



# ARRL Spectrum Defense Matters

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## A Note from the Chief Executive Officer

The response to the first issue of ARRL Spectrum Defense Matters in July was very gratifying. Thanks to everyone who wrote to offer suggestions and comments.

We are facing very real and immediate challenges. Over the past couple of months we have addressed FCC spectrum management issues affecting our 430 MHz and 2.3 GHz bands as well as interference from unlicensed stations operating in the lower part of 10 meters. You can read about them in the next few pages.

Among the challenges lurk some opportunities. A possible new amateur band just below the AM broadcast band is on the agenda of the 2012 World Radiocommunication Conference (WRC-12). We face significant hurdles in getting what would be at best a secondary allocation, but we're working hard to persuade the radio services in this part of the spectrum that an amateur allocation is compatible with their future requirements. We recently gained crucial support in the United States, as you will read in this issue.

It takes a concerted global effort to protect Amateur Radio's access to the radio spectrum and guard against interference that reduces our ability to communicate. In future issues we plan to describe how this effort is coordinated through the International Amateur Radio Union (IARU) to ensure that Amateur Radio is represented everywhere that our voice needs to be heard. IARU volunteers are among the most remarkable people I have had the privilege of working with during my career on the ARRL staff. I hope we will be able to convey a sense of the great sacrifice of personal time and energy that they make on behalf of us all.

Thanks for your continued interest and support!

David Sumner, K1ZZ  
Chief Executive Officer



## U.S. Supports Secondary Amateur Radio Allocation at 461-469 and 471-478 kHz

The Federal Communications Commission and the National Telecommunications and Information Administration, the spectrum regulators for United States private sector and government users, respectively, have agreed to support a secondary



MF allocation to the Amateur Radio Service at 461-469 kHz and 471-478 kHz at the 2012 World Radiocommunication Conference (WRC-12). This proposal was formally made at a meeting of the Second Permanent Consultative Committee (PCC.II) of the Inter-American Telecommunication Commission (CITEL) August 30-September 3 in Fortaleza, Brazil.

The proposal reconciles two widely divergent proposals for WRC-12 Agenda Item 1.23 adopted by consensus of the private sector and government users. Agenda Item 1.23 calls on WRC-12 "to consider an allocation of about 15 kHz in parts of the band 415-526.5 kHz to the amateur service on a secondary basis, taking into account the need to protect existing services." The FCC's WRC-12 Advisory Committee (WAC) had adopted a proposal for a secondary amateur allocation at 495-510 kHz. The NTIA, acting on the advice of government maritime interests, initially supported no change from the status quo.

"I am pleased that the United States is taking an affirmative position on Agenda Item 1.23," said ARRL Chief Technology Officer Brennan Price, N4QX. "While the proposed frequency bands differ from what ARRL proposed and the private sector supported by consensus during WAC deliberations, it is gratifying that government interests have backed off a no change position."

### Opposition to any amateur allocation in the range 415-526.5 kHz

Some maritime interests, both domestically and internationally, have expressed opposition to any amateur allocation in the range 415-526.5 kHz, citing existing narrowband direct printing applications at 490 and 518 kHz and future plans for the band that have yet to be fully characterized. To

the extent future maritime uses of the band have been discussed, the focus has been on the 495-505 kHz segment. Despite the lack of plans for the remainder of the range under consideration, the International Maritime Organization has adopted a draft position of "no change" and communicated this position to the ITU. IARU President Tim Ellam, VE6SH, has met with IMO officials in efforts to soften this position.

