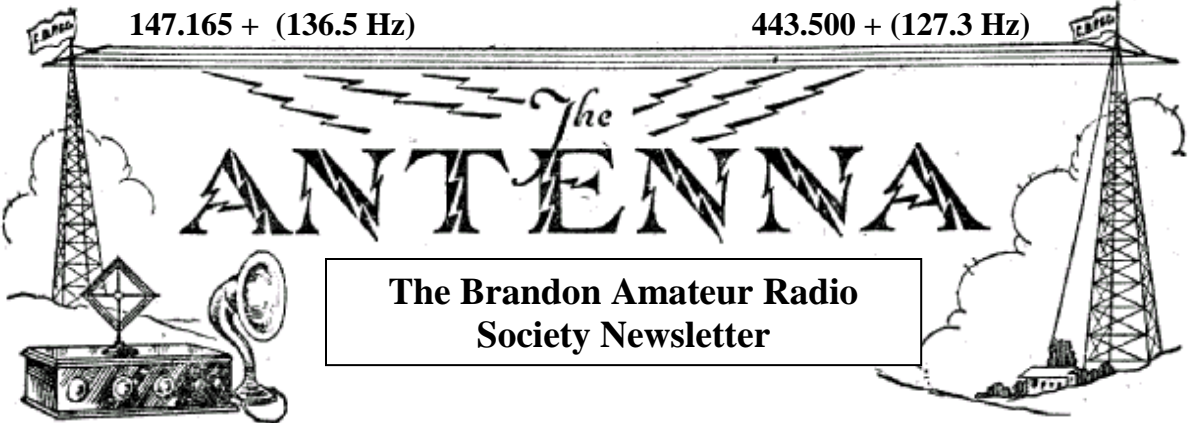


147.165 + (136.5 Hz) 443.500 + (127.3 Hz)



**The Brandon Amateur Radio
Society Newsletter**

OVER 41 YEARS OF PUBLIC SERVICE TO THE BRANDON AREA
BRANDON, FLORIDA, USA
VOL XLV, NUMBER 7 JULY 2018

**Summer is Flying by! Come out for the BARS Meeting
Thursday July 19th**

Thursday is our meeting date at the new location of ARISE Assembly of God at 401 Pauls Drive in Brandon. Things get underway at 7:30 p.m. when Scott bangs the gavel to start things off.

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Misty Nickerson NV1F, Silent Key



Word came from multiple sources this past Friday and Saturday, of the passing of Misty Nickerson, NV1F. Misty passed away early Thursday morning July 12th. Biff Crane K4LAW passed this item along: “For those of you who didn't have an opportunity to meet Misty, she was a very active ham in both the Brandon Amateur Radio Society and the Tampa Bay Amateur Radio Society (which merged together with TARC). She was one ham who never had to ID because her voice and accent were completely different than any other on the repeater. Although she had not been as active the last few years, there are those of us who remember her well from back in the day.”

Misty was an active Field Day participant with the BARS club for many years and helped the CW effort as a logger with Mark WB9UJS. She was an accomplished radio operator and also served as an Official Observer for the

ARRL.

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Changes in Family Radio Service and General Mobile Radio Service

A few months ago I met someone with a Family Radio Service radio. Naturally, I wanted to take a look at it. I was surprised to discover that it had a bunch of extra channels compared to the 20-year old version I had in my toolbox at the home QTH. I did a little homework and discovered that there have been some changes in the Family Radio Service and the General Mobile Radio Service in the past year. As we go through this you will notice there is a lot of frequency sharing between the two radio services.

Most hams are familiar with the Family Radio Service (FRS) and General Mobile Radio Service (GMRS). Many hams have some of these radios. FRS radios are handy when communications requirements make it necessary to use unlicensed personnel to assist in radio communication chores. I have participated in communication exercises in other areas where unlicensed volunteers used FRS radios to communicate with an area control station that was staffed by a ham who relayed information from the FRS volunteers to the net control via the ham frequencies. A lot of restaurants use FRS radios to allow the serving staff to communicate with the kitchen or to request cleanup of spills in the restaurant.



