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REPORT OF THE GENERAL COUNSEL TO THE BOARD OF DIRECTORS

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Farmington, Connecticut

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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 2017 in Windsor. 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 and Regulatory Matters

A. Overview of Legal and Regulatory Matters.

I want to discuss in this initial overview portion of this briefing memo some urgent issues related to the governance reform proposals and the Articles and Bylaws revisions recommended to you; our legislative effort on the Parity Act and our efforts to modify the 2016 FAA Reauthorization Act relative to painting and lighting of short towers in rural and agricultural areas; and, briefly, the status of the Ames litigation.

1. Board Governance and Article and Bylaw Revision.

Recently, there have been views expressed all over the map on the subject of Vice Directors and their proper role in the organization going forward. I would like to try to offer some clarity on this issue because there are some misconceptions that have been aired and advice provided that is just plainly wrong. I would suggest to you that the Board has a tremendous amount of flexibility in deciding whether or not to retain the current roles and most of the current procedures with respect to Vice Directors in our governance structure, and most of the decisions about our governance structure with respect to Vice Directors is purely policy-driven and not by legalities. **However, it is absolutely not possible, consistent with Board Members' fiduciary duty to the organization, to do nothing in the face of the recommendations of the Day, Pitney Law Firm. If the Board does nothing else at the upcoming meeting, it is obligated to adopt revised articles and bylaws in order to (1) preclude Vice Directors from voting in place of Directors during temporary absences of Directors from meetings; (2) eliminate the provision in our current Articles and Bylaws that entitles Vice Directors to succeed to the Director position during an in-term vacancy in that position; and (3) adopt indemnification provisions for Board members.** The Board is not free to ignore the advice of qualified counsel on these matters relative to statutory requirements of the State of Connecticut. To do so creates issues of personal liability on the part of individual Directors and it draws into question Board decisions and the actions of individual Directors. Furthermore, should the Board fail to take these actions, having been strongly, twice, advised to do so by attorneys that ARRL retained for the express purpose of providing advice on these subjects, you will also place ARRL staff in the untenable position of having to question what their actions should be in view of the Board's refusal to act consistently with the dictates of the statutory requirements of the State of Connecticut. CEO Gallagher and I would in such case require, in order to continue our work with the organization, specific indemnification against any liability

resulting from the Board's failure to comply with corporate statutes of the State. Here is why I say this so stridently:

> The March 17, 2017 Day, Pitney Memo states, in relevant part, as follows:
>
> "ARRL has allowed 'Vice Directors,' officials who are not members of ARRL's Board of Directors, for many years."
>
> "ARRL is a Connecticut nonstock corporation, and the Connecticut Nonstock Corporation Act, Connecticut General Statutes ("C.G.S.") Sections 33-1000 et seq. (the "Act"), governs its internal affairs, including the election, rights and duties of members of the Board of Directors."
>
> "The Act is to be construed in a manner to provide maximum flexibility for Connecticut nonstock corporations in the conduct of their lawful activities. C.G.S. Section 33- 1001. Despite this grant of flexibility, we are concerned that the use of vice directors as provided in the Articles and By-Laws is not authorized by the Act and may be prohibited thereunder."
>
> "Nothing in the Act expressly authorizes alternate directors, such as the vice directors, to serve in place of the directors. We reviewed case law from Connecticut and other jurisdictions, and we found no cases that address the authority of anyone but the elected director to act on the board. It is a general principle of corporate law, however, that directors cannot give proxies or otherwise delegate their duties to anyone. Directors have a fiduciary duty to act in the best interests of the corporation and its members, and fiduciary duties cannot be delegated."
>
> "We believe a negative inference can be drawn from the absence of language in the Act authorizing or permitting alternate members of the Board of Directors while it expressly authorizes alternate members of board committees… If the drafters of the Act (and the Model Act on which it is based) intended to allow alternate directors, they could have easily provided for them, just as they did for alternate committee members. Their failure to do so, coupled with the non-delegable fiduciary duties of elected directors, strongly suggests that it is not permissible to have alternates to directors serving on the Board of Directors in the manner provided for ARRL vice directors."
>
> "The absence of statutory standards for alternate directors weakens the argument that the ARRL structure providing for elections of vice directors with fiduciary duties fully protects ARRL."
>
> "We have researched relevant case law as well as the commentary to the Model Act. We were unable to find any court decisions that addressed the viability of alternate directors like the ARRL vice directors. In light of the factors set forth above, we believe there are serious questions as to the authority of a vice director

> to validly act in the absence of the elected director. If, in the context of an actual ARRL board meeting, the presence of a vice director was required to achieve a quorum, serious questions could arise as to the validity of actions taken at the meeting. If the vote of a vice director was required to adopt a motion, serious questions could arise as to whether the motion had been duly adopted."

It would be most unreasonable, in light of this opinion, for the Board to decide that it is acceptable practice to continue to allow Vice Directors to vote or to take the place of a Director at any time due to the temporary absence of a Director from a Board meeting. To continue to allow such a procedure leaves every Board decision in which a Vice Director participated subject to question. Nor should a Vice Director, in view of this opinion, be subject to a challenge to his or her authority to vote by any other member of the Board, now or in the future. Just because we have acted contrary to Connecticut statutes in the past without incident does not justify continuing to do so, nor does it reduce the risk of challenges to ARRL actions in the future. Summarizing and restating its position on this subject in the second Day, Pitney opinion dated May 26, 2017, Day, Pitney said:

> We continue to find the grant of authority to Vice Directors to vote in the absence of the elected Director to be contrary to the Act and to corporate law principles. The Board of Directors is granted the general duty and responsibility of the board of directors to manage the activities, property and affairs of the corporation. C.G.S. Section 33-1080. In our opinion, these duties and responsibilities are non-delegable and personal to the elected Directors.

With respect to the automatic succession provision of Article 7 of the Articles of Association, Day, Pitney stated in their March 2017 memo, in relevant part, as follows:

> "Vice directors are designated as the successors to their respective directors under Article 7 of the Articles, as noted above. The Act addresses vacancies on boards of directors. Generally, if a vacancy occurs, it can be filled by vote of the remaining directors (whether or not a quorum) or by the members. C.G.S. Section 33-1091. This section expressly addresses future vacancies…"
>
> "The language in Section 33-1091(c) is narrow, however. It only addresses resignations occurring at "a specific later date," not at any later date. It also addresses only vacancies "by reason of a resignation effective at a later date... or otherwise."
>
> If the statute were intended to permit the designation of a successor director in every circumstance, the references to specific dates and to resignations under Section 33-1087 of the Act would be superfluous. While it is possible to read the words "or otherwise" as providing for successor directors to be appointed upon the occurrence of any vacancy, regardless of the reason, we believe the intent of

> the statute is to allow successor directors to be named only in narrow circumstances when a specific date for termination of service is known."
>
> "A court may be willing to uphold the designation of a successor director, if that were challenged, but we doubt that the provision would be upheld."

The Day, Pitney May 26, 2017 letter stated that, while automatic succession is not a black-and-white issue, "filling a vacancy on the Board prior to the date of vacancy is permitted only with respect to vacancies occurring 'at a specific later date', such as a future resignation by a board member who intends to move to a different territory or to retire mid-term. See, C.G.S. 1091(c). In light of this specific language, we doubted that Vice Directors could be granted automatic succession rights when the date of a future vacancy is not 'a specific later date.'" Also: "Accordingly, we believe the specific rule on vacancies arising at a later date, as set forth in Section 1091(c) would likely preclude filling future vacancies occurring at an undetermined date with Vice Directors."

Given the foregoing, it would be reckless for the Board to ignore the recommendations of Day, Pitney with respect to the need to amend our articles and bylaws to eliminate any provision for Vice Directors to vote or to act in the stead of Directors; and to eliminate any provision for automatic succession of Vice Directors to the position of Director. A Vice Director who is automatically appointed to fill an in-term Director vacancy pursuant to this provision, after the receipt of these Day, Pitney opinions, subjects *every single action of that Director to challenges going forward by any member or Board member as to the legitimacy of the new Director's tenure, and it subjects Board decisions to challenge as well*. No Vice Director should want that to occur, either, especially when it is so easy and non-disruptive to fix: there is nothing precluding the Board, in filling a Director in-term vacancy, from adopting a preference for the Vice Director from that Division. As long as it is not an automatic entitlement, the preference is perfectly acceptable.

There has been circulated a vice-director proposal to make Vice Directors members of the Board, with different privileges from Directors. This is, according to Day, Pitney, not permitted either. Day, Pitney stated: "The Act does not authorize classes of directors with different voting or governance powers. This is in contrast to provisions of the Act which expressly contemplate multiple classes of members with distinct voting rights" (citations omitted).

