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REPORT OF THE GENERAL COUNSEL TO THE BOARD OF DIRECTORS

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Greetings. It is my privilege to submit the following report to the Board of Directors on legal and regulatory matters in which this office has been involved since the last meeting of the Board in January of this year in New Orleans, LA. The following comments are attorney-client privileged information and work-product, and should be considered confidential, restricted to Board members, Vice Directors, and Board meeting attendees only. Please do not disclose this document or any part of it otherwise.

I. FCC Matters

A. Overview of Legal and Regulatory Matters.

The period since the last Board Meeting has been spent in large part in a very aggressive effort to obtain introduction of our proposed legislation to extend the protections of the FCC's PRB-1 limited preemption policy with respect to Amateur Radio communications to all types of land use regulation, not merely governmental regulation. This effort was ordered by the Executive Committee. I have been to literally dozens of meetings with Senate and House offices and with Senate and House committee counsels, with, and coordinated by John Chwat. We have made the rather extensive, mostly factual argument for sponsorship of our draft Bill. Through the grapevine I have heard that one or more Board members are dissatisfied with our approach to this effort and have some different ideas as to how we might better go about this effort strategically and/or tactically. If so, it is hoped that the upcoming Board Meeting will provide a good forum for sharing constructive ideas as to how to accomplish our longstanding legislative goal, before we continue to invest even more hours in an effort that may not be the direction in which the Board wants to go as a strategic matter.

There is no doubt but that the work that John Chwat, Dave Sumner, Dan Henderson, Director Woolweaver and I have done on this effort so far in direct advocacy is entirely consistent with Board policy generally. Indeed, ARRL has attempted to extend the PRB-1 limited preemption three-part test for governmental land use regulation to private land use regulation since shortly after 1985 when the preemption policy was first enunciated by FCC. Long ago, prior to the last term of Congress, we planned to accomplish this via a two-part legislative effort: first, to cause a government study of the effects of private land use regulations on Amateur Radio emergency communications; and second, to use that study as the basis for the "Phase 2" legislation extending the FCC Amateur preemption policy to private land use regulations. Though FCC, defensively, did not wish to concede that there is an urgent need to preempt private land use regulation in the Amateur Radio antenna context, the record that was established in Docket 12-91 last year was compelling indeed. It is a good basis with which to go forward with our Phase 2 legislation, and we have no choice but to do a major push for it right now, lest we lose the momentum that exists as the result of the study docket record established last year. Now is the time for this effort. If you have constructive ideas for improving our strategy or tactics for implementing it, they are most assuredly welcome.

We have not yet "called out the troops" on this legislation because there has not yet been found a sponsor for the legislation in either the Senate or the House. Finding a sponsor for this legislation requires a tremendous amount of explanation of the need for it to prospective sponsors. Absent a complete and thorough explanation of the problem and the value of Amateur

Radio, few legislators will want to back our effort in the face of potential opposition from homeowners' associations and their members. Our plan has been to obtain an H.R. and S. number for our bill and then to call for grassroots support for the legislation from the membership once ARRL members have an identifiable target bill to express support for with their own Congressional delegations.

It is frustrating that we have not yet found sponsors for this legislation (and especially frustrating that our two Connecticut Senators have not been willing to step to the plate to help us), but we have planted a lot of seeds indeed in a lot of offices. There is a balance to be established here: While as a practical matter we can't productively call out our troops until we get bills introduced, we have needed (and we have had trouble obtaining) a few letters of support from constituents of the offices that we have visited. It is absolutely necessary to demonstrate that there is some local support for the introduction of this legislation as an initial matter. Dan Henderson has tried hard on short notice to get some letters through our field appointees and through Directors in the relevant divisions. But frankly, that process has not worked as well as we have hoped, and the letters that were not forthcoming have made it hard to "sell" a potential sponsor on introducing the legislation.

In my view, CC&Rs, deed restrictions, covenants, HOA regulations and architectural control committee regulations -- whatever form these pervasive and restrictive obstacles take -- are the largest single threat to Amateur Radio in the near and medium term that exists. Always, spectrum battles are the number one priority for ARRL. But looking at the rapidly escalating numbers of communities and residents subject to private land use regulations which preclude, or regulate without standards outdoor antennas, residential Amateur Radio stations are, increasingly, a thing of the past. FCC is a dead end. We have been to the well too many times on this subject, as have others. Our only remedy is legislative. And this is a tough issue, because (1) covenants are and have always been misperceived as being private contracts; and (2) because politicians are extremely apprehensive about taking on HOAs and the residents of communities "protected" by covenants. It is hoped that the Board will help this effort actively and aggressively as we go along, and if the Board wants us to approach this differently, please tell the President and her Washington team right away, so that we can do this as you see most suitable to achieving the goal.

We have since the last Board meeting been very active and vigilant in monitoring the implementation of the National Broadband Plan and any effects on the Amateur Service. You will recall that on January 7, 2013, CTO Price, Director Mileshosky and I had a meeting in Washington with Frederick D. Moorefield, Jr. (now the Director, Spectrum Policy and Programs, Department of Defense Chief Information Office) and, later in the afternoon, with FCC staff. Since that time, I have met twice more with Fred, once with CTO Price and once most recently by myself in late June. While Fred is interested in talking to me about a matter completely unrelated to Amateur Radio spectrum issues, Brennan and I have used these two additional opportunities to talk to Fred candidly about pending threats to Amateur spectrum from NBP implementation. Honestly, it is startling that we are not faced with more imminent and substantial impacts from the NBP and its implementation than we have been. I attribute this in part to the small size of most of our allocations, and as well the fact that most of our spectrum in the threatened range (essentially 222 MHz through 5925 MHz as a practical matter) is shared

with government users. We informed the Board in January that NTIA's most recent published status report, the *Third Interim Progress Report on the Ten Year Plan and Timetable* published by NTIA in November of 2012 revealed no direct threats of reallocation of Amateur Spectrum for broadband domestically, with two exceptions: (1) The 3100-3500 MHz band (which of course includes our secondary allocation at 3300-3500 MHz) was placed squarely on the table for active investigation and has been since the 2010 NTIA listing of candidate bands; and (2) The *Middle Class Tax Relief and Job Creation Act of 2012* at Section 6401(a) requires that NTIA evaluate spectrum sharing technologies and solutions involving unlicensed devices in the 5340-5470 MHz and 5850-5925 MHz bands. The latter of these two bands of course is part of the 5 cm band (5650-5925 MHz) which is available in Region 2 only. The 5 cm band threat is relatively new; it was not part of the ARRL NBP Committee's Final Report. The NTIA Report did not identify any bands being considered for reaccommodation of displaced users, so it was not helpful in determining whether there are any "secondary" threats to Amateur spectrum as a locus for reaccommodation of government or other services displaced from any of the bands under investigation.

Fred tells us (consistently and repeatedly) that the band 3300-3500 MHz (actually the entire 3100-3500 MHz band), though listed by NTIA as a candidate band for broadband reallocation, is really <u>not</u> threatened. He said that NTIA initially retained some retired military persons to help assemble a candidate bands list for NBP reallocation and those persons were not up to date on the uses that DOD makes of that band. He says that the military radars, including some airborne radars in that band, cannot be moved and will continue to have priority in that band. So, according to Fred, while the band immediately below 3100 MHz, and immediately above 3500 MHz can't really be protected by DOD since their uses are not so critical outside that range, our 3300-3500 MHz band is in pretty good shape at this point.

So that you get the "big picture" about how lucky we really are, the big battleground now is the 1755-1850 MHz band, which is a major target for broadband providers. Reaccommodation of any Federal operations displaced from 1755-1850 MHz is most likely to occur in the Broadcast Auxiliary band at 2025-2110 MHz, which is heavily used daily in all television markets in the United States for electronic news gathering video and for sports and special event video production. The fact that these bands are in play but our 2390-2400 MHz band is not threatened, and our 3300-3500 MHz allocation is apparently safer than we thought is little short of miraculous, given the kind of money that is on the table and the importance to the current administration of using funds from broadband auctions to pay down the deficit and to construct a public safety broadband network. We are doing very, very well so far in terms of avoiding spectrum impact from the NBP.

It is probable, and in fact quite likely, that we will have to accommodate additional Part 15 National Information Infrastructure devices and systems in the 5850-5925 MHz band. More on that topic below, relative to the Docket 13-49 proceeding.

