. While some agency frequencies do not use CTCSS tones at all, other agency frequencies must have the appropriate CTCSS tones applied as noted otherwise radio communications issues may occur. The implementation of CTCSS tones are not selected at random but rather are implemented using technical algorithms and applied as needed by agency communications professionals. Radio user training should include the importance and correct use of CTCSS on your radio and never be added to radio frequencies unless specified by COML’s, COMT’s or other radio communications frequency managers or radio professionals and or as identified on authorized communications plans.

- **Air Guard use** – Most agencies follow the prescribed standards for Air Guard being the last channel on a group of frequencies, usually on channel 16 on each group for radios that are configured for 16 channels per group. This prescribed standard was developed so that in the event of an emergency a user could turn the radio channel knob to the last channel and place an emergency call without looking and searching for an emergency channel. AIR GUARD 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. Tx/Rx168.625 tx pl tone only- 110.9- there is not pl tone on the receive.

- **Air-to-Ground Frequencies** – There are pre-defined air to ground frequencies established for the specific purpose of communicating between initial attack aircraft and ground resources operating within geographic areas. Please
reference the 2015 Southwest Area Wildland Fire Radio Frequency Interoperability Guide to ensure that you are using the correct air to ground frequency for the given area or which can be found as an attachment to this document.

- **Radio Use Training** – Annual end-user radio communications refresher training should be completed prior to fire season and include some radio communications basics such as; repeater use, tactical, line of sight, air to ground use, air guard use, command channel, ICS205, 204’s & CTCSS-pl tone use. The ASFD radio use refresher training course outline is available by contacting dalebrown@azsf.gov

- **Annual Radio Equipment Maintenance Inspection Checks** - Mobile and Portable two-way radios require yearly maintenance checks to ensure that electronic devices are operating at peak efficiencies, remain reliable and conform to FCC and agency standards. If your mobile or portable radio has not been inspected by a radio communications professional in more than a year, even though it appears to be functionally correctly, then it probably should be scheduled for a maintenance check. Consult your agency Communications Section for further guidance.

- **Firefighter Safety Memo- Communications** - In August 2013, the NMAC-National Multi-agency Coordinating Group established a firefighter safety memo which addresses radio frequency misuse; http://www.nifc.gov/nicc/administrative/nmac/NMAC2013-7RadioFrequency.docx.

- **Federal Agency frequency changes** –

  - Please note the 2014 change which applies for 2015 use as well: The USDA Forest Service Region 3 (Southwest Area- includes AZ- NM and parts of Texas) obtained three Initial Attack (IA) radio frequencies for use throughout Region 3 to replace the previous use of NIFC TAC1, NIFC TAC2 & NIFC TAC3. The R-3 FS Tactical Frequencies are; 167.550 (R3 TAC 1), 168.675 (R3 TAC 2), and 168.775 (R3 TAC 3). These frequencies are available to support IA within Region 3 in the same manner as the NIFC tactical frequencies were used to support IA in the past. However, the use of NIFC Tac 1,2 & 3 Frequencies;168.050 (NIFC TAC 1), 168.200 (NIFC TAC 2), and 168.600 (NIFC TAC 3) are assigned to NIFC for national incidents and coordinated only by the NIFC CDO, (208) 384-5644. Use of NIFC TAC 1,2 & 3 is no longer available for use for Initial Attack incidents unless specifically coordinated and assigned by the NIFC CDO for specific incident use.

Please feel free to contact the ASFD Communications Section at communications@azsf.gov or 1-800-309-7081. We look forward to working with you and wish you success in your communications use.

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**Attachments contained within this document:**
Southwest Area- Wildland fire – pre-established air to ground frequencies for 2015
ASFD Radio Frequency Sharing Agreement- *(print, sign and return page 2)*
## Arizona State Forestry Division

### Radio Network 2015 (Frequency List)

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency Band/ Date</th>
<th>Arizona State Forestry Division</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VHF / 2015-5-20-15</td>
<td></td>
</tr>
</tbody>
</table>

The convention calls for frequency lists to show four digits after the decimal place, followed by either an "N" or a "W", depending on whether the frequency is narrow or wide band. Mode refers to either "A" or "D" indicating analog or digital (e.g. Project 25 or "M" indicating mixed mode). All channels are shown as if programmed in a control station, mobile or portable radio.