Beyond the two issues that the Board is absolutely obligated to fix, and as well to come into compliance with the statutory requirement that Articles and Bylaws provide for indemnification for good-faith actions of Board members taken in the course of their board service, we have a great deal of flexibility in structuring our governance. The issue whether Vice Directors should continue to be a part of Board governance; and if so, whether they should be elected by the members or appointed by the Division Director; whether they should attend Board meetings, etc. is not a matter of legal necessity, but purely a matter of policy determination.

One final thought on this subject: Board members are the legal, governing body of a nonprofit corporation. They collectively represent the organization and its interests. Each nonprofit corporation is incorporated in a particular state, according to that state's corporate law. Board members are responsible to make sure the corporation follows state law. You have been advised by competent attorneys retained by our Corporation specifically for the purpose of analyzing our compliance with State law, that it is in their opinion important to modify our Articles and Bylaws in two respects and to add a provision, so as to comfortably comply. Whatever else the Board should decide with respect to governance reform, or with respect to the Articles and Bylaws rewrite, it should take the actions recommended. And it should not allow individual Board members, and certainly not vice directors (who are not members of the Board; who are not offering to indemnify Board members or ARRL or its staff from liability; who are not qualified to draw into question the Day, Pitney opinion; and who should not be offering gratuitous legal advice to the Board on any subject in any case) to argue that we should disregard the opinion of the law firm that has been retained to provide that specific advice. Part of the Directors' fiduciary obligation is the "duty of obedience." The duty of obedience requires directors and officers to ensure, among other things, that the organization complies with applicable laws. Therefore, a Director must understand the not only the articles and bylaws but state law as well. We have now discovered two provisions in our governing documents that are very probably in contravention of the law of the State of Connecticut. It is incumbent on the Board to fix those provisions without delay.

2. The Amateur Radio Parity Act of 2017 (H.R. 555 and S. 1534); the FAA Reauthorization Act of 2016, H.R. 636; and and Painting and Lighting requirement for Short Towers.

I need not reiterate the current status of the Parity Act effort, but it is worthwhile discussing some strategy going forward. The House Bill was passed early in January with no opposition whatsoever. The Senate Bill was introduced on July 12. It will be referred to the Senate Commerce Committee and Senator Thune, the Chairman, will soon schedule it for markup. It will be favorably reported out, though as it appears now, Senator Nelson will likely continue to oppose it. It won't be subject to a floor vote because it would have to be "hotlined" meaning circulated to all Senators to see if any have an objection. Nelson would object. So, on the advice of the Keelen Group, we are planning to attach the Senate Bill to something else like an FCC Reauthorization Bill that would, we would hope, become a "must pass" Bill. We are also attempting through our very effective grassroots letter writing mechanism to persuade Nelson to change his mind, after once again receiving, hopefully, thousands of letters from hams. A third strategy would be to persuade FCC Chairman Ajit Pai, via contacts from Sen. Thune and Rep. Walden, to go ahead with implementing the terms of the House and Senate bills directly. We haven't much hope of moving Nelson off his position if our Bill remains a stand-alone, but we will be going forward with letters to all Senators urging their support, and especially to Nelson with a specific letter from Florida hams hitting him hard on his non-support of Amateur Radio. In the meantime, it would be helpful if Board members would please refrain from any negative publicity about the Bill, such as statements to the

effect that the Bill is “stalled”. It isn’t and we don’t want to discourage our grassroots members who might otherwise be encouraged to support it. It is good, important legislation and will benefit many thousands of hams, now and in the future, if we can get it passed or the equivalent enacted by FCC directly.

At the July, 2016 Board meeting I reported the then-recent passage of H.R. 636, the FAA Reauthorization Act. We were blindsided at the time by the provision in this Bill instructing FAA to enact rules similar to statutory provisions that we have been dealing with at the State level which we collectively refer to as “crop duster” statutes. States, principally western States, have in the past few years enacted statutes attempting to protect meteorological evaluation towers. These are between 50 and 200 feet. They are typically located in rural agricultural areas and they tend to be very low-profile towers, hard for crop dusting aircraft to see in certain circumstances.

The Act’s provisions regarding tower marking include the following:

1. Within 1 year after the date of enactment of the Act (i.e. by July of 2017), FAA must issue regulations to require the marking of the towers covered by the legislation.

2. The marking required will be painting and lighting in accordance with current FAA guidelines (i.e. the Advisory Circular issued December 4, 2015).

3. The new rules cover towers constructed on or after the effective date of the rules, and towers constructed before the effective date of the new rules will have to come into compliance within a year after the date of the new rules.

4. Covered towers are those which are “self-standing or supported by guy wires and ground anchors”; which are 10 feet or less in diameter at the above-ground base, excluding concrete footings; are between 50 feet above ground level at the highest point and not more than 200 feet above ground level; which has accessory facilities on which an antenna, sensor, camera, meteorological instrument, or other equipment is mounted; and is located outside the boundaries of an incorporated city or town; or on land that is undeveloped; or used for agricultural purposes.

5. Towers that are excluded are those: (a) “adjacent” to a house, barn, electric utility station, or other building; (b) within the curtilage of a farmstead; (c) which support electric utility transmission or distribution lines; (d) wind-powered electrical generators with a rotor blade radius that exceeds 6 feet; or (e) street lights erected or maintained by a Federal, State, local, or tribal entity.

6. The term “undeveloped” land means a defined geographic area where the FAA determines low-flying aircraft are operated on a routine basis, such as low-lying forested areas with predominant tree cover under 200 feet and pasture and range land.

7. FAA will develop a database that contains the location and height of each covered tower which can be used only for aviation safety purposes. It may not be disclosed for purposes other than aviation safety.

It is a concern that exemption language such as the meaning of the word "adjacent" to residences and buildings is undefined. The 2016 Act says that the FAA will provide a definition. We do not anticipate that a large number of Amateur towers will be subject to these rules but there is a good deal of concern about it. We also have an NTSB document isolating the problem calling for a solution as being limited to meteorological evaluation towers.

FAA stood down on any proposed rulemaking to date. We have met with FAA and explained our concerns. We have also, twice, met with Senator Inhof from Oklahoma who opposes the overreach of this 2016 Act, and with Senator Thune's office. Senator Thune was the principal proponent of the legislation initially. Meanwhile, the FCC squarely criticized this legislation as imposing excessive costs with no concomitant benefit in safety. Communications Daily, in March, carried the following article:

> **Tower Rules Approved by Congress Could Mean Big Costs for Industry, O'Rielly Says**
>
> FCC Commissioner Mike O'Rielly urged a few tweaks to a law that he said otherwise could lead to big costs for tower companies. Section 2110 of the 2016 FAA Extension, Safety and Security Act requires improved physical markings and/or lighting on small- to medium-sized towers -- those between 50 and 200 feet tall, ORielly said. "If implemented literally, the provision will force expensive retrofits to potentially 50,000 existing towers, such as wireless communications and certain broadcast towers, all new towers that meet the broad definition, and raise tower prices for the next generation of wireless services -- all with little gain to air safety," O'Rielly said in a blog post. "A few helpful tweaks to the text could be in order." The provision's original intent may have been narrow, but "the language on its face is fairly broad, and therein lies the problem," he said. "In essence, those structures that are not specifically carved out are captured. That means that existing and future mid-sized communications towers throughout rural America are included." O'Rielly said he's most worried about smaller providers, including wireless ISPs. "Added cost of this new mandate could impact their ability to grow or even survive," he said. "There are new responsibilities to map the applicable areas to which section 2110 applies, requirements to participate in and potentially fund a database of existing towers in these areas, and overall compliance costs that add to the burdens for small providers." O'Rielly stressed he avoids critiquing or criticizing legislation but wanted to offer suggestions to highlight potential unintended consequences. "CTIA and our members share Commissioner O'Rielly's deep concerns about the overly broad regulatory impact of the legislation," said Brad Gillen, CTIA executive vice president. "We encourage Congress to remedy this problem to avoid imposing onerous and unnecessary burdens on the companies that build and

maintain our nation's wireless network infrastructure." Jonathan Adelstein, president of the Wireless Infrastructure Association, said O'Rielly is right. "We deeply appreciate Commissioner O'Rielly's attention to the importance of addressing this inadvertent provision that could end up costing the industry hundreds of millions of dollars with no discernable benefit -- all dollars that are better spent on needed broadband infrastructure like 5G deployment," he said. "There is growing recognition on Capitol Hill about the need to clarify this overbroad language."

In late June of this year, the House Transportation Committee marked up and reported out an FAA Reauthorization Bill, H.R. 2997. It modifies the 2016 FAA Reauthorization Act very much in our favor. A similar provision exists in a Senate version of the Bill, S. While neither broadcast towers nor land mobile towers nor Amateur towers are exempt from either Bill (and therefore all amateur towers that are in rural or agricultural areas not near a residence or building, and which are between 50 and 200 feet in height are deemed "covered" towers), every covered tower owner EXCEPT meteorological aids tower owners get to choose between (1) painting and lighting the tower, OR (2) *registering the location and height of the tower in an FAA-maintained database.* It is a huge undertaking for FAA to have to maintain this database, but it would be the tower owner's obligation to register the tower. Owners of meteorological aids towers have to both register and paint and light, and exempt tower owners (i.e. railroads) have to register also but not paint or light.