"The road to a favorable outcome for Agenda Item 1.23 at WRC-12 remains treacherous," Price said. "The IMO is a respected organization,



Brennan Price, N4QX  
Chief Technology Officer

*"The IMO is a respected organization, and their opinion carries weight. It's up to us to continue to make the case that a secondary allocation can be made while protecting existing services, both to the IMO and to the ITU Member States who will make the decisions at WRC-12."*

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## New York Judge Declares Amateur Radio Is Not a Cell Phone

In many states and localities, it is illegal to talk on a cell phone (without a hands-free device) while behind the wheel -- doing so can result in a ticket and possibly a large fine. But on May 30, 2010, when a New York ham was talking on his mobile rig, he didn't think he was doing anything wrong. Except that the officer who pulled him over and cited him with a \$100 fine didn't quite see it that way.

Steve Bozak, WB2IQU, of Clifton Park, told the ARRL that when he was pulled over while driving to Troy -- about 16 miles away -- he assured the officer that he was not speaking on a cell phone, but on his handheld transceiver. But according to Bozak, the officer said "it was all the same to him." So Bozak decided to fight the ticket in court.

"Honestly, it's not the fine or the ticket, but that all the other hams who use mobile radios have to hide the fact we are mobile in Troy," he told the ARRL just days after he was cited. "I will do my best to settle this politely and correctly, for all of the ham community. So I will follow the course and have my day in court, to 'tell it to the judge.' This matter affects 38,000 hams in New York State."

### Charge should be dismissed

Unfortunately, when Bozak had his day in court for a pre-trial conference, the prosecutor refused to dismiss the case. But he didn't give up and took his case to City Court where, on September 8, where at the request of Bozak's attorney -- ARRL Volunteer Counsel (VC) Jeremy Rase, KC2JRD -- the judge dismissed the case in Bozak's favor. Bozak argued that his use "of a handheld Amateur Radio does not fit the definition of a mobile telephone, and as such, the present charge should

## ARRL Takes On ReconRobotics Over 430 MHz

In January 2008 ReconRobotics, Inc. filed a waiver request with the FCC to permit its Recon Scout surveillance robots to operate for law enforcement and public safety purposes in the 430-448 MHz band. In May 2008 the FCC opened a docket proceeding, WP Docket No. 08-63, seeking comments on the request. The ARRL opposed the waiver on the grounds that the principal reason for the waiver request was that the device originally had been designed for overseas military use and the manufacturer now wanted to market it domestically. The ARRL argued that there were other, more suitable frequencies on which the device could operate and that the appropriate solution was to redesign the product for the domestic market, not to force-fit it into an unsuitable allocation.



More than two years after the ReconRobotics waiver request -- in other words, long after such a redesign could have been accomplished -- the FCC issued an Order granting the waiver, with conditions that only partially addressed the ARRL's concerns. Accordingly, the ARRL filed a petition for reconsideration. ReconRobotics opposed our petition, though it did not contest the inadequacy of the FCC's labeling requirements for the product. In turn, on April 15 the ARRL filed a reply to the opposition. The petition for reconsideration is still pending before the FCC.

In early August the ARRL filed petitions to deny the first wave of license applications for Recon Scouts. The applications contained numerous errors, which the FCC recognized on August 13 by returning the first of the applications on the grounds that it was not consistent with the waiver Order. Nevertheless, on August 16 -- three days after the FCC itself said the applications were defective -- ReconRobotics filed a strident Opposition to Petition to Deny, claiming that the ARRL was "frivolous" and "filed solely to cause delay." The ARRL countered two weeks later, noting the FCC's finding and pointing out three problems with each of the applications filed to use the Recon Scout:

- Each application is at variance with the ReconRobotics waiver.
- Each application is not grantable based on the waiver requests contained in each application, which does not waive all rules necessary to permit a grant.
- Each application contains technical specifications that are simply wrong.

Contemplating the mound of paperwork spawned by the waiver request, ARRL Chief Executive Officer David Sumner, K1ZZ observed that such a proceeding is not a substitute for good engineering. "There is no doubt that a tool like the Recon Scout would be useful to the law enforcement and public safety communities. In 2008 the ARRL suggested a number of viable alternatives, any one of which would have led to a similar product being on the market by now without such a waiver being required -- and without the potential for disabling interference between the device and the radio amateurs who are heavy users of the 430-448 MHz spectrum."

be dismissed." The prosecutor's office did not submit a response in opposition.

