

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554**

In the Matter of)	
)	
Amendment of Part 97 of the Commission's)	WT Docket No. 16-239
Amateur Radio Service Rules to Permit Greater)	RM-11708
Flexibility in Digital Data Communications)	

To: The Commission

**EX PARTE COMMENTS OF ARRL
THE NATIONAL ASSOCIATION FOR AMATEUR RADIO**

ARRL, The National Association
for Amateur Radio
225 Main Street
Newington, CT 06111

David R. Siddall, Esq.
DS LAW PLLC
1629 K St. NW, Suite 300
Washington, DC 20006

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Executive Summary

The Commission repeatedly has been called upon to renew its regulations governing almost every communications sector as digital technologies supplement and in some instances replace traditional technologies. The disruption caused by introduction of digital technologies to traditional services inevitably requires new and different regulation to keep up with the fast-paced and almost constant change.

Amateur radio is no different. The Commission amended its rules to account for the digital technologies that were being introduced in the Amateur Service. As experimentation with digital techniques increased and more variants developed, the Commission adopted rules that permit new and innovative digital modes to be employed by Radio Amateurs without prior approval if specified conditions are met. The conditions are that new digital techniques must use one of the approved codes, their technical characteristics must be publicly documented, and their purpose must be to facilitate communication and not for the purpose of obscuring content.

This proceeding addresses an update to the Commission's rules that is needed because a limitation in the rules unintentionally is inhibiting U.S. Amateurs from employing the latest improvements to some of the digital modes. Commenters also raise ancillary issues in the record that would benefit from clarification or additional consideration.

Delete Symbol Rate Limits and Substitute a 2.8 kHz Bandwidth Limit

The American Radio Relay League ("ARRL" or "League") requested in its Petition that initiated this proceeding that the Commission delete the early 1980's-era symbol rate limits and adopt in their place a 2.8 kHz bandwidth limit to serve the same purpose of limiting bandwidth.

Instead of serving the intended purpose of limiting the bandwidth of signals in the RTTY/data bands, today the symbol rate inhibits use of some efficient data modes. The symbol rate limit uniquely prevents Radio Amateurs in the United States from experimenting and innovating with a class of modern digital communication techniques that already are widely used by Radio Amateurs in other countries. The limit also impairs the ability of Amateurs to improve support that they offer in times of disaster.

The Commission in its Notice of Proposed Rulemaking ("NPRM") proposed to delete the symbol rate limit but declined to replace it with the requested bandwidth limit. The League renews its request that the symbol rate be deleted and emphasizes that adopting a 2.8 kHz bandwidth limit for frequencies below 29.7 MHz is essential to promote orderly sharing of the crowded spectrum. A limit is needed even more today than when the symbol rate was adopted due to the more intense use of the limited Amateur spectrum and the increasing number of modes competing to use it. Many commenters agree with the League that the proposed limit is essential for effective sharing below 29.7 MHz.

Matters Outside the Scope of This Proceeding

Discussion by commenters in this proceeding delve into subjects well beyond its scope. The League contacted some of the most active commenters with a variety of views seeking to clarify their concerns and explore possible areas of agreement for the Commission's consideration. Meetings were held individually both in person and by teleconference with some of the parties. The initial talks were promising and a joint teleconference call was then held to facilitate direct discussion among all parties.

The issues discussed in these talks related to Automatically Controlled Digital Stations (ACDS) practices and spectrum, allegedly obscured or encrypted messages, and message content and third-party rules. As stated in the League's Final Report on July 15, consensus was not reached on sending to the Commission the joint recommendations on which conditional agreement had been reached. The ARRL Board of Directors proceeded to consider the commenters' concerns shortly after the joint talks concluded.

The issues discussed with the parties are outside the scope of this Docket and would require a further notice of proposed rulemaking before final consideration. Some of the same issues also are raised in petitions for rulemaking on which the Commission has sought comment. Given the policy as well as factual disagreements evidenced in the record, we understand that the Commission may decide to consider some of these issues. The League therefore summarizes below and describes herein the issues and its own evaluation and conclusions.

