



# ARRL Spectrum Defense Matters

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## A Note from the Chief Executive Officer

The next ITU World Radiocommunication Conference, WRC-12, is now just four months away! The United States has sent its proposals off to Geneva, including a secondary allocation for the amateur service at 461-469 and 471-478 kHz. A number of other administrations in the Americas have signed on. Other possibilities that have the support of some administrations include 472-487 kHz and narrower allocations within the 461-487 kHz frequency range. We are grateful for the support and hopeful that the conference will reach consensus on a new amateur allocation in this range.

Amateur Radio's global participation in WRC-12 preparations has been coordinated through the International Amateur Radio Union (IARU) and has succeeded not only in building support for this new allocation, but in staving off negative impacts on existing amateur bands. Of course, it is still too early to claim that our defense has been entirely successful; that time, if it comes, will be at the final gavel on February 17, 2012.

An agenda item that has given us concern throughout WRC-12 preparations is the consideration of possible allocations in the range 3-50 MHz to the radiolocation service for oceanographic radar applications. While we have staved off the inclusion of any existing international amateur allocations, the methods of addressing this agenda item do include the band 5250-5450 kHz in which a number of countries, the United States among them, permit limited amateur operation on a not-to-interfere basis. While it will be difficult to do so in the absence of an international amateur allocation we will continue to try to steer the radiolocation service away from this band.

A major undertaking at any WRC is the preparation of draft agendas for future conferences. While an agenda item to consider additional allocations to the amateur or amateur-satellite services may be too much to hope for at the next conference after WRC-12, the IARU will pursue whatever opportunities may arise and will be alert for threatening agenda items. One topic that is bound to arise is the perceived need for additional mobile wireless broadband allocations – there's more about this major challenge elsewhere in this issue.

On a personal note, I will be on the IARU team at WRC-12. The ARRL Board of Directors has voted to hold its January 2012 meeting a week early so I can get to Geneva in time. Oh, and that Big Mac meal that I said back in March cost \$12? Thanks to further appreciation of the Swiss franc it's now \$14.50. At current exchange rates and without any allowance for inflation, Geneva is 50% more expensive than when WRC-07 was held. Any contribution you can make to the Spectrum Defense Fund will be gratefully received and carefully managed.

David Sumner, K1ZZ  
Chief Executive Officer



## United States Proposes to Allocate 5250-5450 kHz to HF Oceanographic Radar

In an unexpected and unfortunate proposal to the 2012 World Radiocommunication Conference (WRC-12), the United States has proposed to allocate 5250-5450 kHz to the radiolocation service to accommodate HF oceanographic radars to partially satisfy Agenda Item 1.15. This Agenda Item "consider[s] possible allocations in the range 3-50 MHz to the radiolocation service for oceanographic radar applications...."

The proposal was made despite earlier contributions to the preparatory process acknowledging that frequency sharing with Amateur Radio "seems to be difficult." Domestically, the United States has allocated five discreet channels in this range to the Amateur Radio Service on a secondary basis. Similar domestic allocations to Amateur Radio have been made by other countries in the frequency range.

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### Uses of HF Oceanographic Radar

HF Oceanographic Radar is utilized to map ocean surfaces and currents and to detect anomalies that may be indicative of or consequential to disasters or tsunamis. Development of oceanographic radar began in the 1970s with one dominant manufacturer, CODAR (an acronym for Coastal Ocean Dynamics Applications Radar). To an extent, the brand CODAR has become a synonym for the technology.

According to the United States proposal, "The potential benefits to society for improved measurement of coastal currents and sea state include a better understanding of issues like coastal pollution, fisheries management, search and rescue, beach erosion, maritime navigation and sediment transport. Oceanographic radar measurements of the sea surface provide support to meteorological operations through the collection of sea state and dominant ocean wave data."