On the enforcement front, we are apparently making some slow progress. We have recently retained on a contract basis, at a very low cost, the consulting services of Riley Hollingsworth, who has enthusiastically used his still-fresh contacts at FCC to encourage a more visible, more aggressive Amateur Radio enforcement program. Riley has met repeatedly with

Laura Smith, and with others in the Enforcement Bureau with whom he formerly worked. This has resulted in some more active efforts in enforcement cases recently, both with respect to amateur licensees who are rule violators and, surprisingly, part 15 device operators who are causing interference to radio amateurs. This is good news, though the deterrence effect of enforcement actions in Part 15 cases does not directly translate into increased responsiveness on the part of Part 15 device manufacturers. By contrast, visible Amateur Radio enforcement actions, if publicized, does have a significant effect on compliance. Laura promises a power line enforcement case in the near term, and some other actions that will be helpful. While we can't and don't really expect any swift turnaround in deterrence of rule violations by radio amateurs, it is fair to say that the noise that ARRL has made and the "front guard" activities that Riley has conducted as our advocate in this area have had a perceptible effect in the right direction. We would propose to "stay the course" in this effort.

While an obstacle to Laura Smith's visibility and to any meaningful efforts in Amateur cases has been the Bureau Chief of the reportedly dysfunctional Enforcement Bureau, Michele Ellison, we may be on the way to a more responsive EB, since Michele became the Chief of Staff to the Acting Chairwoman of the FCC, Mignon Clyburn. The problem is that Mignon Clyburn is not likely to remain in that position and what happens when the new FCC Chairman is confirmed is not at all clear. It is possible that Michele could be returned to the EB as Chief. That would be an undesirable outcome, but of course a situation in which we have no influence at all to bring to bear. So we will have to wait and see.

The last topic that is worthy of some opening remarks is BPL. ARRL sponsored a Washington luncheon recently, one of a periodic series of primarily social gatherings intended to keep close those radio amateurs who are in positions that could be helpful to us, and to do some information sharing. It is a great group of folks who are enthusiastic participants. At that meeting, I was asked to say a very few words to the group. Thinking about word economy on a topic that we have worked diligently on for literally ten years, it struck me that, for the first time in an FCC proceeding in my experience, we lost every battle at the agency but we won the war. That is what I ended up telling the group. Winners write the history, and FCC's orders, if read sequentially, show that FCC disagreed with us at every turn, and as late as April of this year held that ARRL had brought no new arguments to the table and that there was no reason to place burdens on BPL technology, which it said "has potential applications for broadband and Smart Grid uses." However, it has been made painfully clear in the marketplace that BPL has no active utility at present as a broadband delivery mechanism. Because of the visibility of the interference potential of BPL that ARRL (and essentially only ARRL) brought to the table, BPL is an abject commercial failure. It was too much to hope for that FCC would admit that its cheerleading over time was misplaced, or that its repeated reaffirmation that its original, flawed rules were adequate was a mistaken conclusion. But FCC's inability to admit error pretty much controlled this proceeding. Ironically, it is simple to argue (and we did argue) that FCC's refusal to give an inch on the BPL rules doomed BPL because it allowed ARRL to keep the interference potential of BPL on the front burner for a full ten years. Likely, BPL would have doomed itself, given its inherent flaws, over time. But it is absolutely fair to say that ARRL's relentless effort, facilitated by the Board's generosity in allowing the expense of a court appeal, and by Ed Hare's excellent technical submissions, contributed significantly to the death of BPL in the marketplace.

B. Spectrum Allocation Issues.

1. ET Docket 12-338, Amendment of Parts 1, 2, 15, 74, 78, 87, 90 & 97 of the Commission's Rules Regarding Implementation of the Final Acts of the World Radiocommunication Conference (Geneva 2007), Other Allocation Issues, and Related Rule Updates; 135.7-137.8 kHz and 1900-2000 kHz primary allocation.

You will recall that FCC released on November 19, 2012 an NPRM proposing to implement domestically the WRC-07 final acts. The NPRM, among many other things, proposes (somewhat cautiously) to allocate the 135.7-137.8 kHz band to the Amateur Service. FCC asked whether (but did not propose) that the 135.7-137.8 kHz band should be allocated to the Amateur service on a secondary basis and restricted in accordance with footnote 5.67A of the Radio Regulations. It also asked why it should reevaluate the prior decision to not allocate the 135.7-137.8 kHz band to the Amateur Service. The concern was to protect PLC systems operating under Section 15.113 of the rules, which FCC said serve "important functions, such as tripping protection circuits if a downed power line or other fault is detected in the power grid." It sought comments on technical rules or methods that could assure that amateur radio and utility PLC systems could successfully co-exist in the band. There were several other related questions, including whether or not another band segment "within the 9-490 kHz band where use by amateur stations would be a better fit from a spectrum sharing viewpoint?"

This proceeding, as it relates to the small LF band 135.7-137.8 kHz is a rather normal adversarial allocation proceeding. The utilities make use of older technology, Part 15 LF PLC systems for grid control. There is a small group of Amateurs interested in LF experimentation with reasonable facilities that would operate in this band. We filed extensive comments on February 24, 2013 with the help of Ed Hare and Kermit Carlson, establishing that there is not any interference potential whatsoever from Amateur stations at 135.7-137.8 kHz to PLC systems carried on transmission lines upstream from distribution substations at geographic separation distances greater than 1 kilometer from the transmission line carrying PLC signals. Distance separation of less than one kilometer would therefore be an appropriate trigger for any regulatory limits other than EIRP.

As anticipated, a few utilities filed strongly stated but unsupported opposition comments, urged on by UTC. Nor did UTC offer any technical arguments at all. In effect, they just parroted the FCC's language from 2003 and kept reminding FCC that it did not, ten years ago, make the allocation when ARRL asked for it.

While our technical argument that there is compatibility, at the very least, between PLCs and those Amateur stations *located more than 1 km from a transmission line carrying PLC* is unassailable, the fact is that FCC is now revisiting a matter that they declined to resolve favorably to us as recently as ten years ago. Electric utilities are given a good deal of deference at FCC. And it may be telling that FCC, despite the WRC-07 international allocation of this small, 2.1 kHz band worldwide to the Amateur Service, has *not* actually proposed the allocation in the NPRM in this proceeding. Rather, they are merely *considering* it.

The complexities of this LF band in particular caused the Executive Committee to separate our interest in this band from our more important effort with respect to the low-MF band at 472-479 kHz. There are far fewer PLCs operating in the MF segment that we have petitioned for than there are in the LF segment that FCC has now under consideration on its own motion.

UTC's filing included the following arguments:

1. There might be interference to PLCs in the band and there might be interference to Amateurs in the band.
2. Amateurs might use the secondary allocation as a premise for ousting PLCs from the segment.
3. Amateur operation can be accommodated by Part 5 experimental licenses or Part 15 operation.
4. FCC previously declined to make an Amateur allocation in this band because of concerns about interference to PLCs.
5. Nothing has changed since 2003 since FCC declined an allocation for Amateurs in this band.
6. PLCs are more reliable than microwave or leased line alternatives and less expensive than fiber-optic cable or constructing microwave towers.
7. There is no practical co-existence mechanism that would allow sharing.
8. There is no real value of Amateur experimental operations and there is no significant interest in conducting such operations, based on the small number of experimental licenses in this band held by Amateurs.
9. The band in Europe is allocated to Amateur Radio on a secondary basis but PLC use in that band there is only for in-home applications and on the low-voltage distribution grid, unlike here.
10. There are more PLCs in this band now than there were in 2003 (2000 then, 2100 now).
11. It would cost a lot of money to have to move incumbent PLCs out of the frequency range 130-145 kHz (plus or minus).

None of these assertions is documented or quantified. The other utilities that commented (PPL Electric, Dayton Power and Light, Centerpoint energy Houston Electric, Entergy, and Excelon) made largely the same points, also without any citation of authority.

We filed reply comments on March 27, 2013 in response to the utilities' filings. We reiterated that there is no basis for concern about amateur operations located *more* than 1 km from the PLC-bearing transmission line, and therefore a total ban on amateur use of the new LF band in the US is regulatory overkill. We urged a notification requirement for Amateur stations that wanted to operate at LF within 1 km of a transmission line, and ARRL offered to act as a clearinghouse for such operation. The utilities' best argument is that Amateur operation *within* 1 km of a transmission line could predictably cause interference to incumbent PLCs and it will cost a lot of money for the utilities to protect themselves by relocating outside that range just to accommodate some experimenters. To address this, we indicated some openness to multiple solutions as long as the end result is accommodation of Amateur operations that would pose no possibility of interference to PLCs. Non-interference seems to be FCC's precondition for any Amateur operation in this band.

