



# ARRL Spectrum Defense Matters

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## A Note from the Chief Executive Officer

World Radiocommunication Conferences (WRCs) require a continuous cycle of preparation. One of the tasks facing the delegates to WRC-12, now just a couple of months away, is to develop the recommended agenda for the next WRC that may be held in the fourth quarter of 2015. While the agenda is not formally adopted until the ITU Council approves the recommendation, preparatory work will begin as soon as WRC-12 concludes on February 17.

The first step will be to organize the preparatory work by assigning it to the appropriate Working Parties of the ITU Radiocommunication Sector Study Groups. This will be done at a short Conference Preparatory Meeting (CPM) held before the delegates depart from Geneva after WRC-12. The Working Parties will meet to begin their work later in 2012 and will continue to meet two or three times a year through 2014. A "big" CPM will be held, probably in early 2015, to finalize the technical report that will serve as the basis for the proposals to be considered at WRC-15.

It is impossible to predict all of the issues that will make it onto the WRC-15 agenda, but one that is certain to be there is further expansion of spectrum for mobile broadband applications, between approximately 500 MHz and 4 GHz. Tablets such as the iPad are driving demand for bandwidth through the roof. Not all of the other agenda items will be of concern to the amateur

and amateur-satellite services, but there are bound to be some that threaten our allocations. Whether there also will be an opportunity to expand amateur allocations remains to be seen; most administrations as well as the ITU itself are faced with diminishing resources and there is likely to be pressure to limit the number of agenda items that do not promise significant and immediate economic benefits.

Once the WRC-15 agenda is known and the assignments to the Working Parties have been made, the IARU and its member-societies – including, of course, ARRL – will plan the necessary meeting coverage. ARRL is one of the few IARU member-societies able to devote professional

staff to this effort, thanks in large part to the generous financial support of contributors to the Spectrum Defense Fund. The IARU team is almost entirely volunteer. Staff or volunteer, attending international meetings is an expensive undertaking – and ARRL as the IARU International Secretariat picks up the lion's share of the cost. The amateur community does not have taxes or corporate profits to fund its representation, and must instead rely on the voluntary dues and contributions of individuals who understand the need for us to be at the table when issues affecting our allocations are being considered.

Our investment in preparations for WRC-12 began in 2008 and will peak in January and February 2012. Your contribution now, in the waning months of 2011, will help ensure that we have the funds on hand to continue to mount an effective defense of amateur access to the radio spectrum as we set our sights on WRC-15.

David Sumner, K1ZZ  
Chief Executive Officer



## FCC Responds on BPL

In October, the FCC released a *Second Report and Order* in its proceeding – now in its ninth year – to adopt rules for Access Broadband over Power Line (BPL) systems. The *Second Report and Order* is the final step in the Commission's effort to comply with the directives of the United States Court of Appeals for the District of Columbia Circuit, which in 2008 ordered the FCC to correct errors it had committed in the course of adopting rules in 2004. The Court acted in response to a *Petition for Review* by ARRL.

Responding to the Court's directive, the FCC proposed a slight modification of measurement standards for determining whether a BPL system is in compliance with the maximum allowable levels of radiated emissions. In return, ARRL argued that coupled with a scientifically valid extrapolation factor for determining those levels, there should be mandatory notching of the amateur bands to a level 35 dB below the general emission limit. This action would reduce the likelihood of harmful interference to amateur stations to a level that would permit any remaining harmful interference to be remedied on a case-by-case basis. ARRL noted that mandatory notching simply reflected the best practices of the BPL industry.

### Notching Disappointment

In the *Second Report and Order*, the Commission decided not to adopt its own proposal and also declined to adopt ARRL's request for mandatory notching. Instead, the Commission has increased the requirement for BPL systems to be able to notch frequency bands to at least 25 dB, an increase of 5 dB from the prior requirement of 20 dB. The Commission also made technical adjustments to its rules for determining the distance

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## Agenda for 2015 World Radiocommunication Conference to be set at WRC-12

A standing agenda item for each World Radiocommunication Conference (WRC) is to recommend to the ITU Council the agenda for the subsequent WRC. As WRC-12 draws to a close, delegates will determine items to be considered at the following conference, tentatively slated for 2015.