### Recent Interference Cases

Historically, interference between HF oceanographic radar has been rare. However, ARRL volunteers and staff have collaborated this year with oceanographic researchers to resolve two cases of interference from HF oceanographic radar to Amateur Radio – one

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## IARU Spectrum Futures Committee Begins Work

The Administrative Council (AC) of the International Amateur Radio Union (IARU) held its annual meeting in Sun City, South Africa, immediately after the IARU Region 1 Conference. While final preparations for WRC-12 were the main theme of the meeting, longer range issues also received attention.

A major international dilemma that has faced radio amateurs for decades is that, with two regional exceptions, all of the amateur allocations between 148 MHz and 24 GHz are on a secondary basis. The two exceptions are 220-225 MHz (a primary allocation in Region 2 that is not available to amateurs elsewhere) and 430-440 MHz (a primary allocation in Region 1 and eight countries in Region 2). Primary does not mean exclusive; in both cases there are other services with primary allocations. In the case of 220-225 MHz the FCC decided to divide the band between two services, with the upper 60% allocated to the amateur service and the lower 40% allocated to land mobile.

The wireless broadband explosion is generating tremendous pressure on the existing radio services with allocations in the frequency range that is most useful for highly portable devices, i.e. the kind that you can put in your pocket. At the lower

end of this frequency range the limiting factor is antenna size, while at the upper end the limiting factor is how well signals penetrate buildings and foliage. The "sweet spot" for mobile wireless broadband is between about 600 MHz and about 4 GHz, although services above and below that range also face indirect pressure from displaced services that must be accommodated elsewhere.

While mobile wireless broadband generates the most attention, there are many other ways that the use of the radio spectrum above 148 MHz is expanding – all the way up to where wavelengths are measured in millimeters. Amateur use of the bands above 24 GHz is limited at present but of course, we want to be sure that experimentation can continue.

With these challenges in mind, the AC has named a Spectrum Futures Committee to develop strategies for retaining access to bands above 148 MHz for the amateur and amateur-satellite services globally. The committee is to review current IARU policies, seek input from stakeholders, and formulate recommendations to the AC. It is chaired by IARU Vice President Ole Garpestad, LA2RR, with regional representation by Murray Niman, G6JYB, Brennan Price, N4QX, and John Martin, VK3KM.

## Africa Joins Effort for Amateur Secondary Allocation at MF

Regional support for a favorable outcome to WRC-12 Agenda Item 1.23, considering a secondary allocation to Amateur Radio of around 15 kHz in the range 415-526.5 kHz, continues to grow. Meeting in Algiers July 11-14, the African Telecommunications Union (ATU) adopted a common proposal calling for an allocation of up to 15 kHz in the range 472-487 kHz.

ATU joined the Inter-American Telecommunication Commission (CITEL) as the second regional telecommunication organization supporting an affirmative outcome to Agenda Item 1.23. CITEL adopted an Inter-American proposal to allocate 461-469 and 471-478 kHz to the Amateur Radio Service in 2010.

The formal support of regional organizations maximizes the probability of success on WRC agenda items. As of this writing, the International Amateur Radio Union continues efforts for favorable positions by four other bodies, the European Conference of Postal and Telecommunications Administrations (CEPT), the Asia-Pacific Telecommunity (APT), the Arab Spectrum Management Group (ASMG), and the Regional Commonwealth in the field of Communications (RCC, comprising most countries of the former Soviet Union).

Region 1 Vice President Tafa Diop, 6W1KI, represented IARU in Algiers, and ARRL Technical Relations Specialist Jon Siverling, WB3ERA, attended as an invited representative of CITEL. Both representatives made persuasive and successful cases for a favorable outcome. Siverling's invitation indicates the esteem with which his work in CITEL is viewed, and his participation in Algiers and elsewhere in the world is made possible by the support of ARRL members and donors to the Spectrum Defense Fund.