Automatically Controlled Digital Stations (ACDS). ACDS begin transmitting only when an interrogation signal is received from another station controlled by an active operator. Below 29.7 MHz the Amateur rules define subbands to which ACDS with signals wider than 500 Hz must confine their transmissions. The League concluded that using subbands for all ACDS plus non-ACDS data signals greater than 500 Hz would help alleviate friction between users of traditional modes and those employing the newer digital modes.

The League strongly supports expansion of the HF ACDS subbands, especially if more signals are added -- but changing the subband boundaries requires study and careful consideration of trade-offs because any changes will affect multiple user interests both for domestic and international communications. (The HF bands at issue uniquely support worldwide communications.) Such changes were not discussed in the NPRM and therefore the public notice and comment required by the Administrative Procedure Act has not occurred. Accordingly, it was determined that there is sufficient time for the League and others to consider the full panoply of factors that would go into establishing new subband limits and related matters should the Commission find merit in these recommendations. The League therefore referred subband reformulation issues to its HF Band Planning Committee for its consideration.

Obscure Messages. As recently as 2013 the ARRL strongly opposed a request to permit even limited encryption to be employed in the Amateur Service. The League remains opposed to encrypted messages as defined in international and domestic law beyond the uses already

permitted (such as for satellite control signals). However, it disagrees with commenters who argue that the digital modes being used by Radio Amateurs around the world are *per se* “obscured” or “encrypted”. The Commission has specifically addressed this issue more than once and promulgated rules that permit Amateurs to use any digital technique for the purpose of facilitating communications if the technical characteristics are publicly documented and the encoding is not for the purpose of obscuring content. There is a difference between prohibited “encryption” of messages – which generally is understood to refer to a process intended to ensure that only the addressed (authorized) parties can access the message – and permitted “encoding” of messages that converts and compresses data into formats so that it can be digitally transmitted and received in an efficient manner.

Enforcement. The League strongly advocates for enforcement and meaningful self-policing in the Amateur Service. Such self-policing always must operate within the boundaries of the Amateur Service rules as adopted and interpreted by the Commission. In cooperation with the FCC, the League is in the process of implementing a new Amateur Voluntary Monitoring program to assist the Commission to better locate and remove offenders in a timely fashion across all modes and frequencies.

Some commenters allege that specific messages violate the Commission’s Rules governing encryption, third party messages, pecuniary interests, objectionable language, or commercial carriage. We observe that recently there have been laudable efforts at self-policing. Unresolved complaints are appropriately handled as enforcement matters rather than as rulemaking matters.

Conclusion. It is vital that the rules governing the Amateur Radio Service facilitate continuation of its experimental traditions and purposes. Using the Amateur spectrum “sandbox” for innovation and development of new ideas and technologies is of significant public benefit.

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I. Introduction

The American Radio Relay League (“ARRL” or “League”) requested that all symbol rate limits be deleted from the Part 97 Amateur rules in its petition that initiated this proceeding. The League proposed that a 2.8 kHz maximum bandwidth limit below 29.7 MHz be substituted in place of the symbol rate limits to facilitate sharing of the RTTY/data bands.¹

Symbol rate limits inhibit experimentation, development, and use of efficient data communication modes instead of serving their intended purpose of limiting signal bandwidth in the RTTY/data bands. The result is that the rule uniquely prevents Radio Amateurs in the United States from experimenting and innovating with a whole class of modern digital communication techniques that are being developed and employed in other countries. The limit also impairs the

¹ RM-11708, Amendment of Part 97 of the Commission's Amateur Radio Service Rules to Permit Greater Flexibility in Digital Data Communications, filed by the ARRL on November 15, 2013.

