Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	**)**	
	)	
Rulemaking under Part 97 of	**)**	
the Communications Act of 1934,	**)**	**Docket No. RM-10740**
as amended to Establish Technical	**)**	
Standards for Certain Amateur	**)**	
Radio Telephony Transmissions	**)**	

REPLY COMMENTS
Of Michael D. Lonneke and Melvin J. Ladisky

Filed: August 23, 2003

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SUMMARY

The Petitioners in RM-10740, Michael D. Lonneke and Melvin J. Ladisky have reviewed Comments filed with the Commission regarding the Petition. Comments in opposition to the Petition heavily outweigh those supporting it, however most of the Comments against the Petition parrot the same views, claims or themes. This is because certain groups banded together to encourage the filing of Comments in opposition to RM-10740. We have selected as the subject for our Reply Comments certain ideas found in a number of Comments.

The Petitioners strongly reject the contention that adoption of bandwidth standards for amateur radio SSB and AM transmissions would stifle or cripple experimentation by amateurs. Certain Comments have portrayed the Enhanced Single Sideband problem as a "petty squabble." We point out that the Commission's staff knows the complaints regarding this matter were numerous and serious. Certain Comments claim that if amateurs are required to limit their bandwidths an undue hardship would be created, requiring amateurs to acquire expensive laboratory-grade equipment in order to comply. We point out the ludicrous nature of such Comments and direct the Commission's attention to the recent completely successful implementation of a 2.8 kHz bandwidth standard on the new 60-meter allocations. RM-10740 would not, as is contended, create an enforcement nightmare for the Commission. We clarify that RM-10740 seeks to deal with offending stations, not offended stations.

In conclusion, we suggest that dismissal of RM-10740 by the Commission would signal to amateurs that needlessly wide and offensive signals may be transmitted in the crowded HF amateur bands with impunity.

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To: The Commission

I. INTRODUCTION

Michael D. Lonneke and Melvin J. Ladisky, the Petitioners in this matter, respectfully submit these Reply Comments in response to Comments filed with the Commission in connection with RM-10740 during the comment period for the above captioned proceeding.

II. PETITIONERS' REPLY COMMENTS REGARDING SEVERAL ISSUES RAISED BY THOSE FILING COMMENTS ON RM-10740

A. Implementation of Bandwidth Standards Would Not Stifle or Cripple Experimentation by Amateur Radio Licensees

In comments filed with the Commission, William M. Pasternak, Edward Keyes, Donald B. Chester and others contend that implementation of bandwidth standards for amateur HF radiotelephone transmissions as proposed in RM-10740 would stifle and/or cripple experimentation among radio amateurs. The term, "experimentation" is a subjective one. While experimentation has brought about advancements in science, not all experiments are carried out

in responsible ways. Oftentimes, experiments have detrimental side effects and we would submit that the overly-broad signals discussed in the Petition are often the result of careless or thoughtless experimenting with transmitters and audio systems, without due heed being taken of the effects such actions have on others. We submit that there is a wide gulf between tinkering with amateur gear and true experimentation.

In his comments, William M. Pasternak asks if these experimenters are not "real leaders in technical innovation." We would respectfully point out to the Commission the kind of "technical innovation" those transmitting so-called "Enhanced Single Sideband" employ. The website of a leading proponent of wide Single Sideband signals clearly shows [1] that the "technical innovation" and "experimentation" hailed by Mr. Pasternak, consists of connecting "store-bought" audio equipment to "store-bought" amateur transceivers, and pushing the technical limits of the equipment in an effort to simulate broadcast-type audio in a crowded amateur band. In some cases wider sideband filters or wider DSP choices are used to purposely achieve broad signals. We have not the slightest objection to a quest for "better" sounding audio on the amateur bands, but we believe this can be achieved *within* the bandwidth limitations envisioned in the Petition.

To illustrate this, we published comments by Robert Heil, a noted audio expert and amateur radio licensee. He has achieved success in attaining what he calls "beautiful sounding audio" on the amateur bands with an *even narrower* bandwidth than suggested in the Petition or presently required by the Commission on the new 60-meter frequency allocations for amateurs.[2]

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[1] See the website: www. NU9N.com

[2] See Exhibit I attached hereto.

We respectfully suggest to the Commission that bona-fide experimentation by amateurs seeking to bring new technologies and/or spectrum efficiency-based systems to amateur radio will not in the least be hampered by the bandwidth limitations suggested in RM-10740. Again, we see no problem with audio "tinkering" so long as it is carried out within the bandwidth limits suggested in the Petition, thus minimizing spectrum usage and interference to other amateurs. Tinkering under the guise of "experimentation" should not enjoy the protections envisioned by the Commission.

We particularly agree with Gert E. Janssens, who, in his comments to the Commission wrote: "When experimentation turns into intentional interference, it needs to be stopped."

