

October 8, 2019

Ex Parte Notice via ECFS

Marlene H. Dortch
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Amendment of Part 97 of the Commission's Amateur Radio Service Rules to Permit Greater Flexibility in Data Communications, WT Docket No. 16-239; Petition for Rulemaking filed by Amateur Radio Station Licensee Ron Kolarik (K0IDT), RM-11831 (Oct. 9, 2018); Petition for Rulemaking filed by the American Radio Relay League, Inc. (ARRL), RM-11828 (Feb. 28, 2018); Petition for Rulemaking filed by the American Radio Relay League, Inc. (ARRL), RM-11759 (Jan. 8, 2016); Petition for Rulemaking filed by the American Radio Relay League, Inc. (ARRL), RM-11708 (Nov. 15, 2013).*

Dear Ms. Dortch:

On Friday, October 4, 2019, Dr. Theodore S. Rappaport (N9NB), Founding Director, NYU Wireless and David Lee/Ernst Weber Professor of Electrical Engineering at New York University; Michael J. Marcus (N3JMM) of Marcus Spectrum Solutions, LLC; John W. Castle and the undersigned, on behalf of New York University, met separately with: (1) Don Stockdale, Chief of the Federal Communications Commission's ("FCC" or "Commission") Wireless Telecommunications Bureau ("WTB"), Julius Knapp, Chief of the Commission's Office of Engineering and Technology ("OET"), and Michael Ha and Paul Murray of OET; (2) Bill Davenport, Chief of Staff and Senior Legal Advisor to Commissioner Geoffrey Starks; (3) Suzanne Tetreault, Deputy Bureau Chief of the WTB, Roger Noel, Chief of the WTB's Mobility Division, Scot Stone, Deputy Chief of the WTB's Mobility Division, Paul Moon of WTB, and Eric Burger, the Commission's Chief Technology Officer; and (4) Umair Javed, Wireless Legal Advisor to Commissioner Rosenworcel.

In the meetings, we discussed the contents of the attached presentation, copies of which were provided to attendees. We also urged the Commission to: (1) refrain from issuing a final order in response to the Notice of Proposed Rulemaking in WT Docket No. 16-239;¹ (2) issue a Further Notice of Proposed Rulemaking in WT Docket No. 16-239 seeking comment on the proposals to protect openness and transparency in amateur radio set forth in the Petition for Rulemaking filed by Ron Kolarik (K0IDT);² and (3) resolve in an omnibus order all of the issues, including issues

¹ See *Amendment of Part 97 of the Commission's Amateur Radio Service Rules to Permit Greater Flexibility in Data Communications*, Notice of Proposed Rulemaking, 31 FCC Rcd 8485 (2016).

² See *Petition for Rulemaking filed by Amateur Radio Station Licensee Ron Kolarik (K0IDT), RM-11831 (Oct. 9, 2018) ("Kolarik Petition")*.

pertaining to openness and transparency, raised in the *Kolarik Petition* and WT Docket No. 16-239 in the above-referenced dockets.

On October 8, 2019, I also sent the attached presentation via email to the following:

Chairman Ajit Pai
Commissioner Brendan Carr
Commissioner Michael O’Rielly
Matthew Berry, FCC Chief of Staff
Aaron Goldberger, Wireless Legal Advisor to Chairman Pai
Will Adams, Wireless Legal Advisor to Commissioner Carr
Erin McGrath, Wireless Legal Advisor to Commissioner O’Rielly

Pursuant to Section 1.1206(b) of the Commission’s rules, I am filing this letter electronically in the above-referenced dockets. Please contact me directly with any questions.

Respectfully Submitted,

/s/ Ari Q. Fitzgerald
Ari Q. Fitzgerald
HOGAN LOVELLS US LLP
555 Thirteenth Street, NW
Washington, DC 20004
T: (202) 637-5423
E: ari.fitzgerald@hoganlovells.com

Counsel to New York University

Attachment

cc (via email): Chairman Ajit Pai
Commissioner Michael O’Rielly
Commissioner Brendan Carr
Matthew Berry
Don Stockdale
Julie Knapp
Eric Burger
Will Adams
Bill Davenport
Aaron Goldberger
Umair Javed
Erin McGrath
Suzanne Tetreault
Roger Noel
Scot Stone
Michael Ha
Paul Murray
Paul Moon

Amateur Radio Service (Part 97)

Existing Problems and a Solution

Theodore S. Rappaport, New York University
Michael J. Marcus, Marcus Spectrum Solutions

