

To the Federal Communications Commission:

Re: Please ignore and do not act on RM-11769 or RM-11708

Proposal RM-11769, like RM-11708, is a direct assault on the narrowband modes of CW and RTTY, which by nature of the narrow bandwidths they occupy, require federal protection from interference (and not any sort of voluntary band plan or wide-open spectrum sharing allocation as proposed in RM-11769 or RM-11708). Like RM-11708, this appears to be an attempt at a spectrum grab which would unfortunately harm the vast number of current amateur operators who are actively enjoying CW and narrowband RTTY operations in the US (not to mention interference that would have a global impact, as well).

Tremendous evidence was already provided in opposition of RM-11708, where a majority of commenters went on record AGAINST the ARRL's controversial petition. The evidence in the RM-11708 record demonstrated the popularity of narrow band CW and RTTY modes even in the no-code licensing era, documented how the wideband interference levels would render CW and RTTY unusable in the case of interfering wideband stations, provided evidence of the already existing large amounts of interference that was experienced by amateurs attributed to existing automated wider- band data stations or HF mailboxes that are grandfathered in and allowed to use wider bandwidths while failing to listen-before-transmitting, as well as the large amount of seemingly automated "ballot stuffing" in the early days of the RM 11708 FCC posting (presumably by an organized group or groups wishing to gain access to the protected CW/Data HF sub bands). This body of evidence that is part of the public record of RM-11708 must also be relied upon in the present RM-11769 proceedings, and is hereby incorporated by reference.

The narrowband modes of CW and RTTY require federal protection. Far from "legacy" modes, the narrowband modes of CW and RTTY (with RF bandwidth less than or equal to 500 Hz RF bandwidth) are among the most popular in our hobby, and allow beginners and old-timers alike the ability to communicate very far distances with very low power, thanks to the very low narrowband CW Signal to Noise Ratios that allow detection by the human ear at much lower signal levels and much less bandwidth than for voice. Furthermore, RTTY and narrowband data signals such as PSK31 allow amateur operators to talk with each other using very narrow portions of the spectrum, as little as 31 Hz or RF bandwidth for PSK31. (see G4UCJ's website on HF data modes, showing that 15 PSK31 signals may be spaced out and can easily fit into one 2.4 kHz SSB signal, at http://hfradio.org.uk/html/digital_modes.html).

The FCC must acknowledge the facts above, and must allow and protect human communication (e.g. CW) as well as narrowband data communication, and should repudiate both RM-11769 and RM-11708, since the use and enjoyment of 15 PSK31 transmissions in the same bandwidth as a single 2.4 kHz voice or wideband data signal is NOT an inefficient use of the spectrum, but rather is EXTREMELY EFFICIENT, and extends and enhances the enjoyment of the hobby to 15 times as many hobbyists in the same RF bandwidth.

The same case is made for human CW operations, where 6-10 CW transmissions may operate in the same band as a single 2.4 KHz voice or wideband data signal.

Taking away the federal protections of the CW/narrowband data (such as allowing spectrum sharing with signals having greater bandwidth than 500 Hz, or allowing wide band data signals with greater than 300 baud transmission rates) will create great impairment to the myriad number of narrowband operators on the HF bands today, as was documented by many filers in RM-11708. This is factual, since narrowband signals are UNABLE to operate in the face of wideband interference, but wideband interferers ARE able to operate in the face of narrowband interferers. FCC protections against wideband interference are vital (and cannot be voluntary or abandoned) for amateur radio operators using CW and narrowband RTTY if they are to continue to be guaranteed to enjoy the hobby.

Those who use CW and narrowband data are great innovators and inventors, and add a great deal to the hobby and the general skill of the art. Indeed, operators who are challenged to use narrow band modes in the hostile HF channel are often found to go to great engineering lengths by building extraordinary contest stations, extensive filtering circuits, innovative receiving antennas, and the development and use of new narrowband modes. Just as one example, Noble laureate and retired professor K1JT Joe Taylor invented JT65, an HF digital mode that occupies only 65 Hz of RF spectrum. As stated by the ARRL: "JT65 is an excellent digital mode for use on HF with very low power." (Please see: <http://www.arrl.org/digital-modes>). This mode and many others would be in peril if either RM-11769 or RM-11708 were adopted.

The FCC must retain its current protections on these narrowband modes, and must continue to ensure wider band transmissions are not allowed to coexist and operate on top of them. The FCC must ignore RM-11769 and RM-11708 for the continued good of the hobby and for the protection of the hundreds of thousands of amateurs who rely on the vital CW and narrowband data modes.

One final comment about RM-11769 is that the petitioner incorrectly calls the narrowband data sub bands the "CW only" sub bands. In fact, the FCC calls these sub bands the CW/Data sub bands, which are the ones that are located at the lower portion of the HF bands. The CW/Data sub bands require continued FCC protection from wider band signals. Already, the grandfathered wider-band automated repeater/mailbox stations that exceed a 500 Hz bandwidth limit have created terrible interference to narrowband operations, and as shown in RM-11708, are thankfully not a bigger problem because of the existing baud rate speed limit imposed by the FCC. That speed limit has helped preserve CW and RTTY, even in the face of growing interference from those wider band automated mailbox stations that fail to listen-before-transmission. The existing protections help not only US amateurs who use narrow band modes, but also the global ham radio community.

If the FCC were to take any action on RM-11769 or RM-11708, it should be to establish a RF bandwidth limit of no more than 500 Hz on ANY CW or DATA transmission in the CW/DATA HF sub bands that are on the lower portion of every HF band, where any such signal (CW or data) would use only as much spectrum as necessary ("necessary bandwidth") and would be forced to use human-means or computerized activity detectors to listen-before-transmitting, and would provide a 10% guard band at

the edges of its transmission bandwidth within the 500 Hz maximum allocation, while ensuring that all emissions outside the "necessary bandwidth" (key clicks, splatter, intermodulation distortion, harmonics, etc.) would be at least 50 dB down from the average power of the transmission. At the same time, the Commission would be very wise to put the wider-bandwidth data signals (being proposed by RM-11769 and RM-11708, as well as the slower baud rate systems that operate at 2.4 kHz bandwidth today and which have been grandfathered in during the 1990s but are limited by baud rate in today's regulation) into the Voice/Image portion of the HF spectrum.

Thank you for your consideration and for your continued preservation of CW and narrowband data – vital modes that play a major role in today's amateur radio hobby.

Sincerely,

Ted Rappaport, N9NB