The other, very important proposal in this docket was to elevate the Amateur Radio allocation from secondary to primary in the 1900-2000 kHz band. This essentially unwound an action taken in 1983 which allocated the 1800-1900 kHz band to the Amateur Service on an

exclusive basis, and the 1900-2000 kHz band to radiolocation on a primary basis for Federal and non-Federal use and, pursuant to Footnote US290, to the Amateur Service on a secondary basis. The purpose of allocating 1900-2000 kHz to the radiolocation service was to provide relocation spectrum for radiolocation stations that would be moved out of the 1605-1705 kHz band when expanded-band AM broadcasting would be implemented in that band. However, there were no displacements and that older radiolocation technology is largely obsolete. We had to oppose in our reply comments a submission from an importer and distributor of marine buoys used, they say, for "USA based high seas migratory species fishing fleets in the Atlantic and Pacific Oceans." We noted that any use of these buoys on a U.S. registry ship would be completely illegal and that the illegal use of these buoys has caused interference to licensed Amateur stations for many years.

There is virtually no doubt but that the 1900-2000 kHz band will be returned to primary status in this proceeding ultimately. As to the LF segment, that is far less assured. FCC has taken no action since the comment periods closed in late March.

2. ARRL Petition for Rule Making to Amend Parts 2 and 97 to Create a New MF Allocation for the Amateur Service at 472-479 kHz.

We filed a Petition for Rule Making on November 29, 2012 seeking to implement domestically in Part 2 of the FCC Rules (the Table of Allocations) and in Part 97 (Amateur Radio service rules) the WRC-12 allocation of the medium-frequency band 472-479 kHz (630-meters) to the Amateur Service. Unlike the 135.7.137.8 kHz band, the 630-meter band is in an area of spectrum in which very few PLC systems are located.
According to a 2002 IEEE study, in 1999, only 20 PLC systems operated anywhere in the band 450-490 kHz. Of that 40 kHz-wide segment referred to in that article, only 7 kHz is proposed herein to be allocated domestically to the Amateur Radio Service. Therefore, even if <u>any</u> of those 20 PLC transmitters that operated *somewhere* in the 450-490 kHz in 1999 are still operational, and even if <u>any</u> of those which were operating in 1999 and which are still operational are presently operating in the small segment 472-479 kHz, it would surely be a simple matter indeed to retune those very few PLC transmitters less than 4 kilohertz, which is less than 1 percent of the available operating frequencies for PLC systems at LF and MF.

We asked in the Petition for a 5-watt EIRP maximum power level for the 472-479 kHz band, except that areas including parts of Alaska which are in close proximity to the Russian Federation and some maritime mobile operation would be limited to 1 Watt EIRP. These power limits are easily achieved due to antenna inefficiency in this area of the radio spectrum.

The Petition has not yet been given a file number. Initially, this was due to the fact that the Secretary's office misfiled it as a Media Bureau item. That was after we brought it to the attention of the Secretary's office and the Office of the Managing Director. However, now OET has the petition and has not moved it along at all.

3. ET Docket 13-49; Revision of Part 15 of the Commission's Rules to permit unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band.

FCC released its Notice of Proposed Rulemaking in this docket on February 20, 2013**.** It would revise the Part 15 rules governing unlicensed national information infrastructure (U-NII) devices in the 5 GHz band. These devices presently operate in the frequency bands 5.15-5.35 GHz and 5.47-5.825 GHz. They use wideband digital modulation techniques to provide a wide array of high data rate mobile and fixed communications for individuals, businesses and institutions. Slightly different rules apply to 5.825-5.850 GHz. Among the changes being proposed are two additional bands totaling 195 MHz for unlicensed operation: 5.35-5.47 GHz and 5.85-5.925 GHz. The Amateur Radio Service has a secondary allocation at 5.65-5.925 GHz, including an Amateur Satellite Service uplink allocation of 5.65-5.67 GHz and a downlink allocation of 5.83-5.85 GHz. The FCC notes in the NPRM that since it first made available spectrum in the 5 GHz band for U-NII in 1997, it has gained experience with these devices and so it proposes to modify certain technical requirements for U-NII devices to ensure that the devices do not cause harmful interference and thus can continue to operate in the 5 GHz band and make broadband technologies available for consumers and businesses.

The real basis for this NPRM, however, is Section 6406 (a) of the Middle Class Tax Relief and Job Creation Act of 2012, which *required* FCC to begin a proceeding to modify the Part 15 rules to allow unlicensed U-NII devices to operate in the 5.35-5.47 GHz band, subject to consultation with the National Telecommunications and Information Administration (NTIA). Based on the same legislation, NTIA recently released an evaluation of the 5.35-5.47 GHz and 5.85-5.925 GHz bands that details the existing occupancy of these bands by federal and non-federal users and the potential risks of expanded unlicensed use. NTIA did not evaluate the 5.85-5.925 GHz band on its own, however. The legislation required NTIA to study and submit a report on that band not later than August of 2013. NTIA did that study together with that of the lower frequency segment.

Because this is part of a plan to have universal Wi-Fi available, and because it is rooted in specific legislation (though Congress did not require FCC to allocate the 5.85-5.925 GHz band for unlicensed broadband), there is not a lot of flexibility. It will likely happen as proposed, and this will likely lead to a significantly more intensive Part 15 use of that segment of the 5 GHz band. We filed comments on May 28 arguing that the Amateur Radio Service has a good record as a spectrum partner with the other licensed services in the 5 GHz band, and that meaningful access to the 5 GHz band for amateur and amateur satellite operations continues to be in the public interest. We noted that we have been sharing with high powered Part 15 devices in <u>parts</u> of the 5650-5925 MHz band for many years without significant evidence of incompatibility. Section 15.247 of FCC rules permits high-powered (1 Watt peak output power) wideband digital devices at 5725-5850 MHz. FCC said at paragraph 94 of the NPRM that the Amateur Service is secondary in the 5850-5925 MHz subband to fixed satellite (Earth to space) and mobile services, consisting principally of Dedicated Short Range Communications Service devices (DSRC) (such as vehicle-to-roadside communications and other intelligent transportation services), and to stations in other countries authorized in the fixed service. FCC said that it "does not have detailed information on use of this band by amateur service stations." In fact, documented Amateur occupancy of this band is scarce. In this segment there are government radars as well.

ITS America expressed to NTIA grave concerns about harm from this proposal to high-data rate DSRC systems, including Vehicle to Vehicle and Vehicle to Roadside Infrastructure systems.

After the comments were filed, I reviewed the 78 comments in this docket. The Wi-Fi Alliance noted in their comments that an open docket proceeding was not the optimum means of reaching consensus on sharing in the so-called U-NII-4 band (5850-5925 MHz). They called for meetings of "all stakeholders" in the band to meet and address sharing issues.

Normally, we would think that a good suggestion. NTIA forwarded comments of DOT pertaining to DSRC (vehicle-to-vehicle and vehicle-to-infrastructure) in that band. DOT's comments were already stale when NTIA filed them, and so the issue of sharing at 5850-5925 MHz is still very much up in the air. The problem is that no one mentioned Amateur Radio's allocation in that band. Most of the comments addressed DSRC operations in the band, but no references were made to our allocations. While no one is telling us to get out of this band, we could lay low, based on our comment strategy. However, in order to be perceived as a player in this band segment, which no one currently seems to think we are, it was determined to file short reply comments responsive to the Wi-Fi Alliance, to the effect that, if the Commission encourages or is inclined to accept the results of stakeholders meetings, ARRL expects to participate in such meetings.

The reply comment date was extended to July 24, 2013, shortly after the Board meeting.

4. WP Docket 08-63, ReconRobotics, Inc. Video and Audio Surveillance System at 430-450 MHz.

As reported to the Board in January, on November 13, 2012, the Chief, Public Safety and Homeland Security Bureau issued an *Order and Order on Reconsideration* which denied our Petition for Reconsideration of FCC's February of 2012 denial of our August, 2010 Petitions to Deny the license applications of the purchasers who filed applications for Part 90 licenses for Recon Scout devices. We had argued that the applications were not grantable for a number of reasons, principal among which was that they specified an incorrect emission designator. The designator showed a 100 kHz necessary bandwidth, when the analog, monochrome video signal of the Recon Scout has in fact a necessary bandwidth on the order of 5.75 MHz. In fact, the newer versions of the Recon Scout device, when certificated under the FCC's equipment authorization program, *all specify a 5.75 MHz bandwidth*.

