

by Edith Lennon, N2ZRW, Editor

The Low-Down On Low-Power FM

Since the inception of *Popular Communications* this page has held the radio spectrum as a national (international, I should say) resource. Like all such resources it is at once precious and finite. And for that reason it will always be fought over. That's normal. And all competing interests have the right to make their cases. That's democratic.

We're seeing a lot lately of pushing and pulling regarding spectrum. It's been intense, to say the least. The recent 700 MHz auction was a clash of titans, with players like Google and Verizon wielding their prodigious clout against a comparatively tiny contender, the "public interest," which took the form of public safety groups and first responders and had the weight of the FCC behind it. And it's not over yet. The swath of spectrum set aside for public safety organizations, the D Block, must be "reauctioned" as it failed to reach its minimum bid during the March blowout. The ever-tumultuous transition to DTV, still many months away, will also have spectrum spectators on the edge of their shack chairs till that all shakes out (we'll be taking a look at that next month).

Receiving less ink, but still critically important to radiophiles—and other big players wielding clout—is the ongoing battle over low-power FM (LPFM) radio. Making their contending cases in a back and forth that's gone on for nearly a

decade are community access groups and other "radio activists" on one side and the likes of the National Association of Broadcasters and National Public Radio on the other. With the FCC having just closed its most recent *Report and Order* to collect comments on the issue, the fight for the prize (spectrum access) moves back to Congress for the familiar tug of war.

For one interesting and informative look at where things stand today (and why) concerning LPFM, we turn to a just-released piece out of the Cato Institute (see box; original can be found at www.cato.org/tech/tk/080528-tk.html), which seems especially appropriate for this issue with its focus on certain notorious users of that slice of national resource: pirate broadcasters. It is reprinted in its entirety with permission.

A Correction

The May "Radio Resources" column on DSP noise reduction speakers referred to BHI Ltd. as the supplier of the filtering chip contained in SGC's speaker. SGC uses its own ADSP (Advanced Digital Signal Processing) technology in its product. We regret the error.



Cato's TechKnowledge

Low-Power FM: Freedom Is Diversity

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by James Plummer

Last month, the Federal Communications Commission collected yet another round of public comments on the future of low-power FM radio (LPFM). The comments were submitted in response to a "Third Report and Order" concerning LPFM

Popular Communications invites your comments, questions, criticisms, compliments, article submissions—in a word, your thoughts. Write to me at editor@popular-communications.com.

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service issued late last year. Since the FCC's initial report was filed in early 2000, the regulatory battle has been so fierce that this "third" report is actually the fifth proposed set of rules. Large commercial broadcasters, National Public Radio, and community activists have all sought to bend the FCC's rules to their advantage. The twisted saga spotlights the need for a regulatory approach that is both hands-off and even-handed. Only this will encourage diversity and free choice in radio programming.

After years of playing cat-and-mouse with low-power "pirate" radio stations unlicensed by the FCC, the commission finally published proposed rules on issuing licenses to low-power FM stations and began receiving public comments in January 1999. Advocates of LPFM "microradio" argue that the start-up costs for a fully licensed full-power FM station (which are in the seven figures) preclude smaller, independent individuals and groups from getting on the air. The Telecommunications Act of 1996, which deregulated media ownership to allow one corporation to own more stations in a single city (and nationwide) than previously, further drove up the demand for, and cost of, FM licenses.

The FCC issued its initial order on LPFM in early 2000, announcing that it would start granting licenses for locally owned, nonprofit, 10-watt and 100-watt LPFM stations. A 100-watt station can typically broadcast over a radius of 3.5-5 miles. Seeking a compromise between demands from established broadcasters and microradio advocates, FCC set interference rules restricting new licenses from second-adjacent stations on the FM dial. This means that if an FM station is already broadcasting at 90.1 FM, for example, no LPFM licenses could be granted for adjacent FM stations on 90.5, 90.3, 89.9 or 89.7 FM.