### Possible WRC-15 Agenda Items

Like all WRC issues, the content of the next conference's agenda is difficult to predict in advance. In fact, WRC-12 Agenda Item 1.23, considering a secondary allocation to Amateur Radio at 415-526.5 kHz, was added almost at the last minute and somewhat unexpectedly at WRC-07. Nevertheless, at least three proposals of possible concern to Amateur Radio have already been put forth:

- The preliminary agenda for WRC-15, adopted at WRC-07, includes consideration of "spectrum requirements and possible additional spectrum to the radiodetermination service to support the operation of unmanned aerial systems (UAS) in non-segregated airspace." Already the topic of WRC-12 Agenda Item 1.3, UAS may ultimately require up to 100 MHz for terrestrial and satellite-based command, control, and sense-and-avoid operations.
- Japan has proposed to the Asia-Pacific Telecommunity that the 77.5-78 GHz band be allocated to the radiolocation service on a primary basis for short-range vehicular radar applications. This band is presently allocated to the Amateur and Amateur Satellite Services on a primary basis, with radiolocation permitted on a secondary basis in the band and on a primary basis on adjacent bands.
- A number of countries have informally suggested that reallocations for wireless broadband applications be considered. CITEL has already adopted an Inter-American Proposal to that end, "to consider spectrum requirements and possible regulatory actions, including additional spectrum allocations to the mobile service on a primary basis to accommodate the development of IMT and other mobile broadband applications and technologies." IMT, an acronym for International Mobile Telecommunications, is an ITU term encompassing mobile telephony and telecommunication services.

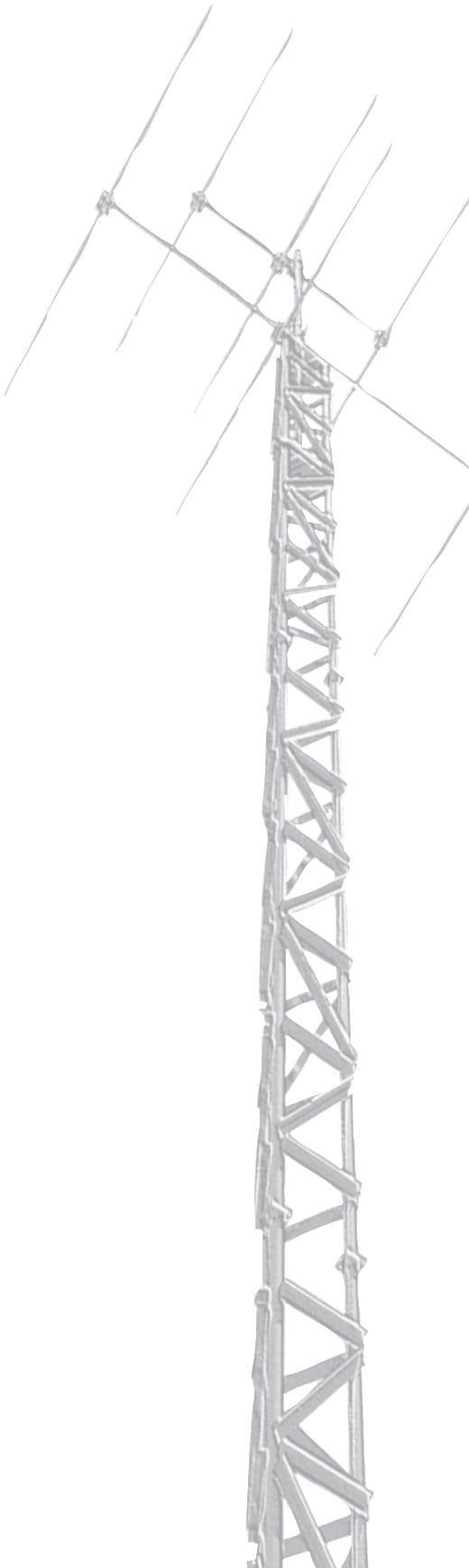
Any of these three items alone would require substantial engagement by Amateur Radio's representatives on the international stage. All three of them, and perhaps more, will require that our engagement to be multiplied. While the issues are cause for concern, Amateur Radio has met challenges at WRCs time and again and, with your support, we will continue to do so.

## Last Chance!

### Don't Miss Out! Get Your 2011 Spectrum Defense Mug and Pin Today!

We will say thank you for your \$50 contribution with a 2011 pin, and for your \$100 contribution with both the mug and pin.

To receive your pin or mug, contribute via the ARRL Web site using the ARRL Donation form at [www.arrl.org/arrl-donation-form](http://www.arrl.org/arrl-donation-form), or make a one-time contribution by mailing the enclosed reply form with your check payable to the **ARRL Spectrum Defense Fund**, 225 Main Street, Newington, CT 06111.



## WRC-12 Proposals Submitted from Around the World

In the final months before WRC-12, countries and regional telecommunications organizations around the globe will submit proposals for the work of the conference. These proposals suggest outcomes for the Conference's 35 Agenda Items and serve as the starting point for negotiations.

