

# THE REPEATER

Newsletter of the North Shore Emergency Association

Vol. 54, No. 12

July, 2020

[www.NSEA.com](http://www.NSEA.com)

## FCC GMRS DATA

Total Active GMRS Licenses = 75,159  
Total Active GMRS in Illinois = 2,049  
Number Issued in June = 2,843  
Number June in Illinois = 80

## NSEA DATA

Regular Voting Members = 15  
Probationary Members = 1  
Auxiliary Members = 8  
Out-of-Area Members = 6  
Applicants = 13  
Affiliated GMRS Users on Roster = 49  
Added on Systems - Last 3 Months = 17  
Added on Systems - Last 30 Days = 6

## FOR REPEATERS PERMISSION

Click this link:

<https://nsea.com/Contact.html>

## FOR FCC RULES

Click this link:

[https://www.ecfr.gov/cgi-bin/text-idx?SID=b7b411dcef7e2b190049b5ebfc58be1c&tpl=/ecfrbrowse/Title47/47cfr95main\\_02.tpl](https://www.ecfr.gov/cgi-bin/text-idx?SID=b7b411dcef7e2b190049b5ebfc58be1c&tpl=/ecfrbrowse/Title47/47cfr95main_02.tpl)

## FOR NSEA RADIO PROCEDURE

Click here:

<https://nsea.com/Radio%20Procedure.pdf>

## TRAINING FOR GMRS OPERATORS

WEATHER SPOTTING

Skywarn online training:

[https://www.weather.gov/lot/spotter\\_talk](https://www.weather.gov/lot/spotter_talk)

For Reporting: (800) 692 – 2110

## WHY ARE “NARROW BAND” GMRS RADIOS INCOMPATIBLE WITH VIRTUALLY ALL EXISTING GMRS REPEATERS

The FCC technical specs for GMRS are in found in §§ 95.1771 (emission types), 1773 (emission bandwidths), and 1775 (modulation) of the Rules. These specs are “*Wide Band*” for all the main channels (462 and 467MHz) and for the 462 interstitials. These have been the technical standards for GMRS since 1968. Prior to 1968 GMRS channels were spaced twice as wide, (at 50 KHz with modulation at +/- 15 KHz.) So “*Narrow Banding*” doubles the number of available channels by halving the channel widths.

When the Family Radio Service (FRS) was created it was sandwiched in between the existing GMRS channels, so it was mandated to be “*Narrow Band*”, that is a signal HALF as wide as normal GMRS in order to fit in between without overlap interference. That is why the 467 interstitials for GMRS are also mandated to be “*Narrow Band*”.

So both the GMRS repeater input and out channels are governed by the old existing “*Wide Band*” specs and virtually all GMRS repeaters are operating under such parameters. This makes them INCOMPATIBLE with new GMRS radios that are designed as “*Narrow Band*”. Why is this?

Radio transmissions take up more than one exact frequency. For FM this is necessary because the actual frequency is **varied** by the audio of the transmission. Looking at a radio signal displayed on a Spectrum Analyzer, the width of the transmission shows up something like this:

(See over)

## A BRIEF HISTORY OF UNIT NUMBERS

Class D CB Radio (27 MHz) was created by the FCC in 1958. In the early days of CB (early 60’s) when CB operators had more than one radio, they ID’ed with their Call Sign, followed by a unit number. For example, KPJ 1093, mobile unit 2. Each different radio had a different unit number. Thus my unit 1 was my dad’s car, unit 2 was my mom’s car, unit 3 was my car, and unit 4 was my motorcycle. This was common custom and usage at the time.

When NSEA was issued a group Call Sign (KRK 4227), we adopted unit numbers in the 100 series. So, my motorcycle (unit 4) became KRK 4227, motorcycle unit 104. NSEA had over 50 unit numbers in the 100 series and each radio continued to have its own unit number.

In January of 1971 our repeater went on the air. The first users were myself, Jim Schmidt, Jack Ferber and Rich Cassler. We needed a new numbering system. Initially we used a code consisting of: (1) First letter of first name; (2) X for mobile, Q for portable, or B for base, and (3) last 2 digits of year of birth. So my RCA tube mobile was RX47, for example. At the time NSEA members Jim Schmidt and Rich Casey both lived in Morton Grove and monitored the VHF Police channel. Morton Grove utilized unit numbers in the 5500 series and Jim wanted us to adopt the same numbering system for our class A CRS UHF channel. I felt this was unprofessional so we compromised on the 500 series.

When we got our group Class A license (KAA 8942) we had to specify how many mobile units we had. So we continued to issue unit numbers for each individual radio to keep track of what we had to specify for our license. And we also charged repeater fees based on the number of radios in use.