## HR 607 Update

Congress and the FCC have been grappling with the issue of how best to provide the public safety community, and particularly First Responders, with an interoperable broadband wireless network. One way is to allocate additional spectrum in the 700-MHz band for this purpose, but that would require taking it off the auction block and foregoing revenue that was to go toward reducing the federal deficit.

### Public Safety

In February Rep. Peter King of New York, following some very bad advice, introduced a bill – HR 607 – that calls for public safety to give up all of its spectrum allocations between 170 MHz and 512 MHz and for that spectrum to be auctioned instead. Inexplicably, the bill included 420-440 MHz in this category, even though it is not a public safety band and it is heavily used by amateurs on a secondary basis to military radar. The ARRL and its members responded vigorously to this threat. On May 25, ARRL General Counsel Chris Imlay, W3KD, was invited to testify before the House Subcommittee on Communications and Technology and drove home the point that the concept is fundamentally flawed.

### Strange Things Can Happen

HR 607 is not the only bill that addresses the interoperable broadband issue. There are other bills under consideration in both the House and Senate, none of which contain the dubious 420-440 MHz provision. Rep. King reportedly has backed away from this aspect of his own bill, but – as anyone who watches Congress knows all too well – strange things can happen within legislation right up to final passage. The ARRL will continue to monitor developments in the committees of jurisdiction in both the House and Senate and will do everything we can to prevent the very worthwhile idea of improving communications for First Responders from having unintended and unnecessary negative consequences for Amateur Radio.

## United States Proposes to Allocate 5250-5450 kHz to HF Oceanographic Radar...

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in the 5250-5450 kHz range. ARRL Orange Section Official Observer Coordinator Dan Welch, W6DFW, and ARRL Field and Regulatory Correspondent Chuck Skolaut, K0BOG, were among a number of amateurs involved in the effort to resolve the interference on 60 meters. "After comparing reception reports of these signals that we had been hearing on the East Coast and reports [Welch] had received from amateurs on the West Coast, [Welch] followed up on them and began doing some research," explained Skolaut. "We alerted Official Observers – especially along the coast – to monitor and forward reports."

Welch enlisted the assistance of a number of these Official Observers and other stations to monitor the frequencies after he had received more observations. Through good cooperation with the FCC,

he was able to ascertain that CODAR was being used by Rutgers University on channels 3 and 4 in the 60 meter amateur band.

### Good Cooperation from the CODAR Group

According to Skolaut, much of the follow-up included good cooperation from the CODAR group at Rutgers, including Josh Kohut and Ethan Handel. Rutgers is part of a regional partnership working on ocean observing. Kohut told the ARRL that information they gather is used by the Coast Guard, fisheries, off shore energy facilities, storm

*They conducted two tests a week apart and it was definitely determined that the pulses being heard on the two channels were being transmitted from one or more of their sites.*

forecasters and pollution studies. He explained that the transmitters are capable of 40 W and provide information from up to 100 miles.

Welch and Handel coordinated testing, and

amateurs were contacted to help monitor the frequencies as Handel shut down the various transmitters in their network to determine which ones amateurs were hearing. "They conducted two tests a week apart and it was definitely determined that the pulses being heard on the two channels were being transmitted from one or more of their sites," Skolaut said. "It is interesting to note that the West Coast stations were able to hear the East Coast CODAR much of the time, depending on propagation."

### Mutually Beneficial

Skolaut reported that the Rutgers team moved their transmitter frequencies outside of the amateur band to 4.9 MHz to continue their research. According to Skolaut, "Both Handel and Kohut said that they were glad we were able to resolve this issue in a mutually beneficial way. Now once again, 60 meters is quiet with regard to CODAR signals."