### Affirmative Proposals Differ

For Agenda Item 1.23, considering a secondary allocation to the Amateur Radio Service of about 15 kHz in the range 415-526.5 kHz, three regions have made affirmative proposals as of press time – CITEL, representing the Americas, ATU, representing Africa, and CEPT, representing Europe. Conversely, at least two regional organizations, ASMG, representing several Middle Eastern countries, and RCC, representing several nations of the former Soviet Union, are recommending no change, as is the International Maritime Organization. While the affirmative proposals differ somewhat, they do overlap in the frequency range considered, and provide a welcome counterweight to the opposition of maritime interests.

Some proposals are much more mundane, but are welcome nonetheless. For example, Agenda Item 1.1 invites countries to delete their names from various footnotes in the Table of Allocations in the ITU Radio Regulations. A number of countries permit operation of other services on Amateur Radio frequencies by an applicable footnote. Moldova has asked to be removed from footnotes 5.93, 5.98, and 5.277, permitting radio amateurs freer use of 1800-1830 kHz and 430-440 MHz by removing authorization to the fixed and mobile services.

As the last weeks before WRC-12 pass, the number of proposals submitted to the ITU will increase significantly, requiring ARRL staff and IARU volunteer analysis. Your contribution to the Spectrum Defense Fund enables the ongoing vigilance required.

one interference complaint that the FCC acknowledges receiving was filed by ARRL on December 29, 2010, and which the Commission says was "... submitted *recently* [emphasis added] and is under investigation at this time." "A well documented interference complaint languishing for months is a perfect illustration of why mandatory notching is needed," Sumner said.

### No Explanation

The *Second Report and Order* states that "... the BPL system database shows that BPL systems are currently operating in 125 ZIP codes across the United States." In fact, once non-existent ZIP codes are eliminated, there are 200 ZIP codes listed in the BPL system database. The FCC offers no explanation for why it has discounted this figure to 125, but neither figure reflects reality. "The BPL system database is filled with listings for 'paper' systems that were never deployed, systems that have been taken out of service and systems that are at some planning stage or are only offering service to customers within a small pilot area," Sumner said. "The FCC's own report on the status of Internet access services as of December 31, 2010 shows no more than 6000 customers nationwide receiving service via 'power line and other' connections, and about half of those appear to be 'other.' There is no reasonable explanation for why the Commission cites a flawed industry source for data when it possesses better data itself."

"One of the most puzzling sections of the *Second Report and Order* is that devoted to a discussion of the noise floor," Sumner continued. "The thrust of the Commission's argument is that while natural and manmade radio noise is extremely variable, there is no point in regulating BPL emissions down to a reasonable level because in some locations and at certain times, it will be obscured by other noise sources. Imagine if that sort of logic were applied to air and water pollution – and make no mistake, BPL emissions pollute an irreplaceable natural resource, the radio spectrum."

It is likely that ARRL will file a *Petition for Reconsideration* at an appropriate time. "While BPL has failed in the marketplace as a medium for delivering broadband connectivity to consumers, the technology is perceived to have some 'smart grid' applications," he said. "Now is the time to fix the rules, principally by mandatory notching, so that any new entrants will be competing on a level playing field with the existing BPL firms that have recognized the need for notching of the amateur bands."

## The FCC Responds

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between a power line and a measurement antenna and for determining site-specific extrapolation factors.

"We were prepared to be disappointed, and we were," commented ARRL Chief Executive Officer David Sumner, K1ZZ, after reviewing the 76 page *Second Report and Order*. "The increase in notch depth is a step in the right direction, but the value of the change is greatly diminished by the notches not being mandatory. The FCC acknowledges that a compliant BPL system will increase the noise floor below 30 MHz at distances of up to 400 meters from a power line, but characterizes that as 'a relatively short distance.' How many amateur stations are located more than a quarter-mile from the nearest power line?"

More than 17 pages of the *Second Report and Order* defend the Commission's choice of a 40 dB/decade extrapolation factor for measuring emissions at distances other than 30 meters from the power line. "It was particularly disappointing to read that '... ARRL asserts that there is only one scientifically correct and valid answer of an extrapolation factor of 20 dB ...,' Sumner said. "That is

a gross mischaracterization of our position. Our argument was that the 40 dB/decade value chosen by the Commission was demonstrably inappropriate for BPL, which the FCC acknowledges does not behave as a point-source emitter. Lacking an unambiguous scientific basis for a single value that would be equally valid across the entire frequency range from 1.7 to 30 MHz, the Commission fell back on the single value that defies physics – while at the same time acknowledging that '... ARRL is correct with regard to the physics of this issue.'"