Although many microradio enthusiasts argued at the time the rule was too restrictive given modern technology, NPR and the commercial National Association of Broadcasters immediately took their scare campaign to Congress, which dutifully passed a law establishing a third-adjacent interference rule for LPFM licensees. The Radio Broadcasting Preservation Act of 2000 ruled out new LPFM stations two slots away—in our example precluding 90.7 and 89.5 FM. This left only one slot available in the country's 50 biggest cities, quashing potential new competitors.

But Congress also directed the FCC as a part of that law to prepare a report on the interference created by second-adjacent channels. The FCC farmed the report out to the independent contractor MITRE, and their report, issued in 2003, found that LPFM stations would not interfere with a full-power FM signal only two channels away after all. The FCC is urging Congress to go back to the second-adjacent rule in their latest report and bills currently pending in the House and Senate would do just that.

The Senate Commerce Committee, however, added two restrictive amendments to that body's version of the bill. One keeps the third-adjacent rule in place for New Jersey (thanks to Sen. Frank Lautenberg, D-New Jersey). The other is a punitive measure to keep anyone who has ever operated a "pirate" radio station from obtaining an LPFM license—despite a near-identical provision in the 2000 law having already been struck down in federal court.

While the FCC was spending 2003 reviewing and approving the MITRE report, it also opened a license window for "FM translator" stations. Translator stations simply translate the signal of an existing station, whether AM or FM, onto another frequency. They typically ensure a local broadcaster's signal

can be heard throughout a community despite geographical features like mountains or skyscrapers that block one signal from reaching the entire populace. These stations are technologically similar to LPFM stations, being low-wattage (up to 250 watts versus full-power stations which range up to 100,000 watts). LPFM and translator stations are both "secondary services" which must yield to full-power "primary services" under FCC rules.

Noncommercial stations are allowed under the "FM translator" rules to have translators outside their primary coverage area. And translator stations are not hobbled by the arbitrary third-adjacent rule, or even a second-adjacent rule, but instead can use "contour mapping"—that's a fancy way of saying that licensees should produce an engineering study proving that the new translator would not interfere with the signal of an established full-power station. FCC's latest report mercifully, if tentatively, recommends that LPFM stations receive the same courtesy.

The FM translator license window obviously established a double standard on adjacent spectrum—with translators getting the best treatment and LPFM held to the third-adjacent rule. But it unleashed some unintended consequences as well. About 3,500 construction permits had been granted for translators when FCC suspended application processing in 2005 because it realized that the vast majority of licenses had been given to squatters and speculators with no intention of actually building radio transmitters. The number of actual FM translators had increased by less than 100 over those two years.

The other surprise was that some Christian broadcasting groups were "translating" the signal of a single full-power station to dozens or even hundreds of low-power FM translator stations via satellite, creating a national radio network (with 100-watt transmitters typically running no more than \$10,000) for a much lower cost than previously possible. This predictably enraged advocates of low-power "localism" even as it gave more listening options to the public. As a result, some microradio advocates are demanding the FCC limit the number of FM translators one entity may own to 10 nationwide.

NPR, which relies heavily on translators in rural areas, vehemently opposes such a restriction. On the other hand, NPR is asking the FCC not to require that a newly licensed full-power station which creates interference for an existing LPFM station be obliged to help the smaller entity move its facilities or frequency. Some property rights are more equal than others, apparently.

It is welcome that the FCC's latest LPFM "Report and Order" invites Congress to allow more small, independent broadcasters. And the rules move toward freedom and regulatory flexibility in other ways, too, such as by lifting restrictions on the transfer of licenses, geographically expanding the definition of "local," and allowing two or more part-time LPFM stations to time-share on the same frequency.

The FCC and Congress are both poised to further open up the FM spectrum. Both should ignore the pleadings of special interests on all sides as they do so. "Contour mapping" should replace arbitrary adjacent-channel restrictions for LPFM. Double standards between LPFM and translator stations should be ended and onerous ownership restrictions on both LPFM and FM translator stations should be eased.

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