ability of Amateurs in the United States to improve support that they offer in times of disaster, including efforts supported by the International Telecommunications Union (ITU) to put into place emergency communications capabilities in the Caribbean where they often are needed.²

The Commission in its Notice of Proposed Rulemaking (“NPRM” or “Notice”) proposed to delete the symbol rate limit but declined to propose a maximum bandwidth limit.³ A limit is needed even more today than when the symbol rate was adopted due to the more intense use of the limited Amateur spectrum and the characteristics and increasing number of modes competing to use it. Many commenters agree with the League that bandwidth limits continue to be necessary for effective sharing below 29.7 MHz. Data signals commonly used for daily communications as well as in disaster situations have bandwidths in the range of 2.5 kHz and must co-exist with other modes that use bandwidths as narrow as 50 Hz.

The League therefore urges the Commission to eliminate the baud rate limits at its earliest possible opportunity and to substitute the 2.8 kHz bandwidth limit proposed by the ARRL. Both issues have been fully discussed in the record and a significant number of commenters express strong support for both actions.

A substantial number of parties address additional rules and issues in their comments and *ex parte* submissions. While these additional issues are outside the scope of this proceeding because they were not addressed by the Commission in its Notice (nor by the ARRL in its petition), the League took the initiative to facilitate talks among some of the most adamant and prolific commenters with a variety of views in an effort to reach a common understanding of the most contentious issues and to foster agreement insofar as possible.⁴ The League’s Board of

² See *infra*, n.10.

³ Notice of Proposed Rulemaking, WT Docket 16-239, 31 FCC Rcd 8485 (2016).

⁴ See ARRL, *ex parte* request letter submitted in the record of this proceeding dated March 27, 2019; Interim Report *ex parte* letter dated June 11, 2019; additional request *ex parte* letter dated June 27, 2019;

Directors at its mid-July meeting reviewed a number of issues, including those discussed during these talks. Discussion of the issues and the League's conclusions appear below.

II. **The Symbol Rate Limits Should be Deleted and a 2.8 kHz Bandwidth Limit Substituted in the RTTY/data Bands Below 29.7 MHz**

The symbol rate limit in the Commission's Rules⁵ is unique among the world's Amateur Radio regulations. As discussed in the ARRL's Petition and in its comments earlier in this proceeding,⁶ not only does the symbol rate limit no longer serve its intended purpose of specifying a maximum signal bandwidth, but worse, technological developments have transformed it into a prohibition on experimentation and development with a range of over-the-air digital techniques that promise more efficient data communications using less spectrum for shorter periods of time.

One benefit of repealing the symbol rate limit is that doing so would allow shortened transmission times for the same amount of data without increasing the bandwidth occupied by the signal. Other Amateurs would benefit by the resulting reduction in potential interference. Also adopting an overall 2.8 kHz signal bandwidth limit for the crowded RTTY/data bands would permit U.S. Amateur operators to use modes used by Amateurs in other countries on the HF bands where international communications occur but which are not permitted in the U.S. because of the symbol rate limit. To put it directly, U.S. amateurs are prohibited from using the most efficient mode even though the signal bandwidth would not be any greater than that of less efficient modes that are authorized.

and Final Report *ex parte* letter dated July 15, 2019.

⁵ See 47 C.F.R. §§97.305 & 97.307.

⁶ See Comments of ARRL, The National Association for Amateur Radio in WT Docket No. 16-239 and RM-11708, dated October 11, 2016.

When adopted, the 300 baud limit was viewed through the perspective of the technology that existed in the late 1970's. The Commission proposed to organize the Radio Amateur bands by bandwidth, but strong objections were raised.⁷ Eventually the 300 baud limit was adopted to limit bandwidth in the RTTY/data bands.⁸ In this manner a mixture of modes with a variety of bandwidths came to be authorized in the HF RTTY/data bands.