Saying that New York's Vehicle and Traffic Law defines a "Mobile Telephone" as a "device used by subscribers and other users of wireless telephone service to access such service," and that a "Wireless Telephone Service" is defined as "two-way real time voice telecommunications service that is interconnected to a public switched telephone network and is provided by a commercial mobile radio service," the judge decided that Bozak's handheld transceiver did not fit that description.

### The decision

"A review of 47 C.F.R. §20.3 reveals that Citizens Band Radio Service is defined

under private mobile radio service not commercial mobile radio service," the decision read. "Therefore, the Court finds that the use of an Amateur Radio device does not fit the definition of a mobile telephone as defined under the Vehicle and Traffic Law." As such, the judge dismissed the case in Bozak's favor.

"While the court cited the Citizens Band Service instead of the Amateur Radio Service, the ruling is very favorable to amateurs on the precise point of law raised," said ARRL Regulatory Information Manager Dan Henderson, N1ND. "The principle of law is spot on. This is a great ruling in New York and exactly what we had thought would happen."

## NEW in 2010 - Spectrum Defense Mug and Pin

We will say thank you for your \$50 contribution with a 2010 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.

## ARRL Works to Protect 2304 MHz – and an Important Principle

As one step toward implementing its National Broadband Plan, in May the FCC adopted amendments to its rules for Wireless Communications Services in the 2.3 GHz band to permit mobile broadband services, in addition to fixed services, in the bands 2305-2317.5 and 2347.5-2360 MHz. The new rules were published in the Federal Register in August, triggering a 30-day window for petitions for reconsideration. On September 1 the ARRL filed a Petition for Clarification or Partial Reconsideration with regard to one aspect of the new rules.

### Amateur allocation

The Amateur Radio Service has a secondary allocation at 2300-2310 MHz. The fixed and mobile services are primary at 2305-2310 MHz, but at 2300-2305 MHz the amateur allocation is not shared domestically with any other service. “The band is regularly and substantially utilized by radio amateurs for narrowband (i.e. 3 kilohertz bandwidth emissions or less) long-distance propagation communications using exceptionally weak received signal levels, most especially around 2304 MHz,” the ARRL noted in its comments. “This type of operation has proven over time to be completely compatible with deep-space research and other operations below 2300 MHz, and the ambient noise levels in the 2300-2305 MHz band are historically very low, making the band attractive for amateur weak-signal communications, the principal amateur use.”

Specifically, the ARRL requested that the Commission affirm:

- That §2.102(f) of the Commission’s rules applies to Wireless Communications Service (WCS) fixed and mobile operations, so that harmful interference that is caused to Amateur Radio Service operations in the 2300-2305 MHz band is to be remedied by WCS licensees.
- That the current out-of-band emission (OOBE) limits for WCS devices continue to apply to mobile, portable and fixed facilities across the entirety of the 2300-2305 MHz band following the rule changes implemented in this Order.

The FCC claims that its rule changes do not risk harmful interference to neighboring operations, specifically claiming to protect adjacent satellite radio, aeronautical mobile telemetry and deep space network operations. The ARRL’s concern is that the Amateur Radio Service is “noticeably absent” from the listed group of interference-protected services

affected by these rule changes. Instead, the Commission said this: “We note that some amateur stations operating around 2304 MHz may experience an increased antenna noise temperature caused by the implementation of mobile WCS operations, and will have to tolerate this change in the RF environment [emphasis added]. Due to the technical flexibility allowed to amateur stations in Part 97 of our rules, however, we believe that operators of these stations may be able to offset or mitigate the effects of this change by relocating or redirecting their antennas, or by making other permitted technical adjustments.”