We have still open in this proceeding two regulatory initiatives relating to ReconRobotics:

1. We have never had a response to our complaint, filed with the FCC's laboratory on October 4, 2010, asking the FCC lab to rescind the TCB (Technical Coordination Body) grant of equipment authorization for the Recon Scout device, though we demonstrated several serious mistakes made by the TCB in granting equipment authorization to the device in April of 2010. In January of 2011, Julie Knapp, OET Chief, wrote to us and to counsel for ReconRobotics saying

that our complaint about equipment authorization violations was under review. It is still under review now, well more than two years later.

2. We filed a Petition for Reconsideration of a February 6, 2012 letter order of Scot Stone, WTB, FCC. Stone granted to ReconRobotics a modification of the 2010 waiver granted to ReconRobotics authorizing the sale and marketing of the Recon Scout. ReconRobotics asked for authority to sell up to 8,000 of these devices to customers during each of the third and fourth years following equipment authorization of the device. ReconRobotics also asked that any number of devices fewer than the maximum number permitted to be sold in any prior year which were not sold in each of those prior years be permitted to be carried over to future years, so that the limits imposed during a given year could be exceeded by those aggregate amounts of prior-year unsold units. Scot Stone's letter Order of February 6, 2012 stated that the Commission "need not revisit the (annual) Recon Scout sales limits every two years." Instead, without prior notice and comment, and without any explanation, the Order established an annual limit of 8,000 Recon Scout device sales for *all subsequent years*, and allowed unlimited "rollover" of unsold devices from prior years fewer than the annual maxima. ARRL filed its Petition for Reconsideration in the docket proceeding on March 6, 2012. We argued that there was no valid justification for the arbitrary specification of 8,000 annual unit sales, for the unlimited rollover sales provision, and for the elimination of FCC's periodic review of deployment of the number of units.

In each case we are waiting for FCC to act.

5. ET Docket 04-37, Broadband Over Power Line (BPL) regulations).

This is briefly discussed above. FCC finally issued its *Second Memorandum Opinion and Order* on April 17, 2013, denying our Petition for Reconsideration filed December 20, 2011 in all respects. FCC was very careful to address, however inaccurately, each of our arguments, so as to deprive us of the opportunity to take the matter back to the United States Court of Appeals for the D.C. Circuit, which gave us a favorable decision the last time. Because the Court will not substitute its judgment for the alleged expertise of the Federal agency, the agency is entitled to make a terribly wrong decision on the merits, as long as it has taken into account the arguments made and addressed each of them in a way that is not arbitrary, capricious or an abuse of its discretion. With this standard to apply, a further appeal to the Court on the merits of this case would have been doomed to failure. Besides, as discussed above, we really did win the case in the marketplace, where it counts the most in terms of protecting Amateur Radio from destructive HF interference.

FCC's summary remark was that our 2011 Petition for Reconsideration "[did] not raise new arguments based on new information in the record or on the Commission's new analysis of limited points as directed by the Court, nor does it demonstrate any errors or omissions in the Commission's previous decisions." However, as it has done all along, FCC characterized the process in the manner most favorable to its own interpretations, and its own inaction, distorting the circumstances substantially. Dave Sumner noted when the Order came out in April, FCC said that it was not acting on our actual interference complaint filed in December of 2010 because the BPL company, IBEC, shut down its systems 'before the Commission could take action" on

ARRL's complaint. So, FCC said, the complaint was rendered moot. However, the shutdown of the BPL system did not occur until January 2012, more than a year after we filed the complaint. Amateur licensees were apparently supposed to wait until BPL operators become victims of their own financial failings before they gain relief from interference from unlicensed emitters that are operating in clear violation of the Commission's inadequate rules. But really, any revised rules would not have been enforced by the FCC anyway. What remains is for ARRL to remain vigilant and to deal with any residual instances of BPL interference, should any BPL systems be built in the future, on a case-by-case basis.

As to FCC's claim that we brought nothing new to the table, I disagree. For ten years now, ARRL has aggressively and consistently provided to FCC valid technical arguments; cited controlling technical sources, and provided video and audio recordings of actual harmful interference as it occurred at BPL deployments. Here are the conclusions that a responsible Federal agency would have made when presented with Ed Hare's technical showings, and that any unbiased reader of the record in this protracted rulemaking proceeding would find irrefutable: (1) BPL technology has a high interference potential to high-frequency and medium-frequency authorized radio services. (2) BPL interference on medium-voltage overhead power lines occurs over substantial distances along power lines and at substantial distances away from power lines. (3) The interference potential of BPL at hundreds of yards from overhead power lines has been documented by NTIA and by the FCC's own laboratory staff. (3) Each and every BPL deployment that has not effectively notched Amateur radio bands, full-time, to a reasonable notch depth, has caused interference to stations in the Amateur Radio Service. (4) FCC has not effectively addressed or resolved <u>any</u> BPL interference case reported to it to date, and its resources are insufficient to remedy BPL interference after the fact. (5) The only way to protect geographically proximate radio services from BPL interference (such as Amateur Radio stations, most of which are located very close to medium voltage overhead power lines) is by rules which prevent the interference at the outset. (6) Responsible BPL companies long ago demonstrated that it is possible to notch, at all times, all Amateur Radio bands to a reasonable notch depth between 25 and 35 dB, without any functional degradation of their systems. This is the least that FCC should have required in its rules, because interference prevention is possible; post-hoc remediation is not. As I stated in April when this Order was released: "In this instance, FCC has not acted responsibly in its stewardship of the MF and HF radio spectrum. ARRL will continue to vigilantly guard against the abuse and pollution of the radio spectrum in the use of BPL technology on a case-by-case basis, as necessary, wherever necessary." I trust that the Board will allow that promise to be kept.

6. RM-11651, Lockheed-Martin Corporation Petition to Relax Part 15 Rules for RFID Systems at 433 MHz.

This proceeding has had no FCC action since the last Board meeting. On October 11, 2011, Lockheed Martin Corporation (which owns Savi Technology, an RFID manufacturer, as a subsidiary) filed a Petition for Rule Making asking that the FCC change the Part 15 rules governing RFID tag reading systems in the 433 MHz range. FCC put the petition out on public notice on December 14, 2011. We filed strong comments in opposition to the petition on January 10, 2012, and Lockheed replied on January 25, 2012. There were only 6 comments filed, and one

was Lockheed's reply to ARRL's Opposition Comments. No action has been taken by FCC so far.

However, we did discover late last year that there is a good deal of interest in 433 MHz RFID technology because the new generation of such equipment has utility in Homeland Security applications around loading docks and military facilities. That being the case, this is a dangerous proceeding for the Amateur Service.

Lockheed Martin (Savi) wants to expand the permitted frequency range of RFID tags from 433.5 - 434.5 MHz to 433.05 – 434.79 MHz; to implement a listen-before-transmit protocol that would supposedly detect the presence of authorized service transmissions prior to transmitting RFID data; to eliminate the current requirement that all RFID systems be registered with FCC by the manufacturer; and to do away with the limit on deployment of RFID systems in this band to *commercial or industrial areas* and the application limitation to *commercial shipping containers*. Finally, the present Section 15.240 rule calls for radiated emission limits of 11,000 uV/m measured at 3 meters from the device. The Lockheed petition proposes to increase this to 57,700 uV/m at 3 meters (with a resolution bandwidth of 100 kHz). We will continue to monitor this proceeding.

7. WT Docket No. 06-49; Amendment of the Part 90 Rules in the 904-909.75 and 919.75 - 928 MHz Bands.

No FCC action has been taken on the underlying NPRM in this proceeding since the last Board meeting. FCC on March 7, 2006 had released a Notice of Proposed Rule Making, which re-examined the portions of the 902-928 MHz band used for multilateration LMS (this is the high-powered locating system, operated under Part 90, which hasn't caught on very well). FCC wanted to know whether greater opportunities can be provided for LMS service while continuing to accommodate licensed and unlicensed uses of the 902-928 MHz band. ARRL comments, filed May 30, 2006, urged that the Commission look at the 902-928 MHz band allocations on a broader basis. Our comments attempted to protect at least the most sensitive Amateur operations at 902-928 MHz. The proceeding has largely devolved to a battle among Intelligent Transportation Systems equipment manufacturers that manufacture Mobile LMS devices.