When adopting the 300 baud limit in 1980, the Commission concluded that the bandwidth of data signals should be limited to the bandwidth of other signals:

There was also general agreement that the permissible bandwidths of ASCII or other radioteletypewriter signals should be similar to the traditional bandwidths associated with the use of the Baudot Code in the various frequency bands. . . . Thus, there appeared to be a general consensus of opinion that the speed between 3.5 and 29.7 MHz should be limited to 300 bauds. . . .⁹

The need for an overall bandwidth limit has only increased during the intervening forty years.

When adopted in 1980, baud rate could be directly related to bandwidth. But advances in digital coding severed that direct link so that to serve the same purpose today the bandwidth limit must be measured in kHz rather than in baud.

We also note an additional public interest factor supporting this change. The International Telecommunications Union (ITU) works with telecommunications bodies here in the Americas to train Radio Amateurs and acquire suitable data equipment for use in disasters, such as hurricanes. The digital modes best suited for disaster communications exceed the

⁷ See FCC Docket No. 20777, Notice of Proposed Rulemaking, 41 Fed.Reg. 17789 (April 28, 1976) (proposing to regulate the Amateur bands by bandwidth instead of by mode); Second Report and Order, 43 Fed.Reg. 36985 (Aug. 21, 1978) (dismissing proposals to regulate by bandwidth).

⁸ *Id.*; Notice of Inquiry and Further Notice of Proposed Rulemaking, 43 Fed.Reg. 36984 (Aug. 21, 1978) (proposing to permit additional digital codes and requesting comment on standards, including a maximum baud rate); Third Report and Order, 45 Fed.Reg. 8990 (Feb. 11, 1980) (authorizing Amateur use of ASCII subject to a "sending speed" to "not exceed 300 bauds").

⁹ Third Report and Order, *id.* at para. 4.

symbol rate permitted U.S. Amateurs even though the bandwidth is no more than that for permitted modes. As described in an ITU publication earlier this year:

In 2018, ITU teamed up with regional telecommunications bodies in the Americas such as la Comision Regional Tecnica de Telecomunicaciones (COMTELCA), the Inter-American Telecommunication Commission (CITEL) and the International Amateur Radio Union (IARU) to set up an alternative telecommunication system for use in times of emergencies. The system does not rely on conventional means of communication such as the Internet, but rather on amateur radio systems.

* * * * *

Governments have played an important role in project implementation. This was necessary for effective coordination among telecommunications authorities, organizations responsible to respond to emergencies and radio-amateur associations.

Governments have also provided some equipment and carried out preliminary work to start operations. National partnerships were built among relevant entities, to procure the needed equipment, deliver trainings, and increase awareness of Winlink.¹⁰

On multiple occasions the ARRL has obtained short-term waivers from the Commission to permit use of the newer efficient data modes that enable communications with stations in disaster areas using systems such as the ones encouraged by the ITU for use in our neighboring countries.¹¹

Accordingly, the League again urges the Commission to eliminate all symbol rate limits, and instead to adopt a 2.8 kHz bandwidth limit in the HF RTTY/data bands as proposed by the League. These issues have been fully briefed and discussed in this Docket. The vast preponderance of commenters support removing the restrictions and substituting a 2.8 kHz signal bandwidth limit in their place.

¹⁰ See Miguel Alcaine, Representative of the ITU Area Office in Tegucigalpa, Honduras: How ITU is Strengthening Emergency Telecommunications in the Americas. ITU News (dated March 5, 2019). Available at this link: <https://news.itu.int/how-itu-is-strengthening-emergency-telecommunications-in-the-americas/> (last checked Sept. 10, 2019).

¹¹ See, e.g., ARRL, FCC Extends Waiver Permitting Use of PACTOR 4 for Hurricane Relief Efforts (dated Sept. 6, 2019). Available at this link: <http://www.arrl.org/news/fcc-extends-waiver-permitting-use-of-pactor-4-for-hurricane-relief-efforts> (last checked Sept. 10, 2019).