The National Association of Broadcasters is satisfied with this. They consider this a win for broadcasters and suggest that we should be satisfied with it also, since rural towers not near residences or buildings are the only ones that are covered towers and because registering the location and height of the tower is not a high bar to overcome.

S. 1405 was amended slightly in a post-July 4th version that I received from friends at the National Association of Broadcasters is even better than the House Bill. It provides that ham towers can be registered in the FAA database to be created within one year of the enactment of the legislation. However, it provides, even better, a provision that reads as follows:

> ''(f) EXCLUSION AND WAIVER AUTHORITIES.—As part of a rulemaking conducted pursuant to this section, the Administrator—
> (1) may exclude a class, category, or type of tower determined by the Administrator, after public notice and comment, to not pose a hazard to aviation safety; ..."

So, if the Senate version of this Bill is enacted, we could then participate in the FAA rulemaking that implements it and request that amateur radio antennas be categorically excluded. We have what we believe are good arguments for such exclusion. At Frank McCarthy's suggestion we are preparing some report language for the House Bill which would offer us as much flexibility as possible if the House Bill prevails over the Senate version ultimately. In the meantime, we are asking friends in the Senate to support the Senate version of the Bill. We were told on July 13 that the Senate

Bill is "clean" but the House version has a "poison pill" provision concerning privatizing air traffic controllers that supposedly will doom the House version. We will see. In any case, we have at least a shot at being exempted from FAA rules on this subject entirely.

3. Ames v. ARRL, Roderick, Gallagher and Boehner.

Given the failure of the mediation effort earlier this spring, the United States Court of Appeals for the Third Circuit issued in early May a briefing schedule for the appeal by Ames of the dismissal of his case against ARRL, Rick Roderick, Tom Gallagher and Jim Boehner. The scheduling order called for the Appellant's brief to be filed by June 19, 2017 and for the Appellee's brief to be filed thirty days thereafter. 14 days after that, Ames' reply brief is due. Ames' Brief was timely filed on the 19th of June. Therefore, the brief for ARRL and the individual defendants is due on July 19. It is being worked on now by the Cozen, O'Connor law firm. The briefing schedule will be completed therefore essentially by the first few days of August and the case will then be calendared for oral argument (or not) likely before or around the end of this year. I will provide the briefs for any Board member who wishes to review them.

B. Spectrum Allocation Issues.

1. ET Docket No. 15-99; 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 2012), Other Allocation Issues, and Related Issues.

On March 29, 2017 the Commission released a Report and Order in this long-awaited proceeding, allocating the 472-479 kHz (630 meter) band to the Amateur Service on a secondary basis and amending Part 97 to provide service rules for Amateur use of this band and of the (previously allocated) 135.7-137.8 kHz (2200-meter) band. The Report and Order also amended Part 80, the marine radio service rules, to authorize radio buoy operations in the 1900-2000 kHz band under a ship station license. While these rules were overdue and welcome when received, Amateur access to the new MF and LF bands is still stalled due to the absence of a public notice from FCC announcing procedures for notifying the Utilities Telecom Council of the intent to commence Amateur operation in these bands.

In order to allocate the two new bands to the Amateur Service, the Commission deleted the non-Federal fixed service and maritime mobile service allocations from the 135.7-137.8 kHz band. FCC preserved the Federal fixed and maritime mobile allocations because there is still some limited Federal use of the 2200-meter band. We have to protect those few Federal stations but the use is so limited that is not likely to be an issue. FCC also deleted the Federal maritime mobile and aeronautical radionavigation service allocations, and the non-Federal maritime mobile allocation from the 630-meter band. There are three public coast stations still licensed in this band which FCC decided to grandfather. These are stations KFS and WNU and New England Historical Radio Society, Inc.'s WNE.

The service rules for the amateur radio service in the 2200 and 630 meter bands are intended to protect PLC systems that operate under Part 15 in these bands. Electric utilities will not be required to modify existing PLC systems to accommodate amateur operations, and previously notified amateur stations will not be required to alter their operations to accommodate new or modified PLC operations. Amateur stations can operate in the two new bands when separated by a minimum horizontal separation distance of one kilometer between the transmission line and the amateur station when operating in these bands. This is essentially an adoption of ARRL's lab analysis that showed that PLC systems will be sufficiently protected from amateur stations transmitting at an EIRP of 1 W with a separation distance of 1 km from the transmission lines carrying the PLC signals, beyond which there is no interference potential. We urged 5 watts EIRP for the 630-meter band and FCC agreed, except for stations located in the portion of Alaska that is within 800 kilometers of the Russian Federation, where the EIRP is limited to one watt. Transmitter power for amateur radio operations in the 630-meter band is limited to 500 watts PEP as long as 5 watts EIRP is not exceeded.

Antenna height in these bands is limited to a maximum of 60 meters above ground level (AGL), an ARRL proposal intended to help meet the EIRP limits.

FCC prohibited all mobile operation in these bands (which would be practically impossible anyway) but permitted fixed and temporary fixed locations or fixed-portable operations as long as the location of the amateur station is not within one kilometer of PLC systems.

Emission types permitted throughout the new amateur bands are CW, RTTY, data, phone, and image without limitation. Any band planning will have to be done by ARRL.

The only onerous requirement in this Order was that all Amateurs must notify UTC of the location of their proposed station prior to commencing operations in either of these two bands, to confirm that the station is not located within the one kilometer separation distance. FCC was not convinced that transmission lines are easily identifiable and Amateurs can't know whether PLC systems operate on a particular transmission line in the relevant bands. So FCC imposed a regulatory overkill notification process to ensure that amateur stations seeking to operate in these bands are located outside the separation distance. What is required is notifying UTC of the operator's call sign and coordinates of the proposed station's location so that UTC can confirm that the location is outside the one kilometer separation distance, or the relevant PLC system is not transmitting in the requested bands. UTC claims to maintain a database of PLC systems (which we suspect doesn't exist, or if it does, it is incomplete) and the rules require that it must respond to the notification within 30 days if it objects to a given installation. If UTC raises no objection, amateur radio operators may commence operations on the band identified in their notification. The Wireless Bureau is supposed to issue a public notice providing the details for filing notifications with UTC and we have repeatedly urged the Mobility Division at FCC to get on with that public notice but

so far nothing has been issued. I inquired of Scot Stone at FCC today and received the following update: "We have not received OMB approval (to allow FCC to require the provision of the information from hams to UTC) yet. Meanwhile, I've been working with UTC to implement the rule once it is received. I expect everything to be done in September/October. Once everything is settled, we will release a PN setting forth the notification process." We will continue to advocate for the release of that public notice and then we will notify all hams to immediately provide notice to UTC so as to trigger the 30-day negative option plan.

FCC also, in this Report and Order, allocated the 1900-2000 kHz band to the maritime mobile service on a primary basis for non-Federal use in ITU Regions 2 and 3, and limited the use of this allocation to radio buoys on the open sea and the Great Lakes. ARRL argued that the limits on buoys has not proven enforceable and interference to Amateur operation has resulted, but that didn't seem to concern FCC. There is basically only one manufacturer of these buoys and they are not likely to cause a substantial amount of interference in the aggregate but even a small amount of interference from a single buoy is of concern. We are effectively co-primary with these buoys in the 1900-2000 KHz band.

2. RM-11785; Petition for Rule Making to Implement 5 MHz Allocation from WRC-15.

The Executive Committee in March of 2016 ordered that a Petition for Rule Making be filed to implement the 5 MHz allocation that was obtained at WRC-15. The Petition was filed January 12, 2017. I notified the Board in January that this petition is highly problematic for a number of reasons. First, there is no FCC proceeding to implement the final acts of WRC-15. The filing of a petition was solely for the purpose of giving us a place in the queue for implementation. Second, the power limitation decided on at WRC-15 for ITU Region 2 for this 15 kHz allocation is *exceptionally* low, and our argument is for a 100-watt power limit for the United States. The 100 watt limit is critical for us because the purpose of the 60-meter channels in the first place was to be able to facilitate a propagation gap between 80 and 40 meters for the purpose of disaster relief communications between the continental U.S. and the Caribbean basin. The band will be in use during the hurricane seasons when static crashes and high noise levels prevail on those paths. The power level is critical to a successful domestic implementation of the allocation. It is a great argument, but the failed international effort in this one respect makes a domestic exception to the power level of the magnitude of what we are asking for very difficult to achieve. This is especially true because the United States was <u>not</u> a supporter of an allocation for the Amateur Service at 60 meters anyway. Third, we also asked to keep four of the five individual channels we have at 60 meters, at the 100-watt power level that we have now for those channels. The fifth of those channels is within the contiguous band at 5351.5-5366.5 kilohertz, so our proposal is to retain four of the five channels and to have the band allocated to Amateurs domestically, at 100 watts, with all of the emissions now permitted for the five channels and for access by General Class and above licensees.