One FCC statement with which ARRL is in strong agreement: "Whether the extrapolation factor is 20 dB or 40 dB or somewhere in between is far less important than the fact that harmful interference must be corrected under any circumstances." Unfortunately, Sumner observed, the FCC's deeds do not back up these words: "The Commission notes that there are not many interference complaints about BPL systems that are currently in operation, but inaccurately attributes that to the adequacy of its rules. In fact, it is the marketplace failure of Access BPL – coupled with voluntary steps taken by the few system providers that are still in business – that is responsible for this fortunate result." The

## A Note from the Chief Technology Officer

WRC-12 is the most daunting challenge of my professional life.

Admittedly, that's an odd way to start a note intended to motivate you to open your wallets and give what feels good to the ARRL Spectrum Defense Fund. The statement doesn't exactly exude confidence.

Don't worry that your League's CTO is scared. I am as confident as one can be about a proceeding as inherently uncertain and fluid as a WRC. I make the statement above precisely because a WRC is so uncertain and so fluid. It will require the full attention of multiple ARRL staff and IARU volunteers all the way from now until February 17, 2011. Then we'll have a weekend to breathe (and activate 4U1ITU for the ARRL International DX Contest-CW) before the work immediately begins again, with the first preparatory meeting to organize WRC-15 on February 20-21.

I am encouraged that our efforts for a new secondary MF allocation have steered the discussion from the question of "Whether?" two years ago to the question of "How?" today. Yes, there are still some interests who haven't given up on the "Whether" question, but we've made the better case, persuading three out of six regional telecommunications organizations to affirmatively support the proposal. The case was made despite significant initial skepticism by several of the countries now solidly in our corner – including our own United States.

A lot of work has been done to this point, enabled by our generous contributions to the Spectrum Defense Fund (yes, I mean our, because I'm also a donor). But it's nothing compared to the work left to do – persuading the rest of the world to see Agenda Item 1.23 our way while defending our existing allocations against unanticipated harm. The process requires continued vigilance, advocacy, and diplomacy, accomplished in extensive prep sessions, long multilateral meetings, and small bilateral sidebars, over the span of four weeks (five if you count the January 16-20 Radio Assembly).

We could do none of this, and our predecessors could not have achieved previous successes for Amateur Radio, without the generous support of ARRL members.

Geneva is expensive to begin with, and the Swiss franc's appreciation in value does have an impact on our bottom line. Dave Sumner's preference for Big Macs has been illustrated several times in these pages. I'm a Chicken McNugget guy: six pieces, small fries and a small Coke cost 10 francs. That's \$11.38 as I write this, down from \$13.75 on August 10. I hope that trend holds through winter.

Thank you for your past efforts to defend our spectrum, and please give us a push toward the WRC-12 finish line by giving what you can to the ARRL Spectrum Defense Fund. I am grateful for your support, and never forget that you've given it.

73,

**Brennan Price, N4QX**  
Chief Technology Officer



## A Note from the Chief Development Officer

The end of 2011 is fast approaching. Before we know it the New Year will be here, and with it the 2012 ITU World Radiocommunication Conference (WRC-12). As you've read throughout this edition of Spectrum Defense Matters, these approaching meetings will focus on many Agenda Items that are relevant to Amateur Radio spectrum and, in fact, could affect our radio frequencies.

Having Dave Sumner and Brennan Price attend WRC-12 is imperative. Through their personal representation, both Sumner and Price work to ensure that Amateur Radio spectrum and other critical concerns are addressed rigorously. Furthermore, ARRL officers continue to be an active voice for spectrum protection within the United States year-round.

However, this continuous vigilance comes at a cost. You have Sumner's pledge to use funds provided by donors wisely when he attends WRCs or must personally be present in Washington, D.C.

At the time this publication went to print, we have only reached 65 percent of the 2011 Spectrum Defense Fund goal of \$350,000. Without these crucial dollars, ARRL staff cannot represent Amateur Radio and constantly hold the line on available frequencies. Every day there is more and more demand from wireless technology companies to usurp that most valuable of our commodities – the radio spectrum.

If you have already contributed to the Spectrum Defense Fund this year, thank you. Your generosity is making possible our vigilance to protect defend Amateur Radio spectrum. If you have not yet made a donation to this important fund, now is the time to do so. Supporting the Spectrum Defense Fund is easier than ever:

- Consider a monthly gift of \$10, \$20, \$50 or \$100 a month on your credit card
- Contribute via the ARRL website using the ARRL Donation form at [www.arrl.org/arrl-donation-form](http://www.arrl.org/arrl-donation-form)
- Make a one-time contribution by mailing the enclosed reply form with your check, payable to ARRL Spectrum Defense Fund, 225 Main Street, Newington, CT 06111 Warmest 73,

**Mary M. Hobart, K1MMH**  
Chief Development Officer

P.S. We encourage your tax deductible contribution in any amount by phone. Remember that ARRL is an IRS-designated 501(c)(3) organization holding Federal tax identification # 06-6000004.

For questions or more information, contact

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