<table>
<thead>
<tr>
<th>Channel Configuration</th>
<th>Channel Name/Trunked Radio System-Talkgroup</th>
<th>Eligible Users</th>
<th>RX Freq N or W</th>
<th>RX CTCSS/Tone/NAC</th>
<th>TX Freq N or W</th>
<th>Tx CTCSS/Tone/NAC</th>
<th>Mode A, D or M</th>
<th>FCC Call Sign</th>
<th>Max ERP Watts</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Repeater ASFD RPT 1</td>
<td>Fire/Admin</td>
<td>151.4000 (N)</td>
<td>162.2</td>
<td>159.4050 (N)</td>
<td>162.2</td>
<td>A</td>
<td>50</td>
<td>Williams-TowersMtn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Repeater ASFD RPT 2</td>
<td>Fire/Admin</td>
<td>151.4150 (N)</td>
<td>123.0</td>
<td>159.4350 (N)</td>
<td>123.0</td>
<td>A</td>
<td>50</td>
<td>Mingus-Greens-Lemon-BlackMetal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Repeater ASFD RPT 3</td>
<td>Fire/Admin</td>
<td>151.4150 (N)</td>
<td>162.2</td>
<td>159.4350 (N)</td>
<td>162.2</td>
<td>A</td>
<td>50</td>
<td>Hayden-Signal-Mule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Repeater ASFD RPT 4</td>
<td>Fire/Admin</td>
<td>151.4000 (N)</td>
<td>123.0</td>
<td>159.4050 (N)</td>
<td>123.0</td>
<td>A</td>
<td>50</td>
<td>Elk-Dunn-Cunningham-Heliograph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Repeater ASFD RPT 5</td>
<td>Fire/Admin</td>
<td>154.6950 (N)</td>
<td>103.5</td>
<td>153.8750 (N)</td>
<td>103.5</td>
<td>A</td>
<td>50</td>
<td>Williams2-WhiteTanks-GreensPeak2</td>
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<td></td>
</tr>
<tr>
<td>6 Repeater ASFD RPT 6</td>
<td>Fire/Admin</td>
<td>154.6950 (N)</td>
<td>103.5</td>
<td>153.8750 (N)</td>
<td>131.8</td>
<td>A</td>
<td>50</td>
<td>SignalPeak2-MuleMtn2</td>
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<tr>
<td>7 Repeater ASFD RPT 7</td>
<td>Fire/Admin</td>
<td>154.8600 (N)</td>
<td>114.8</td>
<td>153.8750 (N)</td>
<td>114.8</td>
<td>A</td>
<td>50</td>
<td>JacobLake-Hualapai-Mtn2-Mingus2 TelegraphPass-Lemon2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Repeater ASFD RPT 8</td>
<td>Fire/Admin</td>
<td>154.8600 (N)</td>
<td>114.8</td>
<td>153.8750 (N)</td>
<td>103.5</td>
<td>A</td>
<td>50</td>
<td>MIKE-Heliograph2-NogalesHill</td>
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<td></td>
</tr>
<tr>
<td>9 Tactical VFIRE21</td>
<td>All-Risk</td>
<td>154.2800 (N)</td>
<td>0</td>
<td>154.2800 (N)</td>
<td>0</td>
<td>A</td>
<td>50</td>
<td>Tactical - line of sight- not monitored by dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Tactical ASFD Tac 1</td>
<td>Fire</td>
<td>159.3300 (N)</td>
<td>131.8</td>
<td>159.3300 (N)</td>
<td>131.8</td>
<td>A</td>
<td>50</td>
<td>Tactical - line of sight- not monitored by dispatch</td>
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<td></td>
</tr>
<tr>
<td>11 Tactical ASFD Tac 2</td>
<td>Fire</td>
<td>159.4500 (N)</td>
<td>123.0</td>
<td>159.4500 (N)</td>
<td>123.0</td>
<td>A</td>
<td>50</td>
<td>Tactical - line of sight- not monitored by dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Tactical ASFD Tac 3</td>
<td>Fire</td>
<td>159.2400 (N)</td>
<td>173.8</td>
<td>159.2400 (N)</td>
<td>173.8</td>
<td>A</td>
<td>50</td>
<td>Tactical - line of sight- not monitored by dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Tactical ASFD Tac 4</td>
<td>Fire</td>
<td>159.2850 (N)</td>
<td>151.4</td>
<td>159.2850 (N)</td>
<td>151.4</td>
<td>A</td>
<td>50</td>
<td>Tactical - line of sight- not monitored by dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Tactical ASFD Tac 5</td>
<td>Fire</td>
<td>151.1750 (N)</td>
<td>136.5</td>
<td>151.1750 (N)</td>
<td>136.5</td>
<td>A</td>
<td>50</td>
<td>Do not use in NE Az.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Tactical State Flight Follow</td>
<td>Fire</td>
<td>154.9350 (N)</td>
<td>0</td>
<td>154.9350 (N)</td>
<td>110.9</td>
<td>A</td>
<td>50</td>
<td>Statewide coverage-6 sites on Voter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Tactical Airguard</td>
<td>Fire</td>
<td>168.6250 (N)</td>
<td>0</td>
<td>168.6250 (N)</td>
<td>110.9</td>
<td>A</td>
<td>40</td>
<td>National Air Guard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Arizona State Forestry Division
Statewide Radio System