### Incorrect assumptions

The ARRL noted that this represents “the latest in a series of instances in the past few years in which the Commission has made unwarranted and completely incorrect assumptions about the ability of amateur stations to avoid preclusive interference from an incompatible spectrum use by reorienting or relocating antennas. These assumptions are made without any factual basis at all, in order to justify an allocation decision the Commission desires to make.”

The ARRL pointed out that in most cases it is impossible to “relocate” an antenna array that is installed at an amateur’s residence. Reorienting a directional antenna is possible in some instances, but could prevent amateurs from hearing desired signals from the same direction as the interfering device. “In any case, however, the operation of mobile broadband devices can be anticipated to be ubiquitous, making the ‘redirecting’ of

amateur antennas an exercise in futility,” the ARRL said.

ARRL Chief Executive Officer David Sumner, K1ZZ commented: “Dismissing harmful interference as merely a ‘change in the RF environment’ does not shift the mitigation burden from the generator of the interference to the victim, any more than calling a plane crash a ‘sudden change in air speed’ would reduce the casualties.” To the contrary, the ARRL argued that “§2.102(f) of the Commission’s Rules states rather clearly that ‘(t)he stations of a service shall use frequencies so separated from the limits of a band allocated to that service as not to cause harmful interference to allocated services in immediately adjoining frequency bands.’”

Citing calculations that show the increase in noise from a mobile device 30 meters away could be as much as 51 dB, the ARRL said “...it is critical to establish a firm, workable OOBE limit for these facilities at the outset, as the only means of protecting regular, ongoing Amateur Radio communications in this band. It is necessary, therefore, for the Commission to clarify now...that OOBEs for mobile stations ‘must be attenuated over a 1 MHz bandwidth below the transmitter power (P) by a factor not less than  $43 + 10 \log (P)$  dB on all frequencies between 2300 and 2305 MHz.’ It is also important to place the burden of harmful interference resolution where it properly belongs, and where §2.102(f) places it: on the WCS licensee and not on the victim Amateur Radio Service licensee operating in the 2300-2305 MHz band.”

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### U.S. Supports Secondary Amateur Radio Allocation *Continued from Page 1*

and their opinion carries weight. It’s up to us to continue to make the case that a secondary allocation can be made while protecting existing services, both to the IMO and to the ITU Member States who will make the decisions at WRC-12.”

Technical Relations Specialist Jon Siverling, WB3ERA, represented ARRL on the United States delegation to the CITEL PCC.II meeting. In other matters of concern to Amateur Radio:

- Regarding Agenda Item 1.14, considering an allocation to the radiolocation service between 30 and 300 MHz, the United States proposed that no change be made in ITU Region 2, and suggested that changes in other regions should be addressed by country-by-country footnotes to the ITU Radio Regulations. Proponents appear to be focusing on 154-156 MHz.
- Regarding Agenda Item 1.19, considering regulatory provisions for software defined radio (SDR) and cognitive radio systems (CRS), sufficient support for a United States proposal of no change was garnered to have the proposal deemed a region-wide Inter-American proposal. The status quo reduces the risk of provisions in the Radio Regulations that could curtail experimentation in SDR and CRS by the Amateur Service and reduce the portability of equipment across international boundaries.



## ARRL Addresses 10 Meter Interference in Comments on CB Rules

In June the FCC opened a proceeding – WT Docket No. 10-119 – “to simplify, streamline, and update the Part 95 rules to reflect technological advances and changes in the way the American public uses the various Personal Radio Services.” The Citizens Band (CB) Radio Service is one of several Personal Radio Services regulated by Part 95. The ARRL filed comments limited to issues affecting the Amateur Radio service.

### CB vs. Amateur Radio Equipment

The FCC wants to consolidate the rules pertaining to the modification of certificated CB equipment. The Commission noted that CB equipment that has been modified by the CB operator -- or persons other than the manufacturer -- to operate on unauthorized frequencies or to operate with higher power than authorized often causes interference to other radio services. The ARRL agreed, especially with regard to the lower part of the 10 meter amateur band: “Indeed, there are many recent instances of the operation of modified CB equipment (or equipment imported or manufactured domestically with the inherent capability of operating outside the HF CB channels) by unlicensed individuals in the Amateur Radio Service bands.”

