

## Reply to rebuttal comments from ARSFI

This is in reply to the many misstatements made by the ARSFI in their rebuttal. I will not respond to the personal attacks made in that comment but will point out the many flaws in the ARSFI filing.

1. 300 baud limit outdated rule change—the original stated intent of RM-11708, but most in favor commenters believe it's only about Pactor 4 and HF email.

“The current limitation has set the US well behind other countries in the development of more efficient HF radio protocols.”

What other countries are actively developing more “efficient” HF radio protocols? Without some references here this is absolutely meaningless. How is the 300 baud limit hindering US development? The 300 baud limit has not stopped recent, extremely popular, and efficient narrowband digital modes, such as FT8 and many variants, from being developed.

2. *“Intercommunicate more efficiently with countries that already permit digital protocols without symbol rate restrictions”.*

What other countries is it legal to communicate with, and be interoperable with, when the comment centers around Winlink gateway stations that operate outside of the US automatic sub bands? The ITU is sponsoring Winlink gateways in Central America. Will these stations be for emergency communications only or is the ITU now subsidizing free HF email service in the amateur bands?

3. *“Remove the need for Special Temporary Authority (STA) during major events”*

Where are the metrics for the number and type of messages sent with Pactor 4 under these STA's? Puerto Rico had none and claims of hundreds sent under the other STA's mean nothing without documentation in support. What messages were sent with Pactor 4 that couldn't have been accomplished by other modes? Email is not an immediate type of communication for important information, it could disappear or sit for long periods before being picked up.

5. *“The Winlink system can be used by terrorists and criminals, and poses a threat to national security”*

“FALSE OR EXTREMELY UNLIKELY. Concerning Theodore Rappaport's letters, campaigns, and ex parte filings, removing the 300 baud limit is not especially related to any increase in national security problems.”

This is very misleading. It's not about the 300 baud limit, it is about modes that can't be decoded flooding the amateur bands. If someone has bad intent there is no way to stop them but bad actors could hide in the “noise” of similar digital modes on the amateur bands, and if the communications can't be decoded, no one would know. Is anyone, other than amateur operators, monitoring for intruders or rules violations?

6. *“The Winlink system also requires password-protected call sign login to eliminate the ability to breach the system by someone trying to pirate a valid call sign”.*

Simply loading the Winlink software and requesting a password over an RF path will gain access to the system, with a password supplied by return Winlink email. Not a terribly secure method of providing a password if, as Winlink claims, the emails can be decoded. Is Winlink still suffering callsign pirating and content abuse from the boating community?

7. "Messages sent and received on the Winlink system are also made visible from the master database to sysops as a means of independently monitoring content, call signs, etc."

Sysops are not able to see traffic locally in real-time? How many sysops check daily to maintain rules compliance? Is this publicly documented somewhere? Is there a public record of violations and actions taken to prevent future problems? If Winlink modes are decodable with the proper equipment why do the sysops need to log in to the master database to see decodes? What's wrong with this?

8. "We believe in self-monitoring in the amateur spirit of self-regulation."

This is as it should be, but to depend on the operators of a basically closed system to self-regulate when amateur communications are supposed to be open for all to see, and self police, is questionable on the face of it. The FCC even thinks amateur radio should be wide open to scrutiny:

"The primary protection against exploitation of the amateur service and the enforcement mechanism in the amateur service is its self-regulating character". and, "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." ref. [DA 13-1918](#) ¶ 6

9. "Rappaport himself has never held a Winlink account or ever used one to learn, or to rationally evaluate it. The same is true for almost all of the commenters Rappaport has inspired"

There is simply no need invest in the necessary equipment and software to send rather slow email over the HF bands when most people carry a smart phone that is more capable. Why evaluate a system that may be useful for emergency communications but has no use on a daily basis other than to avoid paying for a readily available commercial service? An interesting thing seen in Puerto Rico after hurricane Maria, people with signs pleading for WiFi so they could handle the situation themselves, they weren't looking for an amateur to send a message. The Puerto Rico event also sparked some unique solutions, among them

PR-holonet: <https://hackaday.io/project/140426-pr-holonet-disaster-area-emergency-comms>

10. "ARC modes can't be monitored on-air by the amateur community at large".