(Estimated Coverage Only)

If you can see the site—then most likely you will be able to contact dispatch using the repeater.

Select area then select channel number

All repeated Radio Sites are monitored by ADC except where noted—i.e. SE AZ—by TDC.

\(\Delta\) ASF D Primary Radio Repeater Site
\(\Delta\) ASF D Secondary Radio Repeater Site

- Radio Sites dispatched by TDC-Tucson Dispatch Center

- Indicates generalized radio coverage

- Indicates new radio sites for 2015 generalized coverage

*Radio Coverage is not guaranteed nor implied but rather a generalized graphical representation of possible coverage using a 40 watt mobile radio.
Radio Frequency Sharing Agreement

Authorization to share Radio Frequencies through Inter Governmental Agreement (IGA) and Co-Operative Fire Agreement between the

Arizona State Forestry Division (ASFD)

&

Arizona Fire Departments, Jurisdictions and Agencies & Organizations under IGA, Cooperative Fire Agreement and other Agreements with the ASFD

The purpose of this agreement is to provide for the sharing of specific radio frequencies that are licensed to each agency. This agreement is needed to provide safe, efficient and cost effective radio communications support for emergency relief operations conducted under the jurisdiction of the agencies making this agreement.

This agreement to share certain radio frequencies is entered under the authority of the FCC Rules Regulation Part 90, Sections 90.421 and Section 2.103 and under the authority and agreements established under the umbrella of the ASFD including Cooperative Fire Rate (CFR) and Emergency Equipment Rental Agreements (EERA’s).

The parties to this agreement hereby agree to the following conditions and agree to govern the mutual use of their respective radio frequencies identified in an attachment to this agreement.

1. Each agency shall exercise control and be responsible for all radio transmissions on their authorized/licensed frequency. It shall be possible to immediately terminate the use of a specific frequency when it is deemed necessary by the controlling agency.

2. Local dispatch and management procedures between the agencies of this agreement will be used to provide for orderly control of each other's frequencies.

3. This agreement is for mobile, portable, and transportable radios only. Permanently installed base stations are not included in this agreement.

4. Frequencies for use must include the operating frequency, bandwidth, emission, power output limitations and operational information regarding the use of the frequency.

5. Use of the listed frequencies under conditions other than identified in this agreement will be reported as interference, and appropriate action taken.