On February 16, 2017 FCC released a Public Notice calling for comments on ARRL's Petition for Rulemaking. ARRL comments supporting our own Petition were filed in this proceeding on March 20, 2017. There are now114 comments filed in response to our petition, mostly short notes very similar in content, supporting ARRL's Petition generally, but many asking for higher power than the 100 watts we are asking for. Some also ask to allow the use of gain antennas (which is now permitted on the 5 channels provided the ERP limit is adhered to, though the commenters don't seem to understand that). So far, no opposition filing has been logged in and no non-Amateur comments have been received.

3. ET Docket No. 15-170; Equipment Authorization Rule Change Proposals.

A First Report and Order will be under consideration at the FCC July 13, 2017 Open Meeting and a draft of it has been released by FCC under a new program whereby FCC orders to be considered at an open meeting are released to the public in advance. In this draft First Report and Order, FCC substantially liberalizes its rules governing equipment authorization (in two cases completely contrary to ARRL's recommendation) but leaves other issues open in this docket proceeding. The First Report and Order takes the following steps:

- Streamline the Self-Approval Process. The Commission currently requires manufacturers to self-approve certain devices under one of two processes. The Order would combine those processes into one, called the Supplier's Declaration of Conformity. This will both simplify and reduce burdens associated with the equipment authorization process.
- Allow Electronic Labeling. The Commission would provide for the use of electronic labeling for the information required under our rules to be displayed on products or otherwise provided with products, such as the FCC identification number and compliance statement. Doing so codifies many of the Commission's existing practices and satisfies specific legislative requirements. The use of electronic labelling rather than permanent physical labels reduces costs for manufacturers.
- Ease Burdensome Importation Requirements. The Order would eliminate the requirement to file the import declaration for RF devices brought into the United States with CBP. This requirement has become increasingly outdated and burdensome in light of current importation and marketing practices, the information otherwise collected by CBP itself, and the wealth of information available online. The Order would also modify Commission rules to clarify the compliance requirements related to imported devices and to provide additional flexibility in certain cases.
- Update Measurement Procedures and Clarify Standards. The Order would revise Commission measurement procedures to streamline and consolidate requirements for devices used in different services. This will increase our agility to respond to changes in technology and in industry standards, and enhance the general understanding of Commission measurement requirements.

Perhaps most notably among these actions, FCC is eliminating the filing of customs importation declaration forms and it is allowing electronic FCC ID labeling of products that have screens for displaying them. This is odd, coming as it does at a time when illegal RF devices are flooding in from China in violation of Customs regulations and FCC regulations.

FCC released a Notice of Proposed Rulemaking July 21, 2015 proposing to update the rules that govern the evaluation and approval of radiofrequency (RF) devices. ARRL comments were filed October 9, 2015. No reply comments were necessary and none were filed. In our comments, ARRL asked FCC to clarify that Amateur Radio licensees may modify non-amateur equipment for use on Amateur Radio frequencies. Some hams expressed concerns that the proposed rules would inhibit post-sale modification of Wi-Fi equipment, which is often altered for use on Amateur Radio frequencies. We said that proposed rules requiring manufacturers to include security features to prevent network devices from being modified were problematic, to the extent that they would preclude hams from adapting network equipment for ham radio applications and that licensees should be permitted to modify any previously authorized equipment for use under Amateur Service rules.

In fact, the proposed rules differ only slightly from the current rules. Our comments also urged FCC to not apply any limitations for Software Defined Radios to SDRs intended for use exclusively in the Amateur Radio Service, as has been the policy for the past 10 years. We also made miscellaneous arguments regarding proposed changes to the FCC's equipment authorization rules, and expressed concern about abuse by unscrupulous importers and manufacturers of unintentional emitters. The only opportunity to preclude widespread sale and deployment of non-compliant RF devices, including unintentional emitters, is via the equipment authorization process. Some RF devices, such as RF "grow lights," now subject to the more informal Verification process should be subject to Certification, owing to their substantial interference potential. Finally, we argued for additional labeling requirements for certain Part 15 and Part 18 devices. We discussed our FCC complaint about the marketing practices of various "big box" retailers, where non-consumer-rated lighting ballasts have been mixed in with consumer ballasts and other consumer products on display with no explanatory signage. Ballasts intended for industrial applications have higher permitted conducted emission limits in the Amateur Radio HF spectrum. We called on FCC to include a definition in Part 18 for the term "consumer RF lighting device," to provide a way to differentiate consumer devices from those intended for industrial or commercial environments. And we argued that FCC should consider reducing its Part 15 limits for lighting devices to correspond with the Part 18 lighting device limits between 3 and 30 MHz to reduce the RFI potential of LED bulbs now being widely marketed. LED lamps operate under Part 15 rules.

FCC's draft First Report and Order addresses very few of the concerns we stated in our comments. For example, at paragraph 44, the Commission stated as follows: "Finally, several commenters make suggestions that are beyond the scope of the actions we contemplated in this proceeding. ARRL suggests new labelling requirements for

certain Part 15 and Part 18 devices, particularly for RF lighting devices intended for use in residential areas…We continue to believe, as we tentatively concluded in the NPRM, that rules requiring the placement of warning statements or other information on device packaging or in user manuals or make information available at the point of sale are outside the scope of the E-LABEL Act. Any potential modification to such requirements is more appropriately considered in the context of specific service rule proposals where we would be able to fully consider the issues associated with fulfilling each requirement by electronically-based methods."

The EMC Committee will review this Report and Order and may have some recommendations for the Board at this upcoming meeting.

4. ET Docket 15-26, Vehicular Radars in the 76-81 GHz band.

FCC is scheduled to adopt a Report and Order dealing with the 77-81 GHz Amateur allocation at its Sunshine Act meeting on July 13. FCC released in late June a draft of that Report and Order, addressing the allocation status of the 76-81 GHz band. I circulated this draft and a short memo concerning it to the Board on June 26. It is my view that Amateur Radio fared reasonably well in this allocation. On the upside, Amateurs retained an allocation in the entirety of 76-81 GHz; the FCC is removing the 19-year-old suspension of the use of 76-77 GHz by Amateurs, which was imposed initially in order to protect vehicular radars from Amateur radio interference. So we have regained a gigahertz of spectrum formerly lost, thus allowing us access to that band once again. Overall, the Order secures a very large, contiguous Amateur allocation in the United States for many years to come. Further, fixed radar operations were prohibited in the band, an important point for both Bosch and ARRL and reflected in the comments filed by both.

On the downside (though not much of one), the small primary allocation that Amateurs had at 77-77.5 GHz has been reduced to secondary status to match the remainder of the 76-81 GHz segment. Also, to have a consistent power level among the various services sharing this segment (which, propagation-wise, allows a very high degree of sharing and frequency re-use), FCC has imposed a power limit of 55 dBm EIRP (which translates in the proposed rules to 316 watts EIRP). The proposal that Robert Bosch, LLC made was that there was ample compatibility between vehicular radars and Amateur Radio and no restrictions were necessary, but several automotive manufacturers asked that Amateur Radio be ousted from the band. Delphi Automotive asked for a power limit and an individual amateur indicated that some Amateur operations in the band were currently at between 66-71 dBm. This proceeding was resolved reasonably favorably to Amateur Radio largely because of the coordinated support between Bosch and ARRL. Bosch asked that all Amateur Radio allocations be kept intact and in fact asked FCC to consider *adding* an Amateur allocation at 75.5-76 GHz to compensate for any potential reduction in utility to the Amateur Service of the band 77-81 GHz if automotive radars were allowed into that band.

Reportedly a few microwave experimenters are concerned about the EIRP limitation that did not exist before in the 77-81 GHz allocation. Indeed, that proposal did not appear anywhere in the original NPRM, nor was it proposed specifically by any commenter (although some automobile manufacturers did ask that Amateur Radio be ousted completely from the band in order to protect automotive radars). However, looking at this on balance, for a 7 dB power reduction from the norm, we get back a gigahertz of spectrum that we otherwise were not going to get back that we had lost for the past 19 years; long term security in a millimeter wave band five GHz wide; and we get, over time, as a bonus, a cleaner band at 24 GHz due to the migration of vehicular radars out of that band and into the 76-81 GHz band. We won as well on the argument that no fixed facilities should be permitted in the 76-81 GHz band except at airports. My view of this is that it is a win. Unless one's expectation going forward is that any limit at all on Amateur Radio in a shared radiolocation band five gigahertz wide that also includes radioastronomy facilities and Space Research is unacceptable (which would be a completely unreasonable expectation) declaring this a victory for Amateur Radio overall is not a stretch at all.