Presented to Federal Communications Commission

October 4, 2019

Overview of Presentation

- Three Fundamental Bedrock Principles of the Amateur Radio Service
- Long standing problems
- The Commission can provide a good solution
- Recommendation to FCC
- Background – Monitoring, Commercial Bypass, Third Party regulations

Three Fundamental Bedrock Principles

- 1. All Data in the Amateur Radio Service must be open and capable of being readily monitored Over the Air for true meaning by third parties. No obscured messages are allowed.** (See: FCC DA-95-2106, RM-11831, Enforcement Bureau TICKET # 3184322, 47. C.F.R. §97.113(a)(4), Matter of Don Rolph, Order RM-11699, DA 13-1918, ITU 25.2A 1A, See, for example, filings by Rappaport, Kolarik, Carson, McVey, White, Giambastiani, Fitter, Orr, Rascoll, Sokola, Leslie, Bahar, Vonada-Smith, industry participants, and many others in NPRM-16-239 and RM-11831. Also see comments in RM-11306, RM-11828, RM-11759, RM-11708, and PSHSB 17-344).
- 2. Section 97.1: Amateur Radio was created expressly as a voluntary noncommercial communication service, with rules aimed at advancing skills in both the communication and technical phases of the art, for continuation and extension of the amateur's unique ability to enhance international goodwill.** (See Enforcement Bureau TICKET # 3184322 and comments in RM-11831, NPRM 16-239, RM-11828, RM-11306, RM-11708 re: violations of Sec. 97.113(a)5 and improper business use).
- 3. Amateur radio signals < 30 MHz travel the globe. Regulations must ensure harmonious coexistence. This was not properly considered in NPRM 16-239, RM-11708, or RM-11306.** (The ARRL board mandated in a 14-1 vote at its second 2019 Board meeting on July 19-20, 2019 (see Para. 31), that its counsel take appropriate steps at the FCC to receive Commission approval that: (1) All automatically controlled digital stations (ACDS) below 30 MHz, regardless of bandwidth, are authorized to operate only within the ACDS bands designated in the FCC's Rules, 47 C.F.R. §97.221(b); (2) All digital mode stations that operate with a bandwidth greater than 500 Hz also must operate within the ACDS bands, whether or not automatically controlled, See ARRL BoD minutes, Para. 31: <http://www.arrl.org/files/file/2019%20Board%20of%20Directors/Final%20Minutes%20July%202019.pdf>

Long Standing Problems (1 of 3)

- Providing increase in bandwidth across entire non-phone bands is not acceptable in NPRM 16-239, RM-11708; nor was it acceptable in RM-11306.
- ACDS Stations interfere and provide obscured messages. The Winlink system/SW is run by ARSFI in the Amateur Radio Service, but also in government frequencies, and is a unique problem.
- Only when “Over the Air” Data Transparency is clarified by FCC, and Section 97.221(c) is eliminated to keep ACDS “open” and contained within ACDS sub bands (as proposed in RM-11831), would it be reasonable to replace the 300 baud limit with a 2.8 kHz data bandwidth limit in the ACDS sub bands only.
- ARRL Board in July 2019 (See Para. 31) provided a 14 – 1 mandate to seek FCC approval of regulations that match the intent of RM-11831 with a 2.8 kHz bandwidth limit applied only in the ACDS sub bands.

Long Standing Problems (2 of 3)

- ARSFI/Winlink refuses to adopt standard signaling codes as stipulated in Sec. 97.309, and relies on automatic-request-query (ARQ) and dynamic compression to provide obscured messages in the Amateur Radio Service. Even if certain protocols are “claimed” to be published, the implementation of Winlink’s ARQ/adaptive compression with its data modes makes it virtually impossible for 3rd parties to intercept messages for meaning (See: McVey, Rappaport). (Sec. 97.309, Sec. 97.113).
- ARSFI/Winlink does not provide transparency to its global email system queue, and does not allow amateur operators to review emails or files before they are sent over amateur radio stations (Sec. 97.219, 97.105).
- The Winlink system carries email from/to the general public over amateur radio spectrum without oversight or prior review of messages for appropriate content. Self Policing is not possible (See EB complaint ticket #3184322).