FCC released on December 20, 2011 an Order granting a waiver of some multilateration LMS rules to a company called Progeny affecting Part 90 LMS operation by this company in the 902-928 MHz band. FCC granted this waiver to enable Progeny to utilize a more advanced and efficient multilateration location service than had been contemplated when the rules were established in 1995. Specifically, FCC waived the prescriptive technical requirements specified as part of the construction requirements to allow Progeny to take advantage of technical advances in multilateration technologies over the past fifteen years when it deploys its network. Further, FCC granted a limited waiver of a Part 90 rule which provides that multilateration LMS systems' "primary" operations involve the provision of vehicle location services. FCC therefore enabled Progeny to make its service equally available to other mobile devices so long as Progeny provides its location service to both vehicular and non-vehicular location services. This will facilitate the deployment of a multilateration service that can provide highly accurate location determinations, including more precise location information that can improve delivery of E 911

emergency services. It will translate to more noise for Amateur operations in the 902-928 MHz band. Progeny has 228 licenses including two 6 MHz bandwidth channels in 113 Economic Areas around the country.

There was a flurry of pleadings in 2011 related to this waiver from Skybridge Foundation Systems, Telesaurus Holdings, and other entities with proposed uses in the band 902-928 MHz. FCC has not, however, taken any action that would further prejudice Amateur uses of this band thus far.

8. RM-11666, Vehicular Radars at 77-81 GHz. Filing by automotive manufacturers to amend Part 15 of the rules to permit operation of vehicular radars to operate at 77-81 GHz in addition to 76-77 GHz.

There is little new on this issue since the last Board meeting. The petition that I filed on behalf of my client Robert Bosch, LLC (and other automobile manufacturers and automotive radar manufacturers worldwide) to standardize the operation of unlicensed, short-range and medium-range vehicular radars in the 77-81 GHz range in the United States on a Part 15 basis was placed on public notice on July 17, 2012. Comments were due in August of 2012 and reply comments later in August. There were no opposing comments filed but several supporting comments were filed by automobile manufacturers. This is a domestic version of a worldwide effort to consolidate newer automotive safety functions in automobiles in the band 76-81 GHz. The band is already in use in Europe for this purpose. Applications include automatic braking, sideward and rearward anti-collision systems, and other safety systems. There is no threat to continued Amateur Radio unrestricted access to our primary allocation at 77.5-78 MHz or our secondary allocation at 78-81 GHz.

WRC-15 agenda item (1.18) proposes the creation of a primary allocation of the band 77.5-78 GHz for radiolocation worldwide. There is no proposal to exclude Amateur Radio from that segment or to reduce its current allocation status there or in the remainder of the 77-81 GHz band.

C. Non-Allocation FCC Regulatory Issues

1. RM-11699, Encryption of Data in Amateur Radio Communications.

Don Rolph, AB1PH, filed a petition March 28, 2013 arguing that "agencies served by amateur radio communication during emergencies perceive" that encryption is required, including "specific patient information covered by HIPAA, identification of sheltered persons, etc." He also argued that certain emergency information is required for tactical purposes to be encrypted, such as "logistical information: (movement of food, medical supplies, certain movements of personnel)." He also suggests that for national security reasons certain emergency communications should be encrypted. He concludes that Australian Amateur Radio rules are more appropriate than are current United States Amateur regulations on this issue. Those rules are very much like ours, except that among the exemptions from the prohibition of encoding for the purpose of obscuring the meaning of the signals are "intercommunications when participating in emergency services operations or related training exercises."

The Board has seen by now the Memo that Dave Sumner and I prepared and circulated by order of the Executive Committee on this subject. Based on that memo, the EC concluded that comments should be filed opposing the Petition as being factually and legally unjustified. We did this on the due date, July 8, 2013. There were at the time just over 200 individual comments filed. While we do not normally file comments on non-spectrum-related petitions for rule making, choosing to wait instead until FCC issues a Notice of Proposed Rule Making or a Notice of Inquiry, this policy is not inviolate and in this case, the EC chose to exercise leadership on this significant issue by filing a fairly extensive set of comments on the subject of encryption generally, at the Petition stage.

There are now 291 comments filed, the vast majority of which are opposed, some vehemently, to relaxed regulations on encryption of Amateur Radio communications. ARRL's comments took the position that there is no evidence now on the table that encryption is necessary in order for Amateur Radio to remain relevant in emergency and disaster relief communications today. We left the door open, however, should that prove to be inaccurate as a factual matter in the future. The Executive Committee did as well urge that ARRL correct by publication of information on this subject the widespread but mistaken assumption that encryption is required by the Health Insurance Portability and Accountability Act (HIPAA), and that there is some widespread view that Amateur Radio cannot be incorporated into emcomm planning due to the encryption prohibition in the Part 97 regulations.

2. ET Docket No. 13-44, Amendment of Parts 0, 1, 2, and 15 of the Commission's Rules regarding Authorization of Radiofrequency Equipment; Amendment of Part 68 regarding Approval of Terminal Equipment by Telecommunications Certification Bodies.

In this NPRM released February 15, 2013, FCC proposes changes to its equipment authorization processes (Part 2 of FCC Rules) in several respects. It addresses the role of Telecommunication Certification Bodies (TCBs) in certifying RF equipment and post-market surveillance, as well as the Commission's role in assessing TCB performance. It also addresses the role of test laboratories in the RF equipment approval process, including accreditation of test labs and the Commission's recognition of laboratory accreditation bodies, and measurement procedures used to determine RF equipment compliance. Finally, it proposes to recognize the National Institute for Standards and Technology (NIST) as the organization that designates TCBs in the United States and to modify the rules to reference the current International Organization for Standardization and International Electrotechnical Commission (ISO/IEC) guides used to accredit TCBs.

This is not a docket proceeding that *directly* affects the Amateur Service. However, the track record for TCB certification of RF devices in terms of errors and ill-advised grants of certification is abysmal. FCC lab staff constantly has to review and set aside TCB grants of RF equipment. The best example of the inadequate performance of TCBs in recent memory is with respect to a TCB grant of the ReconRobotics Recon Scout device. The inadequacies of the TCB's evaluation of this device were visited on the Amateur Service.

ARRL has some countervailing considerations in this Docket, however. On the one hand, we want RF devices in other services with whom we share spectrum (or where the other service is adjacent to Amateur spectrum) to be carefully evaluated by a competent reviewer at the equipment authorization stage. On the other hand, we don't want small manufacturers of small quantities of Amateur Radio equipment to be burdened by the very high cost of the FCC's equipment authorization process. An example of the latter is a small manufacturer of Amateur equipment that incorporates a scanning receiver. Those receivers have to be certified according to FCC rules. This involves a private laboratory and a TCB certification, which is expensive and which deters manufacturing of RF equipment in small quantities for, as an example, the Amateur market. This proceeding could be used to request exemption of certain types of equipment intended exclusively for Amateur Radio use, so as to make sure that it is available at a reasonable cost.

FCC proposes that the Commission no longer conduct evaluations for initially approving RF equipment requiring certification. Instead, TCBs would approve ***all*** such equipment in the first instance, including equipment on an "exclusion list" that now, only the Commission may approve. Equipment on the exclusion list includes MedRadio transmitters designed to operate in 413-419 MHz, 426-432 MHz, 438-444 MHz, 451-457, and 2360-2400 MHz bands (Part 95 Subpart I). Surely, we want the Commission to continue to certify these devices. FCC also proposes to clarify and modify the rules on TCB responsibilities. Specifically, FCC proposes to codify the "permit-but-ask" procedure that TCBs must use when certifying new technologies when testing protocols have not been established, clarify the responsibility of TCBs to perform post-market surveillance of products they have approved, and specify steps that can be taken if a TCB's performance were found to be deficient. FCC also proposes to require accreditation of all laboratories that test equipment subject to the Part 2 certification procedure, and to codify the existing procedure through which the Commission can recognize new laboratory accreditation bodies. Finally, FCC proposes to incorporate the latest versions of the industry standards for measuring equipment into the rules and address how to update these standards more quickly in the future. Finally, FCC proposes to modify the rules to reference the current ISO/IEC standards used to accredit TCBs that approve RF equipment under Part 2 of the Commission's rules. Its intention is to enable new and innovative products to be brought to market as quickly as possible, promoting competition in the provision of RF equipment, while at the same time protecting against interference among radio services and devices using the RF spectrum. However, FCC says that it recognizes that certain proposed changes, such as requiring laboratories to become accredited, would result in some increased costs.