5. 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.

We continue to monitor this still-open FCC Docket, in the hopes of protecting Amateur Radio access to what has become known as the U-NII-4 band, (5850-5925 MHz). It is an old docket now but the debates about the extent to which short-range vehicle to vehicle and vehicle to roadside communications (intelligent transportation systems) can share with low-power, short range, high data rate broadband devices are ongoing and very active indeed, through December of 2016. In the last year, FCC has encouraged interference testing of low power U-NII-4 devices in the band for compatibility with intelligent transportation technology. *Indeed, we are hanging on to our secondary allocation in this band by fingernails*.

ARRL comments were filed May 28, 2013 in this proceeding. FCC's Notice of Proposed Rulemaking, released February 20, 2013 proposed to revise the Part 15 rules governing Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band. These devices use wideband digital modulation techniques to provide a wide array of high data rate mobile and fixed communications for individuals, businesses and institutions including Wi-Fi-enabled radio local networks, cordless telephones, and fixed outdoor broadband transceivers used by wireless internet providers. FCC proposed 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. FCC proposed 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.

There have been negotiations ongoing between mobile service providers and Intelligent Transportation Service entities about settling the dispute about 5850-5925 MHz. Our effort in this proceeding has been to retain the Amateur secondary allocation *in that segment*. On April 1, 2014, FCC released a First Report and Order in the Docket, which increased the utility of the 5 GHz band where U-NII devices operate, and modified certain U-NII rules and testing procedures to ensure that U-NII devices do not cause harmful interference to authorized users of the band. The FCC extended the upper edge of the 5.725-5.825 GHz (the so-called U-NII-3) band to 5.850 GHz and consolidated the provisions applicable to digitally modulated devices so that all digitally modulated devices operating in the U-NII-3 band will operate under the same set of rules and be subject to the new device security requirement. The consolidated rules require the more stringent out-of-band emissions limit formerly applicable only to U-NII-3 devices in order to protect Doppler Weather Radar and other radar facilities from inference. We are still waiting for a decision on 5850-5925 MHz.

What is at issue now is only the 5.850-5.925 GHz band, but of course there is an Amateur allocation in the entirety of 5650-5925 MHz. The 5850-5925 MHz segment is allocated on a primary basis to the Mobile and Fixed Satellite Services for non-Federal operations, and to the Radiolocation Service for Federal operations. The band is also allocated on a secondary basis to the Amateur Service.

On June 1, 2016, the Office of Engineering and Technology issued a Public Notice to refresh the record in this proceeding. A Public Notice was also issued October 7, 2016 that noted that the potential for U-NII devices to share the 5850-5925 MHz frequency band with DSRC systems operating under the Intelligent Transportation Service (ITS). The June 2016 Public Notice described a three-phase Test Plan, invited comment on the tests for Phase I of the plan, and solicited the submittal of prototype U-NII-4 devices for testing. Prototype devices were then submitted to the FCC Laboratory and testing has begun.

6. Pave Paws Radar and Amateur Interaction, 70 cm.

No reportable events have occurred with respect to our ongoing liaison with the Air Force Space Command (AFSPC) concerning interference between Pave Paws defensive radar installations and Amateur Radio UHF repeaters. The upgrade of the Cape Cod Pave Paws radar site is ongoing. This will bring the Cape Cod facility to the same operational standards as the Beale AFB site in northern California. During 2016 testing at Cape Cod, ARRL was contacted by AFSPC to see if amateurs could assist in identifying a new type of interference. The ARRL provided some information which helped the testing unit on base identify a local, non-amateur source of interference. CEO Gallagher has visited the Cape Cod AFB Pave Paws site to meet the new commander, and our relationship with the Air Force Spectrum Managers remains very good indeed.

7. ET Docket 14-99, Model City for Demonstrating and Evaluating Advanced Sharing Technologies.

No action in this docket has occurred since the last Board meeting. ARRL filed comments in this proceeding on August 29, 2014. In this docket, FCC and NTIA jointly proposed to establish, via a public/private partnership, a "model city" (i.e. an urban environment) that is considered a test bed for spectrum sharing and technology development and initial rollout and evaluation. The original idea came from the President's Council of Advisors on Science and Technology (PCAST) in 2012. The basic premise of our comments is that there can't be a model city for technological development and spectrum sharing without integrating Amateur Radio in it due to the pervasiveness of shared Amateur Radio allocations above 450 MHz and because of the ubiquity of Amateur Radio operation. There is also an argument at the end about the inherent inequity and failure of the concept of a Model City for technological rollout and testing if some of the services in the model city are saddled with public, private or environmental antenna regulations which preclude the creation of a realistic environment. This proceeding may not result in any action at all; there has been no action save for a 2015 workshop to discuss the idea sponsored by FCC.

8. ET Docket 13-101; Receiver Performance Standards; Technological Advisory Council (TAC) White Paper.

There has been no action taken in this proceeding since ARRL comments were filed in July of 2013 on a TAC proposal to establish receiver performance (i.e. interference rejection) standards in order to permit greater sharing of spectrum. While the docket is still open, a search of the TAC page on the FCC web site does not show that the TAC is actively working on the issue of receiver performance standards. Given the age of this docket, it is not assumed that FCC will be taking any action on it. We will continue to monitor it however.

9. ET Docket 16-191; Technological Advisory Council (TAC) investigation of changes and trends to the radio spectrum noise floor; of increasing radio frequency (RF) noise problem; scope and quantitative evidence of the problem; and conduct of a noise study.

Information obtained by Ed Hare, W1RFI from ARRL’s representative to the TAC, Greg Lapin, N9GL, is that this noise study is dead. Reportedly, Lapin and his co-chair of the noise study committee, Lynn Claudy from NAB, have been told by FCC that they are no longer being asked to do a noise study. Instead, FCC wants from the TAC some recommendations about regulations that can be eliminated. For awhile, the docket file had been deleted from the FCC’s ECFS but it is back now. FCC first asked the TAC to do a noise study in 1999, a year after the TAC was first formed. It may be the change of administrations that led to this, or a finding within FCC that they simply don’t want to know what the ambient RF environment is like over time.

ARRL comments were filed August 11, 2016 in response to the Public Notice in this proceeding and were received very favorably within the industry. Radio World magazine aimed at broadcast engineers made very favorable references to ARRL’s comments. These were largely strategized by Ed Hare.

ARRL comments were filed June 15, 2016 in response to an FCC Public Notice, DA 16-676 announcing that its TAC, an FCC advisory group on which ARRL has been very effectively represented for many years by Greg Lapin, N9GL, would investigate changes and trends to the radio spectrum noise floor to determine if there is an increasing noise problem. Greg is the leader of this group and this is a very large step forward in our effort to deal with ambient noise in the HF, MF, LF and VHF ranges especially. If the TAC found, as it expected to do, that there was an increasing problem, the TAC would investigate its scope and the quantitative evidence available. Initially, FCC on behalf of the TAC asked for comments about how a noise study should be performed. Comments were prepared and filed with the assistance of the ARRL EMC Committee and the Executive Committee. The comments were intended to help the TAC determine the scope of the study.

We noted in our comments that the Amateur Radio community is both uniquely affected by increases in ambient noise, and uniquely qualified to participate in this study. The geographic distribution of ARRL members in all RF environments makes ARRL an asset to the TAC in the conduct of this study.

There were 95 comments filed in the docket, including some electrical manufacturers and RF lighting manufacturers, though most all of the commenters urged the conduct of the study. NAB urged that FCC itself should be more responsible in regulation of Part 15 devices. *We should consider what should be done at this stage to try to revitalize the study, rather than simply allowing FCC to scuttle it.*

10. RM-11715; Mimosa Networks, Inc. Petition for Rule Making, proposing a Part 90 Fixed and Mobile allocation in the 10.000-10.500 GHz band.

There has been no action taken by FCC in this proceeding since ARRL comments on the Petition for Rule Making were filed at FCC April 11, 2014. The petition remains pending but somewhat dormant. There are 260 comments filed currently, the most recent of which was filed in March of 2015. Some, including a few from amateur licensees, urge reallocation of the band for broadband purposes.