"FALSE. ARQ modes can be monitored by both commercially available hardware and software".

Winlink has been challenged many times in the past to prove their communications can be monitored. For well over a decade no one has taken up the challenge. I would like an explanation for a few things, that seem contradictory, and I'm sure the Commission would be interested too.

Winlink has said repeatedly their communications are open, with the right equipment, but yet in the official FAQ file and an introductory presentation just the opposite is stated.

Winlink FAQ

Q260

While monitoring transmissions from WL2K stations, I notice that the content appears as “gibberish”. Isn’t this illegal?

A260

The content looks that way because it is a compressed binary format called “B2F.” This format is available to anyone, so the compressed data is not considered encryption or illegal for radio amateurs. Additional information about B2F is at: <http://www.winlink.org/B2F>

Data transferred through Winlink 2000 is not considered to be Secure.

Data transferred through Winlink 2000 using the Keyboard method is not compressed; therefore it is readable by other listeners.

And this from <http://www.la3f.no/faste/digi/winlink/ExpressTutorial1130a.pdf>

## II. RMS Express Overview.

### C. Security?

It is relatively secure. The Federal Communications Commission (FCC) does not permit encryption on amateur radio frequencies. On the other hand, Winlink uses a compression technique that doesn't allow the frequency watcher to read the message –it looks like garbage. (The local Winlink guru has, for years, offered a substantial prize to anyone who could intercept and read a message – no one has claimed it.)

So the question is, is it decodable or not? Would Winlink care to explain the contradiction?

11. *“Compression techniques are proprietary and equivalent to encryption”.*

“FALSE. ARQ protocols sometimes use data compression (e.g. FBB B1 circa 1986 and Winlink B2F circa 1999) which use publicly posted specifications.”

Where’s the readily available decoder/decompression that is capable of handling compressed ARQ?  
See point 10.

12. *“All modern sophisticated digital transmissions can be difficult but not impossible to monitor. It is our opinion that it is normally not practical to expect a layman or the amateur community at large to monitor third-party communications via these transmissions”.*

I hope the Commission is paying attention. This statement absolutely flies in the face of the intent and purpose of the amateur service. It’s not a private service, simple concept that some can’t seem to grasp. Monitoring communications is the responsibility of every amateur.

13. *“Nothing in the Commission’s rules requires third-party monitoring, and it will become ever more difficult to monitor as digital transmission techniques become more sophisticated”.*

**§ 97.115 Third party communications** and **§ 97.219 Message forwarding system**, are the applicable rules. This statement seems to be saying future modes will be difficult to monitor, if that’s the case they should find another service. What is Winlink doing to prevent US stations from connecting to gateways in New Zealand and The Netherlands? Since virtually all traffic on the Winlink system is 3<sup>rd</sup> party, US stations should not connect or accept traffic from these stations, no 3<sup>rd</sup> party agreements, probably more

out there. How does Winlink currently screen messages coming in from the internet for compliance with §97.115(b)(2)?

14. *“Winlink messages are not available for public review”.*

“FALSE. All email transiting the Winlink system is kept for 21 days after delivery and can be inspected on request by anyone with good reason”.

What constitutes good reason? Who determines “good reason”? How about all amateur radio communications are to be open for all to see, including the general public, there should be no exceptions or limitations on who has access to amateur communications content. Why are the emails not available in a public database? This is just another example of the closed nature of the Winlink system.

15. “§ 97.305(b)(3) states that one can use entirely proprietary (but still not encrypted) communications so long as there is a record of communication”.

In the first instance there is no § 97.305(b)(3). The rule is possibly § 97.309(b)(3) and relates to **unspecified** codes, but this has absolutely nothing to do with the HF codes being discussed here as it only applies to 6 meters and up.

16. *“Winlink uses Pactor (SCS) proprietary compression”.*

“FALSE. SCS modems that run Pactor allows the native compression schemes to be switched off”.

This is probably true but without the ability to capture complete ARQ packets the compression method makes no difference, it can’t be decoded.

17. *“Winlink users operate out-of-band and use P4 illegally”*

“Legal Pactor 4 gateway stations in Mexico, Canada, the Caribbean, and Central America are commonly mistaken for US Winlink stations”.