Long Standing Problems (3 of 3)

- Statements by modem vendors such as SCS make clear that their protocols are proprietary, and unlike other proprietary protocols such as D-STAR, AMBE, DMR and Fusion, Winlink/ARSFI and its data modes do not offer a readily available decoding solution for over-the-air monitoring for true meaning. This is in contrast to other HF data modes in the Amateur Radio Service, thus providing an expectation of privacy that leads to violations of the intent and purpose of amateur radio.
- See: [https://ecfsapi.fcc.gov/file/10417301289214/SCS FCC Comment RM11831.pdf](https://ecfsapi.fcc.gov/file/10417301289214/SCS_FCC_Comment_RM11831.pdf)
- See: <https://ecfsapi.fcc.gov/file/110731917879/16-239.pdf>
- ARSFI/Winlink also violates ARRL's own interpretation of Sec. 97.309(a)4 requiring documentation to: **(a) recognize the technique or protocol when observed on the air, (b) determine call signs of stations in communication and read the content of the transmissions.**“ <http://www.arrl.org/technical-characteristics>

The Commission can provide a good solution

- Concurrently adopt proposals in RM-11831 and modify NPRM 16-239: Replace 300 baud with 2.8 kHz BW in ACDS sub bands.
- This would mandate open decoding for ALL modes and systems, while placing ALL ACDS operations and wideband data within the Sec. 97.221(b) ACDS sub bands to mitigate interference while deleting 97.221(c).
- Makes clear that Part 97 Rules are “not optional” or “mere suggestions,” ensuring rules apply to ALL amateurs and that data transmissions are open for true meaning to the entire amateur community for self-policing, minimal FCC oversight.
- This satisfies all points (1)-(6) of Para. 31 in ARRL BoD minutes

Recommendation (1 of 3)

“Win-Win Proposal for Amateur Radio”

- Combine and modify features of NPRM 16-239 (using a 2.8 kHz BW limit in ACDS sub bands) and RM-11831 into a single “omnibus” long term solution.
- FCC must insist upon the use of only openly decodable data modes that can be readily monitored for true meaning using readily available means by third parties - as proposed in RM-11831 (open source or readily available means). This is vital to preserve the Service with little FCC oversight.
- In the ARSFI/Winlink global email system, transmissions cannot be decoded for true meaning over the air by third parties. ARSFI/Winlink data modes employ dynamic compression with ARQ which obscures messages and provides expectations of privacy with documented violations and decades of opposition. This would be prohibited through adoption of RM-11831.

Recommendation (2 of 3)

“Win-Win Proposal for Amateur Radio”

- Eliminate Section 97.221(c) as described in RM-11831, and confine ALL store and forward email systems of any bandwidth to the ACDS sub bands specified in Sec. 97.221(b) (as mandated by ARRL BoD, Para. 31, July 2019 Board Meeting Minutes).
- Eliminate the 300 baud symbol rate limit in RTTY/Data sub bands, and establish a 2.8 KHz bandwidth limit for ACDS and wideband data within the Section 97.221(b) - ACDS sub bands only - and impose a 500 Hz bandwidth limit in the remaining RTTY/Data sub bands, thus protecting narrowband modes while accommodating increased ACDS data throughput, along with technology development, other wideband modes and experimentation, **provided that all transmissions are open for third party intercept for true meaning over the air.**
- Require CW ID for all ACDS stations regardless of bandwidth and mode⁹

Recommendation (3 of 3)

“Win-Win Proposal for Amateur Radio”

- Require buffer and public screening of all incoming email and file messages from/to non-amateurs into/out of Winlink, before they are sent to Winlink’s store and forward systems and transmitted over the amateur spectrum. This will eliminate misuse of amateur spectrum and ensure regulatory compliance, openness, and broad access to amateurs and the public.
- Reinforce the regulatory importance of compliance with Third Party Traffic Agreements. RM-11831 will provide transparency for broad self-policing.
- RM-11831 will ensure the entire amateur radio community and the public can guard against the regular bypassing of other radio email services, and will allow all amateurs to detect and prevent pecuniary interests. FCC should also update the “pizza rule” which is obsolete and abused regularly. See: [https://ecfsapi.fcc.gov/file/109261360912077/%24ADDENDUM9 24 19 ARRLreply.pdf](https://ecfsapi.fcc.gov/file/109261360912077/%24ADDENDUM9%2024%2019%20ARRLreply.pdf)
- Proposal resolves longstanding obscurity and interference issues for ACDS

BACKGROUND MATERIAL

Monitoring by Third Parties is Not Only Essential...

“It’s the Law!!!” (1 of 4)

ITU 25.2A 1A) “Transmissions between amateur stations of different countries shall not be encoded for the purpose of obscuring their meaning, except for control signals exchanged between earth command stations and space stations in the amateur-satellite service.”
(WRC-03)

ITU25.3 2) “Amateur stations may be used for transmitting international communications on behalf of third parties only in case of emergencies or disaster relief. An administration may determine the applicability of this provision to amateur stations under its jurisdiction.”
(WRC-03)

Monitoring by Third Parties is Not Only Essential...