If you take your handheld scanner on a cruise (who doesn't?) you will hear a lot of FRS activity as family members use the low power UHF radios to keep track of one another. In most tourist attractions and activities, it's possible to pick up a lot of FRS activity. I have even answered a CQ on FRS radios in larger urban areas.

FRS was established by the FCC in 1996 as the result of a proposal by Radio Shack in 1994 for a low power, short range, unlicensed radio service for families. As we pointed out earlier, FRS has been adopted on a large scale by businesses as a low cost alternative to business band radios.

The original set up for FRS was 14 channels in the 460-MHz band. **Figure 1** shows the original channel layout. These frequencies were taken from the GMRS repeater pairs. You will notice that the first seven channels are in the 462 MHz range and the second seven channels are in the 467 MHz range: a 5 MHz split. My first FRS

Cobra 115 FRS Radios

radio was a Kenwood, which in addition to the privacy tones featured enciphered speech. FRS radios use narrow-band FM (2.5 kc deviation) with a channel spacing of 12.5 kc. In the original scheme, the power was limited to ½ watt. No detachable antennas were permitted. Users were limited to the small helical whip, which was permanently affixed to the radio. There were some models for use in a car in which the radio itself was inside a dome with an antenna and a mounting magnet to be placed on the car roof.

| CH | FREQUENCY | CH | FREQUENCY |
|----|-----------|----|-----------|
| 1 | 462.5625 | 8 | 467.5625 |
| 2 | 462.5875 | 9 | 467.5875 |
| 3 | 462.6125 | 10 | 467.6125 |
| 4 | 462.6375 | 11 | 467.6375 |
| 5 | 462.6625 | 12 | 467.6625 |
| 6 | 462.6875 | 13 | 467.6875 |
| 7 | 462.7125 | 14 | 467.7125 |

Figure 1: Original FRS Channels

The radio had a long microphone cord and a multi-purpose speaker-microphone, which allowed the user to select channels and control the volume from inside the vehicle.

21 years later in 2017, the FCC announced changes in FRS and GMRS. The number of available channels went from 14 to 22. Power limits on some channels are now up to two watts. See the new channel allocations and power limits in **Figure 2**.

| Channel | Frequency | Power Watts (ERP) | Channel | Frequency | Power Watts (ERP) |
|---------|-----------|-------------------|---------|-----------|-------------------|
| 1 | 462.5625 | 2 W | 12 | 467.6625 | 0.5 W |
| 2 | 462.5875 | 2 W | 13 | 467.6875 | 0.5 W |
| 3 | 462.6125 | 2 W | 14 | 467.7125 | 0.5 W |
| 4 | 462.6375 | 2 W | 15 | 462.5500 | 2 W |
| 5 | 462.6625 | 2 W | 16 | 462.5750 | 2 W |
| 6 | 462.6875 | 2 W | 17 | 462.6000 | 2 W |
| 7 | 462.7125 | 2W | 18 | 462.6250 | 2 W |
| 8 | 467.5625 | 0.5 W | 19 | 462.6500 | 2 W |
| 9 | 467.5875 | 0.5 W | 20 | 462.6750 | 2 W |
| 10 | 467.6125 | 0.5 W | 21 | 462.7000 | 2 W |
| 11 | 467.6375 | 0.5 W | 22 | 462.7250 | 2 W |

Figure 2: New FRS Frequencies

A realistic expectation of the range for FRS radios is from ¼ mile to 1 mile. There have been isolated instances of FRS radios communicating over 30 miles, but that is the exception rather than the rule. The GMRS provides greater flexibility than the FRS does.