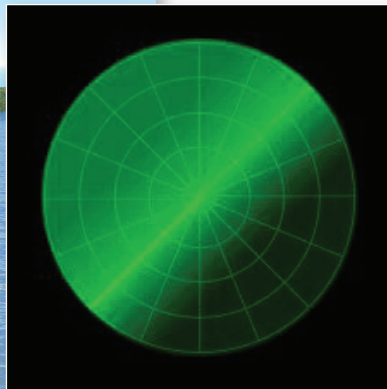
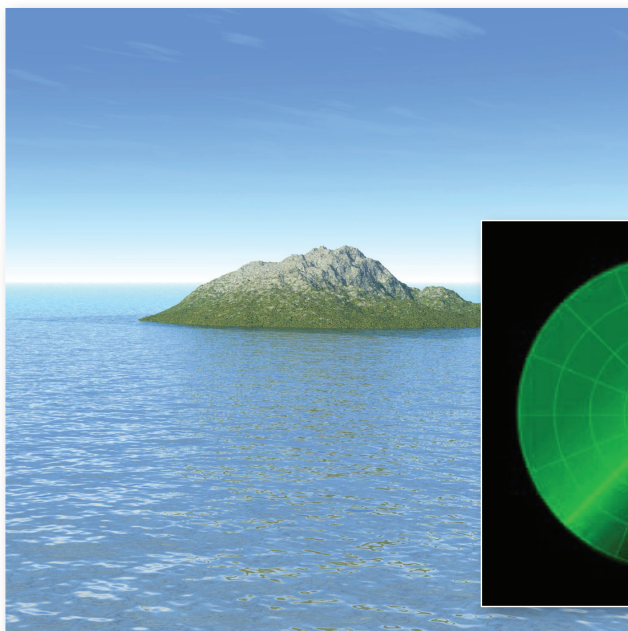
## Why is Spectrum Defense Important?

**Each of us probably has their own unique spin on the answer.**

For me it is simple. Defending spectrum means protecting the way each of us chooses to enjoy Amateur Radio. It is important to have VHF/UHF allocations when we are called upon to provide support during communications emergencies. However, Amateur Radio is primarily a personal radio service where licensees have great latitude to develop their skills, experiment to broaden their knowledge base, serve their communities, and to simply have fun.

Field Day is a good measure of the strength of the Amateur service. When the final 2011 Field Day numbers are released you will see (paraphrase Mark Twain) that "the reports of Amateur Radio's demise are greatly exaggerated." A record number of participants and entries were received and almost 1.5 million contacts were made. Defending our spectrum allows us to prepare for our role when the time comes – and allows us to tell the story that we are not that "quaint" thing your grandfather used to do.

Spectrum Defense matters? You bet it does!



## Still Available!

### The 2011 Spectrum Defense Mug and Pin

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.







# ARRL Spectrum Defense

# Matters

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## A Note from the Chief Technology Officer

Had I been asked a year ago about potential outcomes at WRC-12, I would have candidly been pessimistic about our efforts to obtain a secondary allocation below the AM broadcast band and optimistic about other agenda items of potential negative impact to Amateur Radio.

Things change for the better: Our efforts at MF have gained affirmative support by two regional telecommunications organizations, despite strident opposition by the International Maritime Organization. While the methods supported by CITEL, representing countries in the Americas, and ATU, representing African nations, differ, there is overlap and room for development of common ground.

Things also change for the worse: While only one country has thus far proposed to make an allocation for HF oceanographic radar that would negatively impact Amateur Radio, it is unfortunate that this country is our own.

Time is running out as WRC-12 approaches in January and February of 2012. But even as the clock ticks, there is still time and opportunity to ensure that the outcomes on these and other issues are favorable to Amateur Radio. Your support and mine (I'm a donor to the Spectrum Defense Fund as well) has enabled ARRL staff and volunteers to make the case for Amateur Radio again and again. You've read about some of these efforts in this newsletter, and you have my commitment that we will continue this work, as will the capable volunteers of the International Amateur Radio Union.