III. Matters Raised by Commenters Outside the Scope of This Proceeding May Have Merit for Consideration in a Further Notice

A. Introduction

A substantial number of parties submitted multiple comments and *ex parte* filings in this proceeding that address rules and issues not addressed by the Commission in its Notice of Proposed Rulemaking (nor by the ARRL in its initiating petition, RM-11708). While these issues are outside the scope of this proceeding, the League believes that some of the underlying rules should be clarified and that other issues have merit and should be considered in a Further Notice or new proceeding.

B. The ARRL Attempted to Forge a Consensus on Select Contentious Issues

The League took the initiative to initiate discussions with select commenters who had expressed strong and widely varied viewpoints on the issues discussed below. The talks were undertaken after ascertaining from the FCC staff that there was time to facilitate discussions to explore areas of possible agreement. Our intent was to explore resolution of at least some of the issues so as to better mitigate interference from operators using new and different modes while encouraging licensees to continue and enhance their contributions to the advancement of the radio art and emergency communications capabilities. Our view was that the discussions would better inform the participants and provide a strong basis for the ARRL to determine its recommendations for a fair and equitable resolution of the issues even if an agreement among the differing parties could not be reached. The ARRL filed an Interim Report with the Commission describing the discussions on June 11¹², and a Final Report on July 15, 2019.¹³

¹² See *Ex Parte* Letter from the ARRL filed in Docket 16-239 on June 11, 2019 (“Interim Report”).

¹³ See *Ex Parte* Letter from the ARRL filed in Docket 16-239 on July 15, 2019 (“Final Report”).

As stated in our Final Report, although not without difficulties partially attributable to the passions of the respective parties, we met with some of the parties individually and by teleconference call, and ultimately convened a teleconference call attended by all principals except one (who instead was represented by two lawyers). For the most part the discussions were very positive, and by the end of the teleconference we believe that there was a better understanding of the complexities of the issues shared by all, and even areas of consensus.¹⁴ Nevertheless, despite these best efforts, agreement was not reached on every issue. Some of the parties negotiated with an “all or nothing” approach and did not agree to submit to the Commission any item or items on which a general conditional consensus had formed.

Subsequent to the discussions with those varied parties, at its mid-July Meeting the League’s Board of Directors considered the array of issues raised in this proceeding. The Board adopted the recommendations stated and discussed below.

C. Automatically Controlled Digital Stations (ACDS) and Wide-band Digital Stations Should Operate Within Designated Subbands

The League concluded that using identified subbands for all ACDS stations, and also for data signals occupying greater than 500 kHz in bandwidth, would help alleviate friction among users of the traditional and the newer modes and techniques that share the RTTY/data bands. The bands below 30 MHz are an environment in which the limited available spectrum must be dynamically shared, which can be problematic. Expanding the types of digital signals using the designated subbands promises to facilitate sharing in the traditional Amateur manner.

ACDS are activated to transmit only when an interrogation signal is received from another station controlled by an active operator. ACDS do not self-actuate.¹⁵ The operator of

¹⁴ As acknowledged in the ARRL’s Final Report, *supra*, all participating parties engaged in substantial work explaining positions and formulating possible compromises, for which the League is appreciative.

¹⁵ See 47 C.F.R. §§97.3(a)(6) & 97.221.

the interrogating station must listen on the ACDS frequency to ensure that the path is clear before calling. If other stations are transmitting on the frequency or other interference is present, including noise such as strong static crashes, the ACDS will have difficulty detecting the calling station's signal and cannot transmit a response until it senses an appropriately formatted request.

An exciting aspect of Amateur Radio is that it provides a “spectrum sandbox” for the increasing numbers of Radio Amateurs conversant with digital technologies (and other technologies as well). Radio Amateurs can experiment in the “ham” sandbox under real-world conditions that include the unique characteristics of actual ionospheric propagation that challenge establishment of reliable communications over thousands of miles up to, and including, the other side of the earth.