The GMRS started out as Class A Citizens Band in the 1960-s. Class D Citizens Band was the 27 MHz service. The General Mobile Radio Service (GMRS) is a licensed radio service that uses channels around 462 MHz and 467 MHz. The most common use of GMRS channels is for short-distance, two-way voice communications using hand-held radios, mobile radios and repeater systems. In 2017, the FCC expanded GMRS to allow short data messaging applications including text messaging and GPS location information. **Figure 3** shows GMRS repeater frequencies.

| Repeater Input | Repeater Output | Power | Bandwidth | Notes |
|----------------|-----------------|-------|-----------|---|
| 467.550 | 462.5500 | 50 w | 25 KHz | In the FRS the 462 MHz frequencies are limited to 2 watts and have a 12.5 KHz bandwidth. The input frequencies (467 MHz) are not in the FRS allocation. |
| 467.5750 | 462.5750 | 50 w | 25 KHz | |
| 467.6000 | 462.6000 | 50 w | 25 KHz | |
| 467.6250 | 462.6250 | 50 w | 25 KHz | |
| 467.6500 | 462.6500 | 50 w | 25 KHz | |
| 467.6750 | 462.6750 | 50 w | 25 KHz | |
| 467.7000 | 462.7000 | 50 w | 25 KHz | |
| 467.7250 | 462.7250 | 50 w | 25 KHz | |

Figure 3: GMRS Repeater Pairs

There are 14 other channels for simplex work in GMRS, which are also shared with the FRS. These are the original 14 FRS channels pulled from GMRS. Note in **figure 4** that on some of these channels the GMRS power limitation is five watts while on others the power limit is the same as the FRS: ½ watt.

| Frequency | Power | Bandwidth |
|-----------|-------|-----------|
| 462.5625 | 5 w | 25 KHz |
| 462.5875 | 5 w | 25 KHz |
| 462.6125 | 5 w | 25 KHz |
| 462.6375 | 5 w | 25 KHz |
| 462.6625 | 5 w | 25 KHz |
| 462.6875 | 5 w | 25 KHz |
| 462.7125 | 5 w | 25 KHz |
| 467.5625 | 0.5 w | 12.5 KHz |
| 467.5875 | 0.5 w | 12.5 KHz |
| 467.6125 | 0.5 w | 12.5 KHz |
| 467.6375 | 0.5w | 12.5 KHz |
| 467.6625 | 0.5 w | 12.5 KHz |
| 467.6875 | 0.5 w | 12.5 KHz |
| 467.7125 | 0.5 w | 12.5 KHz |

Figure 4: Simplex GMRS Frequencies

Now you have the current lowdown on FRS and GMRS radio activity. Go reload your scanner to listen to the activity on the new FRS frequencies.

Night of Nights 2018

The 19th running of the Night of Nights occurred this year during the evening of July 12th and continued into the early morning hours of July 13th.

What is the Night of Nights and how did it start? On 12 July 1999 a ceremony was held at the receive site for coast station KFS at which the last commercial Morse message in the US was sent. Or so it was thought. But that was also the date on which the Maritime Radio Historical Society (MRHS) was founded, with the mission to assure that commercial Morse would not perish from the Earth.

Why bother with it? Morse code is clearly obsolete, nobody uses it, it's just beeps in the air. So who cares if it perishes? The people at that ceremony at KFS cared. They cared deeply. Hard-bitten grizzled old buzzards who had spent their life at sea as radio officers were weeping. They were seeing their profession, their passion and, in a way, their life passing away before their eyes. So it became the mission of the MRHS to make sure that the skills, the culture and the traditions of these men and women would be remembered and preserved through the restoration and operation of one of the greatest of all coast stations: KPH.

Both KPH and KFS were on the air from the Point Reyes site in California. There were BARS members in the Tampa Bay Area also participating in the event. Ron Perrett K4FZU and Mike Fletcher NI4M were on board the S.S. American Victory with Dean Seaver W8IM. Bernie Huth W4BGH and Mark Haskell WB9UJS were also actively monitoring from their ham shacks and texting intercept information to one another and also to the American Victory. The ship originated several messages on the commercial circuits and received incoming traffic as well.

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That's it for this month. Have fun with radio!

Keep in Mind Our Weekly Nets and Bulletins

Monday 8 p.m. The Two Meter Net 147.765 - 147.165 MHz Hosted by Doris Haskell WB9VDT

Tuesday 7 p.m. 6-meter Roundtable 50.200 MHz USB followed at 8 p.m. with the 10 Meter Roundtable 28.365 MHz USB

Send us your articles AND PICTURES! We do much more in the digital format! I would like to have pictures of BARS members and their ham shacks!

Remember to check out the BARS website:

brandonhamradio.org