There is virtually nothing preventing a US licensed station from connecting out of band to these stations. Recently a Canadian Winlink gateway shutdown and cited poor and illegal operation as several of the reasons. US stations used to regularly connect out of band to that station and it’s documented. That seems to occur often with users that pull up a gateway list and just attempt to connect to what ever looks good. Is anything being done to address this flagrant rule violation?

18. “Transient frequency or mode errors that might appear on the published, live RMS Channels list online are usually the result of a sysop’s typo when configuring his station”.

There must be a rash of typos going around. A quick cruise through the current RMS list turns up 20+ US Pactor stations operating either out of band or too close to the sub band edge to contain all emissions, § 97.307(b). There are 2 calls of interest in that list, WG3G operating in Trinidad, with a US call and out of band for US stations for some of his frequencies. A US call in another country, without an identifier for that country, is probably not strictly following the rules. Then again which country’s rules apply? The other oddity is KQ4ET, a dive shop owner that lists his RMS and a winlink.org email

address in his business, business?, Contact information. I imagine these are just typos too, both have been on the RMS lists for a very long time.

19. *“Pactor signals cannot coexist with other signals”*

“Pactor 1, 2 and 3 have co-existed with other signal types for over 16 years without “terrible” interference”.

This ignores all the legitimate, documented interference complaints filed in RM-11306, RM-11708 and WT 16 239. This is just one of many <https://ecfsapi.fcc.gov/file/7521098760.pdf>

The Winlink sysadmin even says conflicts arise when wider modes are mixed in with narrow modes.

“Specifically, attempting to place protocols of different bandwidths, be they analog or digital, is inviting conflict. This is especially true of protocols that utilizes state of the art error control coding and pulse shaped Orthogonal Frequency Division Multiplexing (OFDM) such as Pactor 3”

<https://ecfsapi.fcc.gov/file/6518324273.pdf>

More conflicting information and refusal to admit there are existing problems.

20. *“With passage of NPRM 11708, new wide-band data will become commonplace and will run roughshod over existing narrowband amateurs”.*

“This NPRM proceeding does not change the § 97.221 sub-bands, and Winlink stations using wide-band modes will remain within their isolated spaces”.

Where in the first statement was anything said about Winlink? Nothing prevents wider modes from filling up the RTTY/Data sub band if RM-11708 or WT 16-239 pass. Someone could drop a 20kHz wide mode smack on top of the auto sub bands and nothing could be done about it. It will be tried just because it will be legal, not nice but legal. It’s not all about Winlink.

21. “Opponents urge the Commission to disallow from the ham bands advanced digital modes that are impractical, proprietary, or prohibitively expensive to intercept by a third party. Damaging consequences are likely, including a significant economic impact on a number of small entities in the amateur radio market. It would remove many popular products and services from the amateur bands including Winlink and D-Star, Fusion, HF-ALE, AMTOR, Clover, as well as digital voice modes that use proprietary codecs and firmware, and are hard for a layman to intercept without some level of proprietary hardware, firmware or software”.

This is just more misleading and confusing information. Two of the protocols listed, AMTOR and Clover, haven’t been heard on the bands in at least a decade. ALE has a software version available while D-Star and Fusion can be copied by simply owning the radios. The decoding capability for D-Star, P25, NXDN, DMR and others has been available since at least 2013. A cheap \$20 USB receiver and some free software does it, nothing proprietary involved.

<https://www.rtl-sdr.com/rtl-sdr-radio-scanner-tutorial-decoding-digital-voice-p25-with-dsd/>

If these aren’t advanced digital modes I don’t know what is, but the key is they can be decoded by 3<sup>rd</sup> parties. There is virtually nothing out there that can intercept and decode the compressed ARQ used by Winlink. I would like to be proved wrong if there is but no one has stepped forward to prove it’s possible.

## CONCLUSION

I would hope there are enough unanswered questions in this comment for the FCC to take a closer look at some of the practices and abuse in the amateur service.

At this point perhaps the best course of action for the Commission would be to reject the proposals in RM-11708, and Docket 16-239, and terminate the proceedings.

Thank You,

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