We recognize, however, that the steady stream of new digital modes created by experimenters attempting to improve communications methods may stress some operators who use traditional modes and are not necessarily conversant with the latest of the ever-changing digital modes.¹⁶ Unlike most services regulated by the Commission, in the Amateur Service the spectrum resource below 30 MHz is shared among all licensees on a non-channelized basis. There are no fixed frequencies. Instances of signal interference are not uncommon among the same mode and between different modes because of this shared arrangement. The smorgasbord of CW, RTTY, and multiple variations of digital signals all operate within the relatively narrow confines of the RTTY/data bands designated by the Commission.

The Commission has organized each HF band into two basic divisions. One is designated for RTTY/data modes. The other is designated for Phone/image modes. CW has a

¹⁶ There are multiple websites that assist Amateurs and others to identify digital signals heard on the air. For example, one that focuses on amateur radio modes and provides video and audio samples of the major amateur modes is at this link: http://www.hfradio.org.uk/html/digital_modes.html (last visited Sept. 10, 2019).

preferred status and is allowed on any authorized frequency.¹⁷ The Commission's Rules also specify subbands below 29.7 MHz to which ACDS with signals greater than 500 Hz bandwidth must confine their operations.¹⁸ Beyond this basic band organization, frequency selection is by operator choice determined by practice and custom, and informed by voluntary band plans agreed to and published by the International Amateur Radio Union (IARU).¹⁹

In addition to the different modes that must be accommodated, on the bands below 30 MHz constantly changing propagation conditions cause signals vary in strength, usually on a gradual basis, but sometime quite abruptly. This makes reliably establishing specific communications paths difficult. Sharing spectrum that is subject to constantly shifting propagation contributes to instances of interference among and between signals no matter the mode. Radio Amateurs are adept at compensating for changing propagation conditions, but a certain level of frustration can be exhibited when the station experiencing interference cannot identify the mode in use by the other station (for example), whether the difficulty is justified or not.

The League in this context concluded that all ACDS below 29.7 MHz, regardless of bandwidth, should operate within the subbands designated by the Commission. In this regard we note that the voluntary band plans adopted by the Radio Amateurs in each of the three ITU world regions under the auspices of the International Amateur Radio Union (IARU) already recommend separate bands for all ACDS, not just those with bandwidths greater than 500 Hz.²⁰

¹⁷ See 47 C.F.R. §97.305.

¹⁸ See 47 C.F.R. §97.221(b).

¹⁹ U.S. operators first and foremost must comply with the FCC requirements specified at 47 C.F.R. §97.305. Adherence to the IARU band plan is voluntary and not possible in all respects because of conflicts with our domestic rules. Plans for all 3 world regions can be viewed at this link: <https://www.iaru-r2.org/band-plan/> (last viewed Sept. 10, 2019).

²⁰ *Id.*

The League concluded that digital data stations with bandwidths greater than 500 Hz also should operate within the ACDS subbands. Such a change would enhance spectrum sharing, so long as adequate spectrum is designated to accommodate the ACDS and wideband digital stations.

The League strongly supports expansion of the ACDS subbands, especially if more signals are added. But establishing the boundaries of these subbands is complex and of critical importance to neighboring users as well as to ACDS operators. It is imperative that the process of recommending new subband boundaries, if expansion is approved, consider multiple concerns. Existing domestic usage and expected demand must be accommodated. International usage and related band plans also must be taken into consideration, as the bands are shared worldwide and individual stations communicate across national boundaries.

The League Board of Directors, meeting just days after conclusion of the multi-party discussions described above, lacked the time necessary to methodically consider what subband boundary changes may be needed to accommodate these proposed changes. Inasmuch as changes to the current ACDS subband boundaries had not been proposed or addressed by the League in its Petition, nor by the Commission in the subject NPRM, the public notice and comment required by the Administrative Procedure Act has not occurred. Accordingly, it was concluded that the League and others have time to formulate subband proposals before comments would be due in any subsequent proceeding. Subband reformulation matters therefore were not part of the League's decisions, but instead were referred to its HF Band Planning Committee for more in-depth consideration.