ARRL opposes the effort of Mimosa Networks of Los Gatos, CA to reallocate the 10-10.5 GHz band for fixed broadband. Mimosa, a wireless broadband products manufacturer filed a Petition for Rule Making May 1, 2013 seeking a Part 90 mobile allocation in the 10.000-10.500 GHz band, and service rules permitting Part 90 licensing of mobile wireless service providers in that band. It was placed on Public Notice March 11, 2014. Our comments attempted to protect the Amateur secondary allocation at 10.0-10.5 GHz and the Amateur Satellite Service secondary allocation at 10.45-10.5 GHz. Both the Amateur Service and Amateur-Satellite Service allocations are secondary only to Federal Government radiolocation. By footnote, NON-government radiolocation has to share with Amateur Radio on a non-interference basis (i.e. they cannot interfere with us). That same U.S. footnote, however, apparently denies FCC the authority to make the allocation that Mimosa is asking for:

> US128 In the band 10-10.5 GHz, pulsed emissions are prohibited, except for weather radars on board meteorological satellites in the sub-band 10-10.025 GHz. The amateur service, the amateur-satellite service, and the non-Federal radiolocation service, which shall not cause harmful interference to the Federal radiolocation service, are the only non-Federal services permitted in this band. The non-Federal radiolocation service is limited to survey operations as specified in footnote US108.

Our argument is that the FCC is without the jurisdiction to make this allocation, at least without some buy-in from NTIA. So we have kept in touch with NTIA to make sure that they continue to protect military airborne radars at 10 GHz and retain the footnote US128 to the Table of Allocations that precludes any new allocations (other than the Earth Exploration Satellite Service that was added to this band at WRC-15 and which is compatible with Amateur Radio to an acceptable extent). So far, so good. We continue to believe that the Petition seems to be quite stalled at FCC.

11. National Broadband Plan Review. (Consideration of current spectrum threats relative to broadband implementation and continuation of review of former ARRL Broadband Plan Committee Report).

At the March, 2016 EC meeting, the EC called for an update to the National Broadband Plan Committee Report dated July of 2011. Though the ARRL NBP Committee was dismissed after submitting that Report, the Executive Committee, at its October, 2016 meeting, asked Vice President Bellows, Director Blocksome and this office (all members of the original NBP Committee) to conduct a review and update the 2011 NBP Report and provide that to the EC. That work is still ongoing.

While there are no acute, current threats of broadband reallocation of Amateur Spectrum, there remain issues surrounding the 3400-3500 MHz band and the 5850-5925 MHz band. Recent word (in June of this year) from our friend Fred Moorefield at DOD is that FCC is preparing a notice of inquiry suggesting the reallocation of a good deal of spectrum above 3700 MHz but below 7 GHz for broadband auctions, but that no Amateur spectrum at all is included.

So, the updating of the 2011 Report is timely, but not in our view an urgent priority relative to other regulatory initiatives. We can continue to say that the Amateur Service has done exceptionally well relative to some other radio services in avoiding disruption in allocations from new broadband spectrum access initiatives.

C. Non-Allocation FCC Regulatory Issues

1. RM-11759; ARRL Petition for Rule Making to effect changes in the 80 and 75-meter RTTY/data and phone/image subbands; to restore 80-meter frequency privileges for certain license classes; to shift the 80-meter automatically controlled digital station band segment; and to authorize Novice and Technician class licensees to utilize RTTY/data emissions in certain bands.

There are still 283 comments in this proceeding. Most of the comments filed are "cookie-cutter" *oppositions* to any reduction of the extra class telephony subband, and oppose ARRL's effort to encourage RTTY/data emissions in the band. The number of comments overall is not, in general, alarming. Most are filed by extra class licensees who reject any rebalancing of the 80-meter telephony subband. This Petition for Rulemaking was called for by Minute 32 of the July, 2015 Board Meeting. It was filed January 8, 2016 and placed on Public Notice February 22, 2016. Comments were due March 23, 2016, and reply comments were due April 7, 2016. We filed comments on our own petition in this proceeding on March 23, 2016, the due date.

The Petition includes the following points, per the Board's instruction:

(A) To modify the 80-meter RTTY/Data subband defined in Rule Sections 97.301 and 97.305 so that it extends from 3500 kHz to 3650 kHz;

(B) To modify the 75-meter Phone/Image subband defined in Rule Sections 97.301 and 97.305 so that it extends from 3650 kHz to 4000 kHz;

(C) To provide that the 3600-3650 kHz segment of the 80-meter band will be made available for General and Advanced Class licensees, as was the case prior to 2006;

(D) To provide that the band segment 3600-3650 kHz will also be available to Novice and Technician Class licensees for telegraphy (consistent with the existing rules that now permit Novice and Technician Class licensees to use telegraphy in the General and Advanced Class RTTY/data subbands at 80, 40, and 15 Meters);

(E) To modify Section 97.221(b) of the Commission's Rules governing automatically controlled digital stations, so that the segment of the 80-meter band that is available for automatically controlled digital operation shifts from 3585-3600 kHz (as per the existing rules) to 3600-3615 kHz (consistent with the IARU Region 1 and Region 2 band plans); and

(F) To provide RTTY/data privileges to Novice and Technician licensees in their 15-meter band segment and their 80-meter band segment, the latter contingent on the rule changes at (A) and (B) hereinabove.

2. RM-11767, Expert Linears America, LLC Petition for Rule Making to Eliminate the 15 dB gain rule for Amateur Linear Amplifiers; and WT Docket No. 16-243, Request for Waiver filed by Expert Linears America LLC: to eliminate (and temporarily, to waive) the 15 dB gain limitation on Amateur amplifiers currently in Section 97.317(a)(2) of the Commission's Rules.

There are still only 76 comments filed in response to the Petition for Rule Making, including ARRL's comments. We and almost all other comment filers support the elimination of the 15 dB gain rule. Several opposed the Petition for Rule Making, believing that Amateur linear amps still find their way into the hands of CB and freeband users. However, this rule is unnecessary to prevent that and those who make illegal use of amplifiers do so in violation of other, more relevant rules.

As background, we filed comments May 26, 2016 in strong support of the Petition for Rulemaking filed on April 7, 2016 by Expert Linears America, LLC. The Petition proposed that the Commission amend Section 97. 317(a)(2) of the Amateur Service rules in order to eliminate the requirement that, for a manufacturer of external RF power amplifiers to receive a grant of certification therefor, the amplifier must not be capable of amplifying the input RF power (driving signal) by more than 15 dB of gain.

This petition continues the effort that Bill Cross initiated in 2006 in Docket 04-140 which eliminated the 50-watt minimum drive power requirement for amplifiers and modified the ban on amplifiers that exhibited amplification between 24 and 35 MHz. the rule now requires zero amplification between 26 and 28 MHz. But in 2006 FCC left in the 15 dB limit on amplification. Now, that rule makes it impossible for, for example, SDR low power output transmitters to be amplified to full legal power without an intermediate amplification stage added. The 15 dB rule is a relic from the CB days that was never necessary. There is a Part 95 rule that prohibits using in the CB service an amplifier capable of more than 15 dB of gain. If the Part 97 rule is eliminated, there will still remain a certification rule for Amateur amplifiers that prohibits certification if the amplifier has more than 0 dB of gain between 26 and 28 MHz. That alone is sufficient to preclude CB or freeband use of Amateur amplifiers. All Amateur amplifiers must be certified.

We expect that this petition will be batched with other amateur Part 97 petitions into an omnibus rulemaking sometime in the future, perhaps later this year.

3. RM-11769, Petition for Rule Making filed on or about November 12, 2015 by James Edwin Whedbee to modify Part 97 of the Commission's Rules and Regulations to redesignate subbands from exclusively Morse code to narrowband modes, including CW and for other purposes.

FCC placed on public notice on May 11, 2016 a May 2, 2016 Petition for Rulemaking filed by Edwin Whedbee, a perennial filer of petitions and comments that are often very much off-the-wall. This one is no exception. RM-11769 ostensibly urges that the CW subbands in bands below 220 MHz, which he believes now permit only CW emissions (150HA1A) be modified to permit data communications as well. The problem is that Whedbee's premise, that the CW segments in the HF bands do not permit data, is simply wrong. The RTTY/data subbands are delineated in Section 97.305(c) and data can be transmitted in the RTTY/data subbands. The other problems with the Whedbee petition are that (1) he includes no appendix with the rule changes he wants to implement, and (2) he offers no justification for the rule changes he proposes except to note that CW

is not deserving of special subbands only for that emission (which is fine since there are none).

There are other proposals in the petition which generally urge that bandwidth limitations rather than emission types should be defined in the rules. For example, in the voice and image segments below 1.8 MHz, the 20 dB bandwidths should be limited to 1300 Hz; between 1.8 and 29.5 MHz, the 20 dB bandwidths should be limited to 8000 Hz; and between 29.5 and 220 MHz the limit should be 20 kHz, etc. No justification is offered for these numbers. He proposes to leave 60 meters alone.

There are as of this writing 415 comments, mostly against the petition, and most failing to grasp the fact that the petition is based on a misconception about what the current rules provide. So they defend CW and urge that the "exclusive CW subbands" be left alone. Comments on this Petition were due June 10, 2016. The Executive Committee decided to not file any comments on this Petition as it is fatally flawed. Among the 425 comments are also comments on RM-11708 and in Docket 16-239, which FCC seems to be considering together.