The Executive Committee decided to file comments in this proceeding emphasizing the poor record of some TCBs and the need for continued oversight by the FCC lab. Those comments have not yet been prepared for filing but will be shortly.

3. ET Docket 13-101, Technological Advisory Council Recommendations for Improving Receiver Performance.

On April 22, 2013 the Commission released a Public Notice asking for comments on a white paper prepared for the Commission by its Technological Advisory Council (TAC). We have had a delegate on this Council in its various iterations for some time, and continue to have

representation on the TAC. The TAC did a study, released February 6, 2013, on the use of "harm claim thresholds" in improving interference tolerance of wireless systems. The TAC study postulates that increased spectrum user density is the inevitable result of new wireless services and that the intensification of use of the wireless spectrum will necessitate new overlays of dissimilar radio services in shared spectrum. Therefore, it concludes, it will be necessary to depart from the regulatory model that the FCC has utilized for spectrum allocations. The longstanding model has, almost without exception, put limits only on transmitters. However, the inability of receivers to reject out-of-band emissions, for example, constrains new allocations in adjacent bands. This inefficiency can no longer be tolerated, says the TAC, due to the full deployment of the radio spectrum. So the TAC urges an "holistic" approach to transmitter and receiver performance. It is not necessary to regulate manufacturers of receivers, says the TAC, but only to establish an "interference limits policy" by establishing harm claim thresholds (HCTs) on in-band and out-of-band signals. These are signal strength limits, expressed in terms of field strength density or power flux density at a percentage of times and locations within a service area.

HCTs would determine only a threshold condition and therefore determine the ability of an interference victim to seek a remedy from the FCC. This would suit many radio services, but not, they say, safety of life services such as aviation and public safety. The TAC proposes that these HCTs would be established by a "multi-stakeholder process" that suggests that it would be done in the private sector, encouraged but not determined by the FCC.

The trick, of course, is the establishment of a proper HCT and the process of doing this. Comments are due in this proceeding immediately AFTER the Board meeting. We are as of this writing preparing comments for filing in the docket. We filed extensive comments on this same subject in 2003 in Docket 03-65, a notice of inquiry that was never resolved, which considered an intention to regulate receiver performance (i.e. interference immunity) specifications to encourage more efficient use of the spectrum. ARRL encouraged this effort at that time.

4. ET Docket No. 10-236; Promoting Expanded Opportunities for Radio Experimentation and Market Trials under Part 5 of the Commission's Rules and Streamlining Other Related Rules.

FCC issued a Report and Order in this proceeding on January 31, 2013, just after the last Board meeting. It constituted a significant retreat from its more radical proposals for vastly expanding the experimental license concept and authorizations. However, it did modify FCC's experimental licensing rules to make it easier for higher education institutions, manufacturers and health care facilities to develop and test new RF devices. Our interest in this docket is due to the fact that that very often, experimental licenses and Special Temporary Authority grants are issued for Amateur spectrum. FCC established three new types of experimental authority to supplement conventional experimental licenses: program, medical testing and compliance testing. These will allow operation of multiple uncertified RF devices under a single 5-year renewable license in virtually all frequency bands.

The program experimental license is especially liberal, but does not wholly exempt licensees from FCC oversight. Under the new program experimental regime, licensees will be

required to register with the FCC and notify the agency of upcoming individual experiments and provide results of same via a new, publicly available FCC web portal. FCC preserved the option for licensees to request confidential treatment of sensitive data associated with experiments and new products. Frequency, power, location, emission designators and contact information will always be required of applicants and will always be available to the public.

FCC also relaxed its market trials rule, for the first time permitting sale of RF equipment between licensees in a market trial, provided that they each have an experimental license. Further, licensees will be able to lease RF equipment to market trial participants. In addition, the FCC increased its current importation limits, raising to 4000 the number of RF devices—whether operating on a licensed frequency or not—that can be imported for compliance testing and market studies.

Under the Program Experimental License, qualified institutions are permitted to conduct ongoing research and experimentation under a single experimental authorization for a 5-year period on a non-interference basis, without having to obtain prior OET authorization for each distinct experiment or series of unrelated experiments. The conventional experimental license remains an option under the revised Part 5 ERS rules. It authorizes a narrowly defined single experiment or several closely related experiments which are often limited to a defined geographic area. A program license will permit licensees to conduct unlimited, unrelated experiments at defined geographic locations under the licensee's control provided that, with limited exceptions, they do not operate in restricted frequency bands or create harmful interference. Otherwise, licensees may conduct experiments within a broad range of frequencies, emissions and power levels to support ongoing research. Program licenses will be issued for a 5-year term and may be renewed for additional 5-year periods.

Eligibility to hold a program experimental license is extended to:

- A college or university with a graduate research program in engineering that is accredited by the Accreditation Board for Engineering and Technology;
- A research laboratory (not limited to federally funded labs);
- A hospital or health care institution (for non-clinical trial testing only);
- A manufacturer of RF equipment; or
- A manufacturer that integrates RF equipment into its end products.

Each application must specify and will be limited to a geographic area that is inclusive of an institution's facilities where the experimentation will be conducted and that is under the applicant's control. If an applicant needs to conduct experiments in more than one defined geographic area, it must apply for a license for each location.

FCC discourages use of the restricted bands for experimental licenses. Applications proposing use of public safety bands will be considered on a case-by-case basis, and likely will require the applicant to prove a lack of harmful interference prior to operation. Critical service bands (i.e., bands used for the provision of commercial mobile services, emergency notifications, or public safety purposes) are eligible for program licenses, but the applicant must submit a specific plan to avoid harmful interference to operations, provide prior notice to incumbent licensees *and* their end users of potential impacts of the experiment, and describe how the

applicant will identify and eliminate harm from the experiment. Commercial mobile services (including broadband) bands are included in the critical service bands. No plan is proposed for interference showings involving Amateur bands, and no prior notification of ARRL for experimentals or STAs in Amateur allocations is required.

Program experimental licensees must supply the FCC a "stop buzzer" point of contact, a person available during the entirety of an experiment who can stop an experiment immediately upon complaint of interference or other harm. This is good news for ARRL in terms of remedying interference after it occurs. The contact, and all other application information, will be uploaded to a new, publicly available FCC web site. FCC envisions that interference complaints will be handled privately, but FCC reserves the right to resolve complaints as well. A program licensee must also provide to the FCC specifics about each individual RF experiment ten (10) calendar days prior to commencement, again via the web site. Whatever frequencies are involved, the plan must identify the measures taken to avoid causing harmful interference to any incumbent service licensee. Although FCC rejected calls for prior consent from or coordination with incumbent licensees, the agency emphasized that the no-interference component of the program license application is an "essential requirement" that should not be taken lightly: "We expect that in exchange for the flexibility we are providing through the program license, program licensees will do a thorough analysis to ensure that incumbent licensees are protected from harmful interference."

Any program application or individual experiment that involves exclusive *or shared federal spectrum* will face a slightly different approval process at the FCC. First, the FCC will coordinate all such requests with the National Telecommunications and Information Administration (NTIA), which has 15 days to respond to the FCC. Thus, applicants are advised to build in sufficient lead time—likely longer than 15 days granted to NTIA—prior to the experiment. Second, the FCC will conduct a location-specific coordination with NTIA and based on the outcome of that coordination the FCC may place special conditions on the license, including a list of frequencies or frequency bands on which the applicant would be restricted from operating on at the proposed location.

FCC adopted another new experimental authority called a "medical testing license," which will be made available to qualifying "health care facilities." A health care facility is defined to include: *hospitals and other establishments that offer services, facilities and beds for use beyond a 24 hour period in rendering medical treatment, and institutions and organizations regularly engaged in providing medical services through clinics, public health facilities, and similar establishments, including government entities and agencies such as Veterans Administration hospitals; except the term health care facility does not include an ambulance or other moving vehicle.*

The medical testing license will allow clinical trials of medical devices that have already passed through the early developmental stage and are ready to be assessed for patient compatibility and use, as well as operational, interference, and RF immunity issues in real world situations. Unlike a program license—which is geographically contained—a medical testing license entitles a health care facility to deploy RF devices off site, *including to home-bound patients or to ambulatory patients using implanted or body-worn medical devices*. Like a program

experimental license, a medical testing license will be conditioned on appointment of a "stop buzzer" contact, prior public notice of experiments via the FCC registration portal and public disclosure of experimental results.