“It’s the Law!!!” (2 of 4)

Section 97.113 (a) (4)

“No amateur station shall transmit messages encoded for the purpose of obscuring their meaning”

Section 97.1 restricts the use of amateur radio frequencies to “noncommercial” activities.....

“It’s the Law!!!”

Section 97.113 (a) (5) No amateur station shall transmit:

Communications, on a regular basis, which could reasonably be furnished alternatively through other radio services”

Monitoring by Third Parties is Not Only Essential...

“It’s the Law!!!” (3 of 4)

FCC DA-13-1918A1

“The primary protection against exploitation of the amateur service and the enforcement mechanism in the amateur service is its self-regulating character”

“To ensure that the amateur service remains a non-commercial service and self-regulates, amateur stations must be capable of understanding the communications of other amateur stations.”

19 “We note that a hallmark of enforcement in the amateur service is "self-policing," which depends on an amateur station **hearing** a message being able to determine whether message violate the amateur service rules.”

“The Bureaus emphasized that amateur radio operators have been useful in recent years in augmenting essential communication services and providing communications links when normal communication systems are overloaded or unavailable, but are not intended to supplant or replace dedicated public safety communications channels.

“In this proceeding, ARRL argues that there is no basis for assuming that encryption of transmissions in order to obscure their meaning is necessary in order to continue and enhance the utility of amateur radio emergency and disaster relief communications”

Monitoring by Third Parties is Not Only Essential...

“It’s the Law!!!” – Some additional considerations (4 of 4)

- Obscured Traffic Has Been a Core Issue and long standing problem with ARSFI/Winlink
- Incoming Internet Message Review Needed Prior to Transmission over Amateur bands
- Incoming SPAM Is a Real Issue with Winlink and improperly uses Amateur spectrum
- Unlicensed Incoming Traffic and outbound traffic is Uncontrolled, a Major Issue
- Over the Air decoding for true meaning is vital for self-policing, public access, national security, ability to provide technical advances over the entire amateur radio community
- Require CW ID for all ACDS Stations regardless of system, mode, bandwidth (20 WPM)
- Require Unaltered Message Viewer for ALL Winlink Messages and ALL Service Codes
- Preserve Message Access via web portal for Minimum One Year Timeframe
- Maintain Archive of Violations Open to All Amateurs
- Where Possible, Winlink International ACDS sub bands should be in Sync with US ACDS Sub Bands

Third Party Traffic Agreements (1 of 2)

Section 97.3 (47)

“Third party communications. A message from the control operator (first party) of an amateur station to another amateur station control operator (second party) on behalf of another person (third party).”

Third Party Traffic Agreements (2 of 2)

- USA Has Third Party Agreements with Only 53 of 161 IARU Member Countries (No EU Countries, not Japan, Russia, China, New Zealand, etc.!)
- Conform Winlink and Future Email Systems with Existing 3rd Party Traffic Agreements
- Operational Compliance with Existing 3rd Party Agreements
- US Licensees Must Be Blocked from Connection to Non-3rd Party Country ACDS's
- No ACDS should connect from Non-3rd Party Country Amateurs
- All data must be open for public monitoring over the air

Winlink Viewer fails to show complete data

Subject:[winlink-programs-group] Re: Gateway Messages not showing on Winlink Message Viewer

Date:Tue, 1 Oct 2019 06:15:51 -0700 (PDT)

From:xe2-n6kzb Member WDT/Moderator <n6kzb@outlook.com>

Reply-To:winlink-programs-group@googlegroups.com

To:Winlink Programs Group <winlink-programs-group@googlegroups.com>

As Lee indicated: *"It's purpose is to assist with monitoring over-the-air messages, (not a general purpose message viewer).*

What Lee is indicating, its for reviewing messages for content and violations for US Licensees and does not report in depth tracking.

*"You are about to view a database of messages sent to or from **only** US-licensed stations on amateur radio frequencies within the last 21 days."*

Deeper inquiry, not available on the public message viewer, shows they were processed by N7UWX-11 a Linux V 2.5.1 gateway.

Check the configurations. Being third party software we have no experience with it.



The public viewer does not show the SSID's nor tracking info in its display.

If you have a need to research a message in depth, up to 21 days, contact a WDT administrator. A host of information can be provided to you OM.

Lee may wish to jump in and add or correct my comments.

Hope this helps sir.