4. WT Docket No. 16-239; RM-11708; Deletion of restrictions on symbol rates for data communications and ARRL proposal to establish a 2.8 kilohertz maximum occupied bandwidth for data emissions below 29.7 MHz.

ARRL comments were filed October 11, 2016 in response to FCC's July 28, 2016 NPRM. Reply comments were due November 10, 2016. There are 216 comments filed in the docket, and none filed this year.

ARRL comments continued to support the deletion of the symbol rate limitation on data communications in the RTTY/data subbands but argued that such deletion was not sufficient; there must be a bandwidth limit, on the order of 2.8 kilohertz imposed on such emissions, else there is a serious potential of usurpation of the band. The comments in this proceeding thus far (numbering 216) have been largely opposed to the elimination of the symbol rate limit without also imposing a bandwidth limitation. Some opposed both actions, but the more thoughtful ones supported adding back in a bandwidth limit. There remains a great deal of opposition to a wide bandwidth limit, however and a great many commenters (all individuals) suggest that 2.8 kHz or any such bandwidth limit approximating an SSB signal bandwidth should be prohibited. They fear the squeezing out of CW, RTTY, PSK31 and other narrower bandwidth modes. We did not file reply comments addressing this, but we had argued the point numerous times in comments, reply comments and ex parte filings relative to our Petition for Rule Making, RM-11708, before the NPRM was issued.

An additional problem with this proceeding, in addition to its unpopularity among CW and RTTY aficionados, is that it also is, conceptually, a very difficult sell at FCC. For many years, and more aggressively in recent years, FCC is moving away from micro-regulation of Amateur allocations in service rules. They want Amateurs to self-regulate subband issues and resolve compatibility among conflicting emission modes ourselves.

The self-regulated subband model is in use in many other countries but United States amateurs want their emission type of choice carefully protected by FCC regulation. It is predicted that this is a failed regulatory model going forward.

The opposition to 2.8 kilohertz is difficult to change minds about when the real issue is a dislike of data emissions by users of more traditional emissions in these subbands. Change comes hard to HF-active hams.

Another consideration is the age of this proceeding. It was on November 14, 2013 that ARRL filed a Petition for Rule Making which proposed to modify the Commission's Amateur Radio Service rules so as to eliminate the symbol rate limit in those rules relative to data emissions in the Amateur allocations below 29.7 MHz; and to establish a 2.8 kilohertz maximum occupied bandwidth for data emissions in those bands. The Petition was placed on Public Notice right away, on November 21, 2013. It is taking absurdly long to adjudicate this proceeding, and the revolving door in the front office of the Wireless Bureau doesn't help.

5. RF Lighting Device Complaints to FCC (Initiative to generate FCC enforcement of overpower RF lighting ballast devices; filed and planned future complaints aimed at ballast importers and retailers and large consumer retailers of RF lighting devices intended for industrial applications only).

FCC has still taken no action that we know of in response to a complaint filed with FCC on March 12, 2014 regarding a Lumatek RF Lighting Ballast that failed the FCC's conducted emission limit by a large amount. In mid-June, 2015 we filed three additional complaints about a second Lumatek Ballast and two other devices. One was manufactured by Quantum Horticulture and the other by Galaxy Legacy. In every case, as tested by ARRL's Laboratory, these devices (which the ARRL Laboratory purchased at retail) fail the FCC Part 15 conducted emission limitations. There are several associated marketing rule violations with each device. We also filed on July 14, 2015 a complaint about marketing practices of Home Depot relative to their marketing of RF lighting products intended to be used only in industrial applications, but which are being marketed to consumers for residential use with the full advice and consent of Home Depot. Most recently, we prepared and filed similar complaints about Lowe's and WalMart, in a comprehensive effort to keep the pressure on FCC to take some action with respect to these devices.

However, in just the last few days, we have gotten an indication that the Commission is still actively reviewing the complaints that we filed. In a footnote to a draft report and order in Docket 15-170 (discussed above) relative to equipment authorization procedural changes, the Commission stated as follows:

> We are aware that ARRL has made complaints to staff regarding individual RF lighting installations that seem to cause interference to its members' radios, but does not substantiate its contention that these are improperly authorized devices. Staff has been reviewing these complaints

to determine whether the offending devices are in fact authorized or are being illegally sold in the U.S without authorization. Sales of devices without authorization, or at variance from their authorization, while illegal, would not implicate the rule changes considered in this docket.

We have developed with the Society of Broadcast Engineers and the substantially disenfranchised AM broadcast community allies in the effort against RF noise. However, the focus of AM revitalization is not on ambient RF conditions because fixing that is a long-term effort and AM broadcasters have very short term economic concerns. The FCC's order and further NPRM concerning AM revitalization, released in November of 2015 was a huge disappointment in that it made no reference to the need to regulate ambient noise in the MF and HF bands, nor did it address Part 15 and Part 18 device marketing. The SBE had argued that such is a major obstacle to revitalization of AM broadcasting. The broadcast engineers will continue to advocate for improved regulation and enforcement of rules that affect ambient noise levels.

Our discussions with Laura Smith in 2016 revealed to us (not at all surprisingly) that the culprit in the dearth of enforcement proceedings against either Part 15 users or Part 15 manufacturers is the FCC Office of Engineering and Technology. OET reportedly is taking the position that once FCC issues the first NAL against a Part 15 device user, there will be a never-ending stream of complaints that FCC will have to adjudicate or else be accused of treating similarly situated individuals differently.

However, not all of the Commission's recent steps on RF noise have been backward however, in all fairness. Thanks to the Enforcement Bureau, there was in late May of this year a meaningful, noteworthy enforcement action taken against a company called AFX, which manufactures and distributes RF lighting devices for residential and commercial environments. The Commission found that certain of AFX's under-cabinet RF lighting fixtures were allegedly causing interference to AM and FM radio broadcast reception. The Commission investigated and discovered that this line of lighting devices were unintentional radiators and subject to equipment authorization procedures which had not been followed by the company, which continued during the investigation to market the products. The company brought its product lines into compliance and the Commission and the company entered into a consent decree providing for the payment by the company of a civil penalty to the U.S. Treasury of $90,000. Additionally, the company will develop a compliance plan, a compliance manual, and do compliance training for its employees; it will establish a compliance officer, and file annual reports with the Commission annually for three years. This is not just a drop in the bucket. It is a meaningful enforcement action, and it should send a message to the many, many importers of non-compliant RF devices that pollute the spectrum and make HF reception difficult. Sure, the number of such RF devices is huge, coming into the United States from China and other countries in violation of U.S. customs laws as well as FCC regulations. But FCC enforcement has always been based principally on deterrence theory. The threat of large fines aimed at importers and distributors of RF noise generators can only help.

6. ET Docket 13-84; Reexamination of RF exposure regulations.

There has been no action since the last Board meeting on this FCC proposal to subject the Amateur Service to a "general exemption" table for conducting a routine environmental review of a proposed new or modified station configuration, and to use the exemption criteria as the preemptive standard as against more stringent state or local criteria. ARRL comments were filed September 3, 2013 and an oral Ex Parte presentation to the FCC's Wireless Telecommunications Bureau was made by Dave Sumner and me on May 13, 2014. *This remains a very dangerous proceeding, and we continue to be vigilant with respect to it.* It is also very active indeed; there are now 1,134 comments and the most recent of those were filed by an "Environmental Trust" in the past few days, urging that RF exposure in even small doses is a carcinogen and should be treated as such.

In the past, FCC has categorically exempted Amateur stations from routine RF exposure evaluation. In this proceeding, however, there is an intention to avoid specific exemptions for particular services, so as to ensure a consistent set of rules without exceptions. So, FCC has proposed 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." Our comments stated that the proposal to eliminate the "special exemption" (as the Notice put it) from routine RF exposure evaluation for the Amateur Service now set forth in Section 97.13(c) of the Commission's rules would *substantially* complicate the process of RF exposure evaluation requirements for Amateur Radio licensees.

The problem is the very significant increase in the number of Amateur stations that would be subject to routine environmental processing due to the wide variety (and size) of residential station installations; HF mobile stations; and the effect of these new rules on the ability of radio Amateurs to obtain and maintain land use authorizations for their stations. The FCC's goal of uniformity in RF exposure evaluation thresholds creates uneven regulatory burdens which disproportionately prejudice Amateur Radio licensees due to the unique considerations applicable to residential and mobile antenna installations utilized by radio Amateurs.