## DISASTERS (FEMA)

IS-100.c - Introduction to the Incident Command System (ICS);

IS-230.d – Fundamentals of Emergency Management; and

IS-700.b – An Introduction to the National Incident Management System (NIMS).

<https://training.fema.gov/is/>.

FEMA SID number:

<https://cdp.dhs.gov/femasid>

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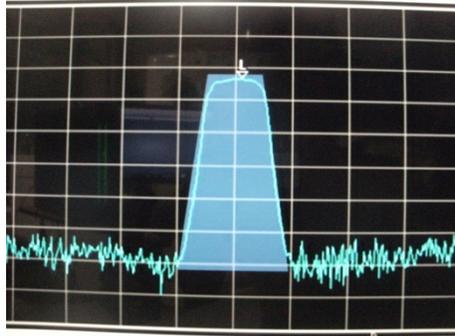
## WEATHER SPOTTING TRAINING

NSEA has been active in severe weather spotting since 1968. At that time the Weather Auxiliary Reporting Network (WARN) had over 600 participating stations on 27 MHz CB in Wisconsin, Illinois, and Indiana. Former NSEA Executive Director Rich Casey (WA9LRI) was instrumental in involving the 2 meter Amateur Radio (Ham) community in severe weather spotting during his term as president of the Chicago FM Club (CFMC).

All members and applicants are urged to take the training and become “trained spotters”. The link to do so online is listed above and you need only invest a little over an hour of your time to complete the course.

Even if you have received the training before, keep in mind that the National Weather Service wants its spotters to refresh their training and certification every couple of years. Who knows, not only may you refresh your memory, but you may well learn something new. I know I did in April when I refreshed my training and certification. New emphasis on taking time to monitor a storm’s development looking for rotation gave me new insights.

Once you are (re)trained please let us know and we will keep track of this important data!



The distance from left to right is the *bandwidth* of the signal. For *Wide Band* GMRS the maximum width is 20 KHz. This is because GMRS channels are spaced 25 KHz apart. Don’t forget that the frequency deviation for GMRS is +/- 5 KHz, so, with the bandwidth PLUS the deviation, a GMRS signal can occupy a total of 25 KHz, which equals the total channel spacing.

“Narrow Band” signals are only ONE HALF as wide. So maximum frequency deviation (audio) is only 2.5 KHz, and total bandwidth only 12.5 KHz. This means that new GMRS radios configured “*Narrow Band*” are operating with specs for FRS, not GMRS! The audio is effectively only HALF as loud as GMRS. These radios sound very very soft on GMRS repeaters and are hard to understand. But the GMRS repeater output is TWICE as much as the narrow band radio receiver is expecting, and reception will be badly distorted or maybe even non-existent.

Expressed in more technical terms, the GMRS “*Wide Band*” emission designator spec is 20K0F3E, while the narrow band spec of new “*Narrow Band*” radios is only 9K84 or 85, F3E. In these emission designators the first 3 or 4 characters are the bandwidth of the signal (in kilohertz), the F stands for FM, the 3 is a single channel analogue signal, and the E is Telephony (voice).

Bottom line is: DO NOT buy any GMRS radio that is “*Narrow Band*” unless you plan to ONLY communicate with FRS Walkie-talkies!

As more and more other groups joined our repeater, we needed many more unit numbers. First to join was Northbrook ALERT, so we assigned them numbers in the 600 series. Eventually 7 other groups also joined, including Oak Park REACT (Joan and Larry Shrigley), NW REACT (Bill and Judy Simpson), Apollo REACT, and others. Eventually numbers were issued in the 200 series, 300 series, 400 series, 700 series, and 900 series. NSEA adopted unit 500 as a general call for any NSEA unit, and unit 1000 as any unit from any group on the repeater. We also adopted our 580 series for auxiliary members and 590 for probationary members.

Today 501-569 is assigned to Regular Members, 570-589 to Auxiliary Members, 601-625 to NSEA owned radios, 629-649 to Out of Area Members, 680-699 to Probationary Members, 701-719 to Apollo REACT, and 720-799 to non-member UHF users. Base stations (using fixed antennas) are assigned Township Names.

So now you know the full story on unit numbers :)

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## WRITE AN ARTICLE FOR THE REPEATER

While I am Editor of this Newsletter, I am far from the only one with an opinion or something to share with the GMRS community. All readers are welcome and encouraged to submit material for publication here.

Send me your articles in a Word or text file that I can copy and paste into the format of the next forthcoming edition, and I’ll credit you with a byline!

Or if you have any ideas of something you would like to see here, please write me and let me know and I’ll try to get it addressed in the next issue.

This is YOUR Newsletter, thank you!

- Randy

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Would you like to contribute to The Repeater? Submissions are encouraged. Send to Randy@NSEA.com.