To date, FCC rules have prohibited marketing or operation of RF equipment prior to authorization, with certain exceptions. For example, the rules allow for advertising and display, conditional sales to certain businesses, and outright sales of equipment not yet authorized so long as proper notice is provided to the prospective buyer. Further, a manufacturer is permitted to operate its product for demonstration or evaluation purposes under authority of a local Commission-licensed service provider so long as that equipment operated in the bands licensed to that service provider. Additionally, the rules permit licensees operating non-certified equipment under experimental radio authorizations to conduct "limited market studies," on a case-by-case basis subject to limitations established by the FCC. The FCC R&O changes this. First, going forward manufacturers will be allowed to operate unauthorized equipment ***in a residential area***, so long as the equipment is operated in conjunction with, and under the authority of, a service provider's license. Second, FCC allows general operation of as-yet certified RF devices without the need for an experimental license, provided that the devices are operated as part of a trade show demonstration and at or below the maximum power level permitted for unlicensed devices under Part 15. The FCC has expanded this exception for devices designed to operate under any rule part, not just Parts 15, 18, or 95, but capping the power level for demonstration purposes to the Part 15 levels.

In a product development trial, licensees must own all of the equipment, must inform all participants of the nature of the trial, and must not market devices or offer services for hire. Market trials, coming later in the development process, will also have a requirement that the licensee retains ownership of all equipment, but the FCC will allow limited marketing of equipment. Specifically, sales of equipment between licensees in a market trial will be allowed, provided each licensee has an experimental license authorizing a market trial. The FCC will also permit the lease of equipment to trial participants.

Former FCC rules allowed up to 2000 units for RF products designed solely for operation within a radio service that requires an operating license, and up to 200 units for all other devices. The R&O increases the importation limit for all RF devices, licensed or unlicensed, to 4000 units.

While FCC declined to adopt rules modifying its existing coordination processes and procedures (and specifically rejected rule changes imposing timelines on application processing) it did commit to upgrading its electronic filing system and to making more information available about the status of pending applications. That is good news for experimentals in Amateur spectrum. Overall, the resolution of this docket was far better for Amateur Radio than we anticipated it would be.

We still have disagreements with FCC about the handling of university cubesat facilities in Amateur bands, which formerly were considered to be Amateur Radio experiments, even when conducted by universities under the auspices of an amateur licensee. However, recently, FCC has decided to authorize these facilities as Part 5 experimental license facilities. This is a

problem generally since satellite facilities do not neatly fit into an experimental licensing model, but they also invite long-term, non-amateur uses in our allocations. Dave Sumner is working with the FCC International Bureau and the Office of Engineering and Technology on this subject.

5. WT Dockets 12-283 and 09-209; RM-11625 and RM-11629; Amendment of the Amateur Service Rules Governing Qualifying Examination Systems and Other Matters; Amateur Use of Narrowband TDMA Part 90 equipment in the Amateur Service; Examination Session Remote Proctoring

There has been a good deal of activity in this proceeding since the January Board meeting. The Commission granted on March 25, 2013 our October 4, 2012 second temporary waiver request to permit single- and dual-slot TDMA emissions while this docket is pending, authorizing F7E, FXD and FXE emissions to allow Amateur use of Motorola MotoTRBO TDMA radio equipment now widely in use in the Part 90 land mobile service.

ARRL comments were filed in this docket December 21, 2012. It was determined that no reply comments were called for. Prior to the filing of comments, President Craigie provided a comprehensive briefing memo to the Board discussing the issues and calling for input from the entire Board on our response to the issues raised in the Notice of Proposed Rule Making. The Executive Committee took the Board's input and developed a comprehensive policy for ARRL's comments on the examination issues. ARRL's comments oppose the two major proposals in this proceeding: the reduction of the number of required VEs for a test session from three to two; and the permitting of remote test proctoring (except by case-by-case waiver premised on a showing of security and need). We also opposed affording exam credit for former licensees whose licenses expired beyond the two-year grace period for reinstatement, or for former CSCE holders, though ARRL's opposition was very mildly stated on this topic. We did urge that Amateur licenses should be renewable within six months prior to expiration. If this is done, there is less likelihood that a license will be inadvertently permitted to expire and therefore no need to extend the two-year grace period for reinstatement of a license without reexamination.

After the comment periods were closed, we received a reliable indication that the Wireless Bureau was intent on reduction of the number of VEs from three to two, and that it was also considering lifetime examination credit for examination elements previously passed. In response to this information, Dave Sumner and I set up an ex parte presentation to Cross and Stone at FCC. We made the following points in a written document which we left with them:

► The VEC system has been meeting the needs of the Amateur Radio community for nearly 30 years. It works exceptionally well with minimal involvement by and without funding from the Commission. The Commission has wisely chosen to allow this successful program to suggest its own minor regulatory changes from time to time rather than to impose changes itself.

► The Commission's Mobility staff has stated publicly at a conference of the NCVEC that "the 14 VECs of the NCVEC are serving the FCC and public competently and provide an abundance of exam opportunities. Therefore, additional VEC organizations are not needed."

► The proposed reduction in the minimum number of administering/certifying VEs per examination from three to two is not premised on any quantified shortage of examination opportunities. There is not now any such shortage numerically. Examination opportunities are widely available geographically.

► The NPRM, at paragraph 19, claims that the VEs and VECs have "almost eliminated examination grading and application completion errors and that fraud or abuse has been minimal." Based on this unquantified claim, the Commission tentatively concludes that "the required number of administering VEs can now be reduced without jeopardizing the integrity of the amateur operator license examination system. The conclusion does not follow from the premise.

► While the overall integrity of the VE program is relatively high, that is so largely because of the three-examiner requirement. Absent a factual, quantified record established in this proceeding which demonstrates that there are numerous instances of examination unavailability, the Commission should not take any action in this proceeding that will predictably lead to compromises in the integrity and the perceived integrity of the VE program.

► The ARRL-VEC administers approximately 73 percent of Amateur examinations. The W5YI-VEC administers approximately 18 percent of Amateur examinations. Together, the two VECs administer approximately 91 percent of all examination opportunities. Both VECs have filed comments in this proceeding stating opposition to the proposal for reduction in the number of VEs per examination session from 3 to 2.

► The clear consensus within the VE community, among those VEs who are accredited with ARRL-VEC is to leave the three-examiner rule intact.

► During the pre-restructuring era, Morse telegraphy examinations made it easier for VECs to detect compromised examination sessions. This detection is now very difficult, and it is seldom that VECs can ascertain examination integrity information from the session paperwork or multiple choice exams. VECs rely on their examiners to prevent fraud or report fraudulent activity to the VEC or FCC. Three examiners substantially decreases the likelihood of conspiratorial action to compromise an examination session. Decreasing the number of VEs required to conduct an exam session will further reduce our ability to detect fraud and will increase the ability to compromise an examination. This rule preserves the integrity of the program.

► The Commission's enforcement resources are inadequate to address any significant increase in compromised examination sessions. The self-regulatory nature of this program is absolutely dependent on deterrence, and the three-examiner requirement is a critical element of the compliance effort going forward.

► Reducing the number of VEs from three to two would not necessarily result in an increase in the number of exam sessions in the very few areas that could benefit from additional exam opportunities. Remote testing procedures in those very few areas would, on the other hand, make sessions more accessible and would directly address the issue of examination availability

without increasing the risk of compromising an examination session, or the perceived integrity of the VE program.

► Affording lifetime examination element credit for prior license holders would be a significant burden to the VEC system. The VE program was not designed or equipped to shoulder the burden of proof of prior licensing or prior examination credit.

► The VECs are not financially able to shoulder this burden, nor do we have adequate records or the ability to track or authenticate prior examination element or licensing information. The Commission requires VEC record retention for only 18 months. The Commission's license records are also limited and are available only to the mid-1960s.

► The Communications Act permits Volunteer Examiners to administer exams. It does not permit them to process license applications or to authenticate documents for that purpose. That is a Commission function.

We will continue to advocate the above points, which summarize our comments in the proceeding.

6. ET Docket Nos. 13-84 and 03-137, RF Exposure Regulation Re-Evaluation; First Report and Order, Further Notice of Proposed Rulemaking and Notice of Inquiry.