The general exemption table for single RF sources would require, *regardless of ERP*, a routine evaluation "if the separation distance R is less than $\lambda/2\pi$ from the radiating structure, where λ is the free-space operating wavelength, unless the available maximum time-averaged power is less than one milliwatt." This would subject virtually all mobile and portable Amateur Radio operations to routine environmental analyses, without a factual predicate for the additional regulatory burden, and without taking into account a number of factors, including the shielding effect of car bodies, etc. Furthermore, the

separation distances using the radian sphere $\lambda/2\pi$ would require a great many radio Amateurs who live on smaller real estate lots, and those who must reside in multiple unit dwellings to do an environmental analysis in order to operate in the 160, 80 and 40-meter Amateur bands *regardless of the power level used*. As to the formula for calculating ERP at the radian sphere $\lambda/2\pi$ distance for those three bands in particular, the ERP is higher than that which is achievable with a standard half-wave dipole at full legal power for the Amateur Service. Many, probably most, radio Amateurs utilize simple antennas for those frequency bands (i.e. some sort of dipole or random wire antenna). It is arguable therefore that for operation on Amateur frequencies below 14 MHz, the $\lambda/2\pi$ separation distance threshold, if adopted as proposed, should be waived for radio Amateurs.

7. WT Docket No. 15-81, Amendment of FCC Rules Concerning Electronically Stored Application and Licensing Data.

No action has been taken in this proceeding since the last Board meeting in January. There are approximately a dozen comments filed in this proceeding to date.

ARRL comments were filed June 16, 2015 in response to an FCC proposal to delete historical licensee address data in ULS for privacy reasons. Specifically, FCC proposed to amend the Commission's rules to specify that historical amateur radio licensee address information will not be routinely available for public inspection and to remove from public view in the ULS amateur radio licensee address information that is not associated with a current license or pending application. FCC also asked about removing address information from current licenses in the ULS as well, but didn't propose that.

In October of 2015, I received a call from Scot Stone at FCC "inviting" ARRL to submit some additional comment in this Docket. Scot asked for additional information about our statement in our comments that:

> "A very important use of historical licensee data not associated with a current license is by the Volunteer Examiner Coordinators (VECs) in researching the entitlement of a candidate for an upgraded Amateur Radio operator license to examination credit for a license previously held by that candidate. The Commission decided one year ago in docket 12-283 to afford examination credit to certain former licensees for examination elements 3 and 4. See, 47 C.F.R. §97.505(a). This placed an additional burden on the VECs and the Volunteer Examiner (VE) teams that volunteer their services in examination administration. ARRL noted that in order to provide examination credit to license candidates for licenses previously held (which may have expired many years previously), the VEs or VECs would be called upon to authenticate old documents and to generally validate the entitlement to the alleged former licensee to the claimed examination element credit. Authentication of documents and the research necessary to such validation did not fall within the skill sets of administering VEs or VECs. However, the rules are now in place and it is, for better or worse, the VEC's obligation to make sure that examination credit is granted only where the applicant is entitled to it. Using ULS historical licensing data is a principal means of verifying that an examination candidate who claims credit for examination elements 3 and 4 is actually the person who formerly held a license that

> would entitle him or her to the credit provided for by Section 505(a) of the Rules. Having placed a difficult authentication / verification burden on VECs and/or VEs a year ago, it is not now reasonable to deprive the VECs and VEs of the ability to ensure the integrity of the volunteer examination program by revoking access to information by which, at least in part, a VEC might verify an applicant's claim of entitlement to examination credit."

WTB asked for statistics on how many hams are looking for lifetime credit for licenses previously held and any other further explanation of the burden on VECs from deleting historical license data. We had suggested that an alternative might be to allow VECs access to that data but not the general public.

We filed *ex parte* supplemental comments, in which we provided some statistics, including the following:

> The ARRL-VEC currently transmits to the Commission, on average, 5 applicants with expired license credits per week. Therefore, the ARRL-VEC has handled approximately 300 such applications since July of 2014. ARRL handles a large majority of the Amateur Radio examinations administered and applications for new and upgraded Amateur licenses, but the experience of the other VECs with respect to expired license credit applications is not specifically known. There is no good means of determining how many former licensees may take advantage of prior license examination credit in future years because there is no way to alert previous licensees of the still-new program. Applicants that have used the prior license credit mostly learned of the opportunity to regain an Amateur license by word-of-mouth from acquaintances or from relatives who are licensees. Others stumbled upon it having decided to get back into Amateur Radio. Though there is no way to predict future numbers, it may be expected that as more former licensees hear of the availability of lifetime examination credit, more will decide to regain their licenses. The Commission, having obligated VECs to validate claims of former licensee status and the data associated therewith, cannot fairly take away a key resource for objectively evaluating the validity of applicants' claims and documentation. To do so decreases substantially the ability of VECs to maintain the historically high degree of integrity of the Amateur Radio licensing process. Since the Commission clearly has no intention of assuming any of the burden of the validation process (and is ill-equipped to do so in any case), the instant proposal is, from the perspective of the ARRL-VEC, both unfair and illogical.

The docket is still open with no resolution date known so far.

II. Noteworthy Pending Antenna and RFI Cases.

There are no active pending antenna cases of which this office is aware.

III. Other Legal Matters.

1. Modified Enforcement Strategies, Plans and Implementation thereof per Minute 39, July 2015 Board Meeting (Consideration of current status of Amateur Radio enforcement and strategies and actions under new FCC administration to improve same; report of Executive Committee instructions). I will not duplicate in this memo the report that Vice President Mileshosky will be presenting with respect to the revitalization of the Official Observer/Amateur Auxiliary program. Clearly that remains the best immediate term strategy for ARRL to contribute to a maintenance level of enforcement in the Amateur Service. We still believe, subject to a very serious personal concern affecting Laura Smith's ability to conduct Amateur Radio enforcement, that we are entering a new era of cooperative partnership with Laura. We have seen signs that her interest in the job she has is more energized than before, and that she understands that with the extreme cutbacks in the field offices and staffing there, she can't effectively do her job without our help.

The question, however, is whether our creation and implementation of a revitalized OO program, clearly a necessary strategy, is a sufficient strategy for encouraging improved enforcement in the Amateur Service, per Minute 39 of the July 2015 Board Meeting. I suggested to the Executive Committee that it is not and they concurred in March. We have been approached by a long-time acquaintance of mine, David Donovan, President of the New York State Broadcasters' Association, who is of the view that new FCC Chairman Pai will be supportive of restoring some level of spectrum enforcement due to the need to protect business interests and auction revenues, and David knows of the interest of ARRL in enforcement and wants to team with us to approach Pai about some restorative efforts. We have every reason to think this is a good strategy and that we should set up meetings, either with David or independently, and approach the Commissioners about this high level problem.

We also can leverage the very happy relationship between Greg Walden, W7EQI and Chairman Pai, and while it is not a propitious time to push for greater spending by Federal agencies, the adverse effect of the field office closings is manifest and we might get some support for improved enforcement from Walden and trigger an overture to Pai on the subject.

While we realize that enforcement has been a very moving target since the July, 2015 Board meeting, and that a consistent strategy for improving enforcement has not really been possible in a worsening political climate for increased government involvement, we are nonetheless in a position of some clarity now, and perhaps can develop some improved strategies for enforcement improvement.

One other aspect of enforcement that we should pursue in the short run: Laura Smith has told us, and this has been largely verified with David Dombrowski at FCC, that the Office of Engineering and Technology has a chokehold on enforcement in Part 15 cases against individuals (this does not apply to manufacturers and importers) and OET has caused to be put on hold any field-generated Notices of Apparent Liability or Forfeiture Notices aimed at individuals, in cases of Part 15 interference (including RF lighting cases) because of the precedent that would create. In OET's view, action in even

one case will trigger ongoing complaints and create expectations that all Part 15 interference cases can be addressed. FCC doesn't have the resources to do this. EB has recommended to us that we meet with OET to see if this policy has any loopholes and whether we could persuade them that a few enforcement actions in Part 15 interference cases will create deterrence. We should consider taking this advice and moving on the meeting with OET, perhaps paired with some Commissioner meetings on enforcement. We have previously said that it is time for CEO Gallagher to meet with the FCC Commissioners anyway.

The Executive Committee ordered that we proceed with all of the above initiatives which are in process now.

2. Consideration of and development of strategies for improved visibility of ARRL in FCC advocacy under new FCC Administration. This is largely a follow-on to the above discussion. The best first step toward improving ARRL's visibility under the new FCC administration is for our President or CEO or both to meet with FCC Chairman Pai in the near term and to introduce the good news about Amateur Radio. Advice we have received recently from Laura Smith is that Amateur Radio's image at FCC is that of a non-revenue-generating radio service that asks for micro-regulation changes and uses enforcement resources. It is time to start the Pai FCC era with an introduction to the good things that Amateur Radio provides at no cost to the public and how little we really ask for in terms of FCC resources in return.

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

Respectfully submitted,

Christopher D. Imlay

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General Counsel