D. ITU Radio Regulations and Identical Commission Strictures on Obscured Messages Do Not Bar Efficient Data Modes

Some commenters argue that one or more of the digital modes employed worldwide by Radio Amateurs licensed by a variety of countries constitute “obscured” or “encrypted” communications, and therefore licensees using the identified modes violate international treaty obligations and domestic rules that govern Amateur operation. If this actually were the case, the League would be among those objecting.

As recently as 2013 the ARRL strongly opposed a request to permit even a limited extension of encryption in the Amateur service.²¹ The Commission agreed and dismissed the petition request in the *Don Rolph* docket.²² The League remains opposed to encrypted messages as defined in international and domestic law beyond the exceptions that already exist in the Commission’s Rules -- such as for satellite control purposes.

The heart of the matter appears to be a concern by some commenters that some of the digital modes employed worldwide by Amateurs were designed and are being used to obscure content rather than to improve communications, and therefore violate the rules. The applicable provisions are Article 25.2A of the International Radio Regulations treaty²³ and domestic implementation thereof at Section 97.113(a)(4) of the Commission’s Rules.²⁴ Both provisions use identical wording to prohibit Amateur Radio transmissions that are “encoded for the purpose

²¹ See ARRL Comments in RM-11699, Petition for Rulemaking to Amend Part 97 of the Commission's Rules Governing the Amateur Radio Service to Provide for Encrypted Communications (filed July 8, 2013).

²² See In the Matter of Don Rolph, Petition for Rulemaking to Amend Part 97 of the Commission's Rules Governing the Amateur Radio Service to Provide for Encrypted Communications, Order (Dismissing Petition), 28 FCC Rcd 13366 (MD, WTB 2013).

²³ See International Telecommunication Union (ITU), Radio Regulations, Art. 25, §2A. The ITU’s international Radio Regulations constitute a treaty to which the United States and all other nations are signatories. This and other provisions that relate to the Amateur Radio Service were adopted at WRC-2003. The Commission’s Rules were amended in 2006 to implement this provision, *see infra*.

²⁴ See Amendment of Part 97 of the Commission’s Rules to Implement Certain World Radio Conference 2003 Final Acts, Order, 21 FCC Rcd 278 (WTB 2006).

of obscuring their meaning”²⁵

These commenters appear to misconstrue the difference between prohibited “encryption” of messages – which generally is understood to refer to a process intended to ensure that only the addressed (authorized) parties can access the message -- and the encoding of messages that converts data into a standard format so that it can be digitally transmitted and received and, in some instances, compress the data for efficient transmission. Pursuant to the Commission’s Rules, any Radio Amateur operator is authorized to transmit data using an authorized digital code.²⁶ When doing so, an operator can “use any technique whose technical characteristics have been documented publicly ... for the purpose of facilitating communications.”²⁷

The use of digital transmission techniques in the Amateur Service has been considered by the Commission on multiple occasions and the rules are explicit: new digital techniques must be documented publicly.²⁸ The condition of public documentation generally has been accomplished by publication on the Web where the documentation is available to everyone. For example, the League itself long has hosted a number of such documents on its website.²⁹ The Commission approvingly noted several of the descriptions published on the League’s site when it adopted this rule in 1995. This established clear examples of accepted descriptions that today continue to serve as valid references for documentation of new techniques.³⁰

²⁵ *Id.*

²⁶ Radio Amateurs also are authorized to utilize an unspecified digital code under the conditions set forth at 47 C.F.R. §309(b).

²⁷ *See* 47 C.F.R. §309(a)(4).

²⁸ *Id.*

²⁹ *See, e.g.*, descriptions at this link: <http://www.arrl.org/technical-characteristics> (last visited Sept. 10, 2019).