On March 27, 2013, FCC released a *First Report and Order, Further Notice of Proposed Rulemaking* and a *Notice of Inquiry* in the above proceeding. The docket asks for comments in the process of reassessing the FCC's RF exposure limits and policies, as well as to propose changes to the FCC's rules regarding human exposure to RF electromagnetic fields. The proposals would not affect the substantive RF exposure standards at this point but would significantly change the obligations of radio Amateurs procedurally. The comments in this proceeding are due September 3, 2013 and reply comments are due November 1, 2013.

FCC has been criticized recently for not updating its RF exposure standards and rules consistent with current scientific knowledge and applications related to health and safety of RF emissions from radio transmitters. The *First Report and Order* implements proposals from an older 2003 Notice of Proposed Rule Making and does not pose any issues for ARRL. In the *Further Notice of Proposed Rule Making*, however, the FCC proposes to further update and revise its procedures for evaluating RF exposure in certain environments and for all services. In the *Notice of Inquiry*, FCC asks for comments as to whether its RF exposure limits are adequate. They want to know whether the current limits for RF exposure should remain unchanged, relaxed or tightened.

The Commission asks for comments on occupational exposure limits for devices and at fixed transmitter sites. It states that that it "should be helpful to licensees to codify our earlier adopted policy with regard the use of occupational/controlled limits at Amateur Radio stations." This policy was first established in the *RF Report and Order of 1996*, but it was not incorporated in the rules at that time. It allows amateur stations to be evaluated "with respect to occupational/controlled exposure limits, as long as appropriate training and information has been

provided to the amateur licensee and members of his or her immediate household. Other nearby persons who are not members of the amateur licensee's household must be evaluated with respect to the general population/uncontrolled exposure limits." The FCC will codify this policy in its Part 1 RF radiation exposure rules.

Until now, FCC has categorically exempted Amateur stations from routine RF exposure evaluation. Now, however, it says that it intends to avoid specific exemptions for particular services and ensure a consistent set of rules without exceptions. So, it proposes to delete the categorical exemption from RF evaluation in the Amateur Radio Service in Section 97.13(c) of the Amateur Service rules. FCC says that Amateur Radio operators "are knowledgeable about the appropriate use of their equipment, such that separation distances are likely to be maintained to ensure compliance with our exposure limits…" but because the existing amateur exemptions "are based only on transmitter power and do not consider separation distance or antenna gain, exempt transmitting antennas that are unusually close to people could potentially lead to non-compliant exposure levels." The Notice says that a separation distance of at least 24 feet would meet its proposed exemption criteria, considering a currently exempt 50 W transmitter at VHF in accord with Section 97.13(c) and assuming an antenna gain of 6 dBd.

The existing classification of amateur station RF exposure as occupational will apparently be maintained, because it "is consistent with use of … proposed general exemption criteria based on general population exposure limits because awareness of exposure greater than the general population limits is required in all occupational settings, including amateur households. Application of the general exemptions proposed here to Amateur Radio installations would preclude the possibility of overexposure and require further evaluation only when necessary, giving guidance for both fixed and mobile transmitting antennas."
Comments should address the effects of this on the amateur community: "Parties that support maintaining the current exemption based on power alone are requested to explain how it provides adequate assurance that the public is protected against exposure to RF energy in excess of our limits and the extent of the burden imposed by this proposal. We encourage interested parties to comment on the relative costs and benefits of the proposed changes in this section, as well as those of alternative approaches."

The real problem with eliminating the categorical exemption for Amateur Stations is that this subjects radio amateurs to much greater vulnerability than exists now in antenna permitting situations. Inevitably these days, RF exposure and the "danger" in having an Amateur station in a residential neighborhood is an issue in all antenna permitting situations. The ability to note that Amateur stations, due to their inherent RF safety, are categorically exempted from routine RF evaluation has benefited Amateur applicants for zoning permits and HOA antenna approvals for years. The RF Safety Committee will be providing some guidance for the drafting of comments in this proceeding but it is hoped that this issue will be considered in formulating our policy on this docket going forward.

II. Antenna and RFI Cases.

1. Myles Landstein, N2EHG, LaGrangeville, NY.

Since the last Board meeting, we have had several contacts with Myles Landstein and his attorney, Jon Adams. There finally is a signed retainer agreement between Landstein and Jon Adams, and a litigation plan which includes a commitment of finances by Landstein beyond the ARRL grant for this case.

In April, Dan Henderson and I had a conference call with Landstein and his attorney, Jon Adams. We expressed concern that this case was not progressing and that the prior commitment that ARRL had made to donate $10,000 from the Antenna Defense Fund was premised on a formal effort to address the two compelling issues that were raised in this case: (1) the unlimited fees that the Town of LaGrange can charge for consultant's fees in considering antenna permit applications, and (2) a challenge to the initial finding of the land use authorities of the town that Amateur Radio is not a normal and customary accessory use to residential real property. We had not seen any activity in the case and some preliminary letters from Adams to the town had apparently gone unanswered. We intended to tell them that the grant funds could not be conveyed unless there was going to be a formal administrative and/or judicial action initiated that would provide some precedential value, or at least some guidance for other amateurs, on these two issues.

The conversation was enlightening, however. Our conclusions from this conference call were as follows:

1) They appear to be far more organized on task than the information that they previously conveyed to us would indicate.
2) They intend to utilizing a VCE to help educate the Planning and Zoning Boards (which are separate in this town) on the specific need for the antenna height desired.
3) The town has not conceded the inapplicability of the *Presnell v. Leslie* New York case which held, based on an absence of trial evidence, that Amateur Radio is not a normal and customary accessory use to residential real property, and they intend to challenge that conclusion in this case.
4) It does appear that an administrative resolution may be possible, in part because the Town appears to want to avoid court and legal fees.
5) They are not certain whether the Zoning Board or the Planning Board has assumed or will assume the role of lead agency in this matter - but one of the two will become the lead.
6) Imlay will provide Adams with some memoranda of law. Henderson will ascertain whether there exists a template engineering study (possibly K1VR?) to address the safety issues.
7) Adams will be providing a "status report summary" to share with the ARRL ARLDAC Committee.

Since that time, I provided in early May two memoranda of law to Jon Adams on the issues of "minimum practicable regulation" per PRB-1 and cost prohibitions as a violation of PRB-1 requirements. I have not had a case status update from Jon Adams. We have not yet delivered the grant funds to Jon Adams' Trust Account. They keep requesting the money. I received an e-mail on June 17, 2013 from Myles Landstein which stated that Jon Adams had received from Landstein's neighbors a visual impact study, and that "they seem willing to settle." This has nothing to do of course with the Town's procedures or the two points that we want to have adjudicated in whatever forum there is available. However, I did receive a copy of a visual

impact study, sent to Adams by some neighbor's attorney, offering to withdraw their complaint to the Town in exchange for some reduced height of the proposed antenna. The ARRL ARLDAC is monitoring this slow-moving case.

2. John Bush, KH6DLK/V63JB and Pacific Heights HOA.

This is a frustrating case involving a ham in Hilo, Hawaii who wishes to maintain even minimal antennas at his (part time) residence there. His CC&Rs prohibit all outdoor antennas (including OTARD antennas). Notwithstanding, he was given authority to install a wire antenna in the rear of his yard until a neighbor complained of RFI. He was told to remove the antenna and to not operate his station due to the RFI. He placed a mobile whip on his truck and ran the coax from his home station to the truck. This violated another of the CC&Rs. He is willing to move the radios to his truck eliminating the coax problem, but the HOA insists on no operating.

I have delivered memos of law and an abundance of case materials for John's attorney, Tom Yeh, of Hilo, who is very easy to work with. We informed Tom about the OTARD requirements and the fact that the HOA is in violation of those regulations, and delivered to him a briefing paper of available options for John Bush. We will continue to help John and Tom with this case to the greatest extent possible. They are both doing everything right so far.

III. Other Legal Matters.

I am unaware of other pending legal matters of concern to the Board at the moment, except that (1) I continue to work with the Symbol Rate Committee on its proposal to facilitate greater data speeds so that radio amateurs can conduct meaningful experiments using digital techniques; and (2) I urge the Executive Committee to consider and resolve an item coming before it (a second time) this Fall, which is the adoption of a weapons policy for our field organization activities. I believe that the absence of such constitutes a *serious* liability issue for ARRL, and I hope that the matter can be viewed in that context, rather than as a political issue, which for ARRL it most assuredly is not.

I will be pleased to address any questions you may have about this report before or during the Board meeting.

Respectfully submitted,

Christopher D. Imlay

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Christopher D. Imlay
General Counsel