World Radiocommunication Conferences are inherently fluid events, with outcomes often uncertain until the end of the meeting. I take some comfort that there are many more issues with a consensus developing in Amateur Radio's favor than there are against us. In fact, it's hard to say that there is consensus on HF oceanographic radar at this time, as no other country has signed on to the United States' approach. In short, there's ample room for persuasion, and that's what we're charged to do. Thank you, once again, for enabling us to do so.

73,

**Brennan Price, N4QX**  
Chief Technology Officer



## A Note from the Chief Development Officer

### A long way to go....

Yes, we have an uphill climb during the last half of 2011. I hope you will continue to enjoy the information presented in *Spectrum Defense Matters*, and will understand better the vital work that ARRL does on your behalf to protect the frequencies that you enjoy. Even more, I hope it will inspire you to make a contribution to the 2011 Spectrum Defense Fund. If you have already done so, thank you.

We are more than half way through 2011, yet the Spectrum Defense Fund is far from fully funded for the year. The fund still needs \$189,005 to reach its 2011 target by December 31.

As a member of ARRL you are aware of the challenges to our spectrum that Amateur Radio has faced over the years...from Little Leos to BPL. Without the Spectrum Defense Fund to support ARRL's work both at home and abroad, we might find ourselves in a very different place today. Loss of spectrum would certainly impact our ability to respond to disasters such as the tornadoes this year in Alabama and Missouri, and our response to Hurricane Irene in late August. Whatever your passion in Amateur Radio – contesting, chasing DX, Emergency response or QRP – it could be affected if any spectrum is lost.

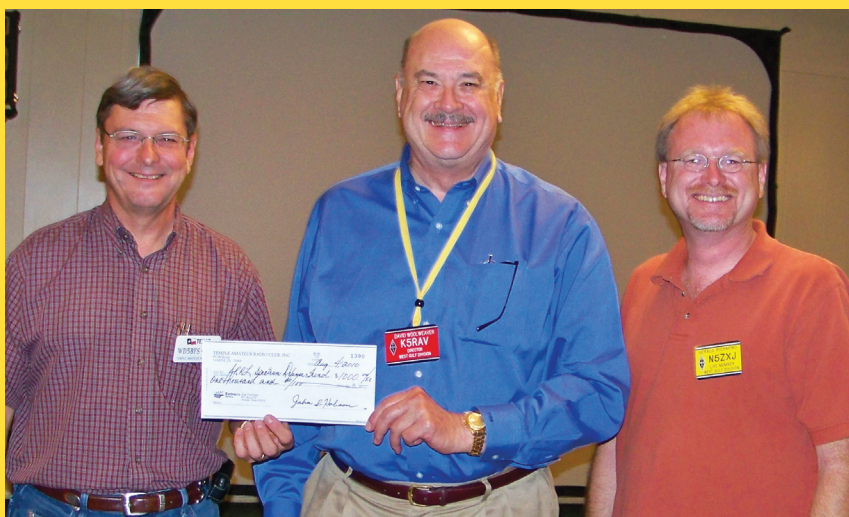
Please take a moment and think about what financial commitment you can make to the ARRL Spectrum Defense Fund now. It will certainly make a difference if we can climb that hill together and defend our frequencies.

Warmest 73,

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

P.S. We encourage your tax deductible contribution in any amount by phone, on the web at [www.arrl.org](http://www.arrl.org) or by mail to ARRL Spectrum Defense Fund, 225 Main Street, Newington, CT 06111. 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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## Generous Contribution

Temple Amateur Radio Club's Vice President Gerald Richmond, N5ZXJ; TARC's President John Hobson, WD5BFS; Brennan Price, N4QX, ARRL Chief Technology Officer; David Woolweaver, K5RAV, Director West Gulf Division; and John Stratton, N5AUS, Vice Director West Gulf Division were present when the Temple Amateur Radio Club presented a generous contribution to ARRL for the Spectrum Defense Fund.

The club operates a successful hamfest twice a year and eagerly shares its proceeds with ARRL by contributing \$1000 to the Spectrum Defense fund!