³⁰ *See* Amendment of the Amateur Service Rules to Clarify Use of CLOVER, G-TOR, and PacTOR Digital Codes, 10 FCC Rcd 11044 at fns. 4,5 (WTB, 1995).

As noted above, the League long has supported self-enforcement in the Amateur Services, and has, and continues, to invest substantial resources in a Voluntary Monitoring Program for that purpose. Earlier this year the League signed a Memorandum of Understanding with the Commission’s Enforcement Bureau for the purpose of strengthening our self-enforcement function while ensuring that rules’ interpretations and enforcement priorities are fully coordinated and consistent with the law.³¹

The League also has consistently argued that “obscuring” content is equivalent to “encryption” and continues to oppose any weakening of this prohibition as it is set forth in Section 97.113(a)(4) of the Commission’s Rules. The Commission’s decision in *Don Rolph* and the League’s comments in that proceeding correctly treat “obscuring content” and “encryption” as synonyms.³²

Some of the commenters seem to argue not about encryption itself, but rather that free, open source software and other tools must be made available to enable decoding digital techniques. We strongly agree that the Amateur Service must remain open and that encrypted signals should continue to be prohibited (while preserving the existing exceptions, such as for satellite control signals). But absent substantive evidence to the contrary, the Commission’s rules requiring that documentation be published publicly for new techniques serves that purpose in a flexible and practical manner without imposing unnecessary burdens on the developers of new techniques or prohibiting a range of digital techniques already long used in the Amateur Service, many of which include proprietary elements and are sold in the marketplace rather than made available free. Should the public documentation requirement prove to be insufficient to serve its purposes, of course the League would re-evaluate its position.

³¹ See information at this link: <https://tinyurl.com/y2w8wd9h>.

³² See *fns. 21 and 22, supra*.

E. Alleged Rules Violations are More Appropriately Enforcement Matters, Not Rulemaking Issues

The League advocates meaningful self-policing of the Amateur rules and is in the process of implementing a new program in cooperation with the FCC to better locate and remove offenders in a timely fashion. That program is in the process of being established and soon will be operational.³³

Some commenters have provided examples of specific messages that they argue may violate rules such as those governing encryption, third party messages, pecuniary interests, objectionable language, or commercial carriage. If there are violations of the existing rules, they are most appropriately handled as enforcement matters rather than as rulemaking matters. Only after reviewing the validity of complaints would the Commission be in a position to assess whether there is a basis for considering changes to its Rules.

To the extent that self-enforcement relies upon being able to read the content of digital transmissions, it appears that appropriate rules are in place to accomplish that objective. No digital technique can be used without public disclosure, discussed above.

F. Conclusion

It is vital that the experimental traditions and purposes of the Amateur Radio service continue. Amateurs have a 100-plus year tradition of serving the public interest by using its spectrum “sandbox” to innovate and develop new ideas and technologies. Today a lot of those new ideas and technologies are with digital modes and techniques.

³³ See ARRL, Window Closing on July 15 for Volunteer Monitor Program Applications, available at this link: <http://www.arrl.org/news/window-closing-on-july-15-for-volunteer-monitor-program-applications> (dated July 10, 2019) (last checked Sept. 10, 2019).

The long-outdated symbol rate limits prevent use of some newer digital modes and should be replaced as soon as possible by a 2.8 kHz bandwidth limit below 29.7 MHz. The League also strongly supports expansion of the HF ACDS subbands, especially if more signals are added. Such changes and related issues are being considered by the League's HF Band Planning Committee and these issues should be considered for inclusion in a Further Notice.

Respectfully submitted,

ARRL, THE NATIONAL ASSOCIATION
FOR AMATEUR RADIO

225 Main Street
Newington, CT 06111

By:

A handwritten signature in blue ink that reads "DR Siddall". The signature is written in a cursive, flowing style.

David R. Siddall
ARRL Washington Counsel

DS LAW PLLC
1629 K St NW, Suite 300
Washington, DC 20006

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