6. Some two-way radio frequencies are used only for line-of-sight (simplex) communications. The controlled use of these simplex frequencies by the licensed agency ensures effective communications. Uncontrolled use of simplex frequencies in local areas could result in operational loss of shared frequencies due to congested radio traffic. Therefore, requests for extended use of all simplex frequencies shall be forwarded to the controlling agency Dispatch Center for frequency assignment during extended use periods such as large incidents. This will only apply when the use of these simplex frequencies will potentially “tie-up” the frequency on extended incidents.

This agreement may be modified by written amendments with the mutual consent of both agencies.
Unless otherwise provided, this agreement continues indefinitely and is effective as of the date of signatures. Either party may terminate this agreement by providing 30 days written notice.

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**Agency Channel Name**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Channel Name</th>
<th>Receive Frequency</th>
<th>Receive ctcss/digital code</th>
<th>Transmit Frequency</th>
<th>Transmit ctcss/digital code</th>
<th>Narrow or Wide Band and Mode</th>
<th>TX RX</th>
<th>Channel use:</th>
<th># of radios</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYZ Fire Dept</td>
<td>150.000</td>
<td>123.0</td>
<td>154.224</td>
<td>123.0</td>
<td>N</td>
<td>10 mobiles</td>
<td>20 portables</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Return this signed page to:**

Arizona State Forestry Division-Communications  
2901 West Pinnacle Peak Road, Phoenix, Arizona 85027-1002  
(or) FAX: 623-445-0284 or EMAIL: dalebrown@azsf.gov
Memorandum

Date: February 24, 2015

To: Geographic Area Center Managers

From: Communications Duty Office Coordinator

Subject: Southwest Area Coordination Center Initial Attack Air to Ground FM Frequency Assignments for 2015 Fire Season.

The frequency information provided with this letter validates air to ground frequencies and the new naming convention for the coming 2015 fire season. Air to Ground radio frequency assignments used for initial attack are coordinated by the National Interagency Fire Center (NIFC) National Interagency Incident Communications Division (NIICD), Communications Duty Office Coordinator (CDO). Air to Air frequency assignments are provided by the Federal Aviation Administration and will be forthcoming in a separate document. The Air to Ground assignments are provided by the Department of Interior and the Department of Agriculture. It has become increasingly difficult to meet the growing demand for radio frequency spectrum and it is expected that future requirements cannot be met without aggressive frequency management and extensive sharing among all agencies.

All IA/EA/ARMZ maps are stored on the FTP site ftp://ftp.nifc.gov/Radio_Management/Initial Attack/AI_Frequencies/2015AGFrequencies and are geospatial referenced. Log on name is: radioconnection password is: Critica1Ta!kAccess

Initial Attack FM Air to Ground Assignments

Air to Ground frequencies provide communication between initial attack aircraft and ground crews operating within the initial attack zone. Agency mobiles and portables responding to initial attack within a zone require air to ground assignments to be authorized, or licensed, so that agencies may configure equipment prior to fire season, without requiring “on the fly” changes during the fire season. In the event that the assigned frequencies may not be sufficient to support extensive fire activity temporary assignments may be requested from the Communication Duty Officer (CDO) to supplement the initial attack zone.

Each agency is represented by a frequency manager and NIICD has worked with these managers to coordinate frequency resources for use in accordance with the radio frequency authorization (RFA) or temporary use authority that permits operation on that frequency.

Initial Attack Zone Boundaries

When changes to initial attack zone boundaries are planned, NIICD will make a representative available to assist GACC managers with coordination of frequency requirements in order to facilitate a timely transition. Any zone boundary changes must be planned out in advance and will not reflect changes until the next fire season.

Sensitive But Unclassified

Under the authority of the National Telecommunications and Information Administration (NTIA), Department of Interior and Department of Agriculture have designated specific frequencies nationwide for assignment and use by NIFC to support their all-risk-management missions. These radio frequency assignments are Freedom of Information Act (FOIA) release exempt and are to be protected as Sensitive But Unclassified (SBU) data.
The frequencies on this map are Unclassified but Sensitive and are not releasable under the Freedom of Information Act.