

National Interoperability Field Operation Guide or NIFOG By KD5BJ

As you will hear in our announcement portion of the net, we have been contacted by the Sheriff's Office to work on contingency plans. One most important aspect is on how Amateur Radio Communicators and Public Safety communicate. As we all know, the lack of interoperability was the one of the main challenges during the 9-11 terrorist attacks as well as in Uvalde Texas.

To understand the complexity of interoperability it is necessary to get familiar with the NIFOG, or National Interoperability Field Operation Guide, the AUXFOG (AUX for auxiliary communications) and the Texas version of the NIFOG, the Texas Fog or the Texas plan. Tonight I would like to give you a quick and superficial overview of the NIFOG and I know it would be worth your time download it as an App or PDF and get familiar with it for future reference, if you have not done so already.

The National Interoperability Field Operations Guide is a technical reference for emergency communication planning and for radio operators responsible for radios that will be used in disaster response.

Topics covered by NIFOG are, among the many, conversion of use of Interoperability, field programming, NOAA Weather radios "All Hazard broadcast"; marine and Canadian broadcasts, common emission designation, aviation frequencies, drones frequencies reference, railroad frequencies, common business frequencies, search and rescue frequencies, HF, SHARES HF, and of course Amateur radio emergency frequencies.

It also contains dos and donts on how to address operators, the use of plain language, and also what to watch for in different situations and on different modes. It also remind us of things like watch out for background noise or having no inadequate communications with responders or supervisors, radio congestions, etc.

NIFOG has a section dedicated to amateur radio operators. It designates HF frequencies that we may want to use for emergencies, making clear no public safety agency may use.

Those frequencies are 3750 or 3985 LSB; 7060, 7240, or 7290 LSB, 14300USB, 18160 USB, and 21360 USB.

The five channels for 60-meter band are intended to be used between federal government stations, the primary users, and US amateur radio stations, or secondary users. DHS, including FEMA, and the US Coast Guard (USCG) stations are also authorized to use these frequencies and have priority for radio traffic. To operate on 60-meter amateur radio operators must have General, Advanced, or Extra class privileges.

The NIFOG lists on page 105 those 60-meter bands as well as the Automatic Link Establishment (ALE) channels, Text message channels, Maritime Mobile Service Net, Hurricane Watch Net, and

National Hurricane Center channels. It also lists 17 Amateur Radio calling frequencies that are not available for Public Safety. FM radio calling frequencies use carrier squelch. A mixture of digital modes or mixed modes can be locally found, such as P25, NDXN, DMR, etc.

Amateur Radio Operators that would like to operate on either 2,200 or 630 meters must first register with the Utilities Technology Council online, and the link is provided in the Guide on p 107. Various radio bands and privileges and power limits are also listed in the guide for quick reference.

Personal Radio Services such as Multi-Use Radio Service or MURS channel are listed as well. These frequencies state that equipment must be certified per FCC rule 47, part 2 and 95; these frequencies are not authorized under part 90 certified equipment. It states that external gain antennas must be used, but must not be more than 60 feet above the ground, or 29 feet above the structure on which it is mounted. MURS can be used for voice and data, except: No store and forward packet operations; no continuous carrier operation, no Interconnection with the public switched network; no use above aircraft in flight. The frequencies are shared with itinerant Industrial-Business operations.

Citizen Band are also included in the Guide, as are the Family Radio Services (FRS) Channels, and the General Mobile Radio Services (GRMS) channels and frequencies. All but the Citizen Band are strictly prohibited for us by National Multi Agency Coordinating group (or NMAC) on Wildfire Operations.

The guide goes on discussing RF interference, Intentional Interference, or Jamming, which is a crime. It shows a plan for RF Interference mitigation such as recognize the interference, respond, report, resolve, and resilience.

Possible mitigation is alert the other team members, commander and dispatch; try to rotate the antenna 90 degrees so the antenna is horizontal to the terrain; switch to tactical channels; switch to different bands; shield the mobile radio behind a wall; find higher ground; if possible, turn on the automatic gain control on your radio; report the incident to Incident Communications Center and the COML; and, finally, consider sharing the information with neighboring jurisdictions.

The Guide recommends to start a dedicated log to document the information including the time the interference started and when it stops; Log the complaining party's name, contact info, agency, date, time, location, and affected missions.

Other things to document are the nature of the disruption, the affected equipment, recurrence if any, what it sounded like, recordings, spectrum analyzer screen shots, environmental conditions, steps taken to improve and regain ability to use the equipment as well as possible causes of the disruption. The guide also offers contact information for reporting as well as useful references. Of course this is just a short summary of the NIFOG. The guide is 184 pages long. This is KD5BJ back to net.