The ARRL went on to note that “much of the problem of misuse of CB equipment is due to the lack of enforcement of equipment authorization and marketing rules, rather than the language of the rules themselves. CB shops and truck stops, for example, are often found to be actively marketing and selling modified or illegally imported equipment which is actually intended to operate not on CB channels, but on amateur or government frequencies between 27.415 MHz and 28.500 MHz. Often, this equipment is not marketed as CB equipment, but instead is marketed inaccurately as Amateur Radio equipment. It is typically neither used by nor useful to licensed radio amateurs, and it cannot be accurately described as Amateur Radio equipment.”

The ARRL argued that “it is vitally important in any case to minimize, and to maintain the utmost flexibility in, equipment authorization requirements for Amateur Radio equipment, because Amateur Radio is in essence an experimental radio service. It is important not to make amateur station equipment unavailable or expensive, nor to stifle experimentation by application of equipment authorization requirements to Amateur Radio equipment generally.” But at the same time, the ARRL noted that “it is not desirable to legitimize or encourage the actions of unscrupulous manufacturers who market products labeled as ‘Amateur Radio equipment’ which are neither useful to, nor intended for use by licensed radio Amateurs.”

### Combination Radios

The ARRL supported an FCC proposal to prohibit the certification of radios that are intended to transmit on both Personal Radio Service channels and on Part 97 frequency allocations. Noting that it is undesirable in general to combine transmit capability in radios intended for use in a licensed radio service with transmit capability in radios intended for use in a service licensed by rule – such as the CB service – the ARRL agreed with the Commission’s finding that this invites unauthorized operation on frequencies allocated to the licensed radio service by users in the unlicensed service.

“An example is the marketing of radios which include both FRS and GMRS channel transmit capability,” the ARRL explained in its comments. “This practice has resulted in numerous instances

of operation by unlicensed individuals on GMRS frequencies. ARRL is very much concerned that instances of unlicensed operation on Amateur Radio frequencies, which create a difficult and time-consuming enforcement problem when they occur, would increase considerably if Part 95 equipment was permitted to include Amateur Radio frequencies as well.” The ARRL strongly recommends that the Commission “continue to prohibit, without exception, the certification of Part 95 radios which include as well the capability to transmit on Amateur Radio frequencies.”

### A Note from the Chief Development Officer

Thank you to those ARRL members who responded to the first issue of Spectrum Defense Matters with a generous contribution to the 2010 Spectrum Defense Fund. We began the year with a hefty task of raising \$325,000 to support ARRL’s efforts to defend Amateur Radio frequencies and your operating privileges. While we’ve made a dent in that goal, we still need to raise \$197,988 before the end of the year.



As you read through the second issue of Spectrum Defense Matters I hope you will be inspired to make a generous contribution before December 31. You may elect to make your gift in monthly installments—an easy way to support this important ARRL fund.

Members tell us that ARRL’s representation of their interests is one of the most important benefits of being an ARRL member. And we are proud to be your voice in official Washington and around the world. But we need you to support ARRL financially. We will say thank you with a 2010 Defense pin or 2010 Defense mug and send you a certificate.

### There are several manageable ways to make your gift....

- NEW! Consider contributing \$10, \$20, \$50 or \$100 quarterly or monthly on a 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).
- NEW! Arrange with your bank to send an automatic monthly check of \$10, \$20, \$50 or \$100 or more payable to ARRL Spectrum Defense Fund.
- 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.
- Make a gift of securities. Contact the ARRL Development Office for detail on how to transfer stock to the Spectrum Defense Fund.
- Consider including the ARRL Spectrum Defense Fund in your estate plans, and become a member of the ARRL Legacy Circle.

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