B. Wideband Audio Signals are a Major Problem in the Amateur Service

In their comments filed with the Commission, Mark S. Bell, Michael K. Wingfield, William M. Pasternak and others claim that the interference from and occupation of excessive bandwidth by certain stations engaged in radio contesting and in the so-called "Enhanced Single Sideband" were "not a major problem" for the amateur service. We would tend to believe officials of the Commission's Enforcement Division who actually had to contend with the numerous complaints on this subject, over a considerable length of time. The Commenters would have the Commission believe that the seriousness of the splatter and wide signals that prompted complaints, Advisory Notices and RM-10740 was exaggerated. In actual fact, observation showed the number of stations engaging in the inconsiderate and needlessly wide signal transmission reached its peak just before the Commission's Advisory Notices were sent out. Once the Commission assigned a Rulemaking number to the Petition, an action that

indicated to amateurs that the Commission and its Enforcement Division were giving serious attention to the problem of needlessly and offensively wide signals, the number of such signals heard on the air dropped precipitously. To monitor the bands now, except for a few stations, one might infer that all the complaints and basis for Advisory Notices and a Rulemaking Petition were imaginary. They were not. Comments by Frank W. Fisher called this matter a "petty squabble." This is, of course, a patent misrepresentation of facts. We do not believe the Commission's Enforcement Division deals with petty squabbles, nor does the Commission assign Rulemaking numbers to petitions based on petty squabbles. As the Commission's own staff knows well, the complaints about the offensive signals were as real as they were numerous. We agree with Comments of Thomas F. Poland who suggests to the Commission that unless the ambiguity of transmitted bandwidth standards in Part 97 of the Rules is removed, a situation of much greater magnitude than has been experienced heretofore will return. The dismissal of RM-10740 by the Commission will be a clear signal to the amateur radio community that needlessly wide and offensive signals may be transmitted in the crowded HF amateur bands with impunity.

C. Imposition of Bandwidth Limits Will Not Create Undue Hardship on Amateurs

Comments by Donald B. Chester, David B. Popkin, Gordon Schlesinger and others claim that requiring amateurs to conform to bandwidth standards for HF Single Sideband and AM transmissions will create an undue hardship on amateurs. Some comments suggest that amateurs are incapable of limiting the bandwidth of these transmissions without the use of spectrum analyzers and other extremely expensive laboratory instruments. These Commenters may be unaware that the Commission, in its recent 60-meter band frequency allocations for amateurs has *already* imposed the same bandwidth limitation for Single Sideband transmissions

that the RM-10740 proposes. The Commission has never shown it expects amateurs to own and operate expensive, laboratory-grade bandwidth measuring equipment. Further, we believe it is evident from the Commission's recent actions, imposing a 2.8 kHz bandwidth limitation for certain emissions, that the Commission believes the vast majority of amateurs can readily comply with the standards. Chester's and others' comments on this subject are unsupportable when viewed in the light of recent regulatory moves by the Commission. We again restate the suggestion that by using a low-pass audio filter in the modulation system of a transmitter and controlling modulation, the suggested bandwidth limitations can be complied with.[3]

D. Policing of Bandwidths Can Be Overseen by Commission's Enforcement Division

In their comments to the Commission, Pasternak and others have suggested that the Commission's Enforcement Division would be overwhelmed with the job of policing transmitted bandwidth on the amateur HF bands. The experience of the Commission and the amateur radio community since the 60-meter band frequencies were authorized on August 3, 2003 show that amateurs *can* meet the standards imposed and that no "enforcement headache" (sic) has been created. We would respectfully submit that if regulations were never made unless it was clear that regulatory bodies had in place all the facilities needed to perfectly deal with every violator, our lives would be subjected to the whims of those who choose to practice with impunity, the very things requiring regulation. We ask the Commission to disregard Pasternak's and others' comments on this subject and all similar comments based upon the same flawed reasoning, taking into consideration what has *actually* occurred on the 60-meter band frequencies since August 3, 2003.

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[3] See Exhibit II, an analysis of "Enhanced SSB" effects by Lewis Collins, Ph.D.

E. Petitioners Seek Relief for All Amateurs from Purposely Broad Signals

In the tenth point of his comments, William M. Pasternak has contended that the Petitioners seek to protect those engaged in radio contest from interference. Mr. Pasternak has misunderstood the aim of the Petition. RM-10740 seeks for all amateurs, relief from *all* purposely-broad signals. The Petition clearly describes two groups of amateurs who create broad, offensive signals by purposely adjusting transmitting apparatus to produce such signals. The offending (not offended) amateurs are those who transmit signals containing a wider-than-necessary range of modulating frequencies and those who, during contests, turn up audio compression and/or modulation level controls in order to "spread out" their signals. We feel sure that the Commission, in reading the Petition, was able to clearly understand the description of those operators against whose inconsiderate and offensive actions the Petitioners seek relief. For this reason, we respectfully urge the Commission to ignore the erroneous conclusions written in Mr. Pasternak's comments.

IV. CONCLUSION

For the reasons discussed here, the Petitioners strongly urge the Commission to disregard the Comments on RM-10740 addressed above and, rather, give careful consideration to RM-10740 with a view towards either adopting its suggestions as rules changes, or towards modifying the Petitioners' suggestions so that this contentious issue can be finally settled by the Commission.

Respectfully submitted,

Michael D. Lonneke, W0YR
(Electronic Signature)
20732 Furr Road
Round Hill, VA 20141-1803

Melvin J. Ladisky, W6FDR
(Electronic Signature)
3320 Chestnut Lane
Camarillo, CA 93012-8225

EXHIBIT I

Note: Robert Heil, K9EID developer of a successful and popular line of microphones and communications headsets was interviewed by George Maier in connection with an article in *Electric Radio* magazine, #170, July 2003, entitled, *"Enhanced Single Sideband – Has it Created a Threat to AM'ers?"* An excerpt from that article states:

Heil: "At [the large amateur radio convention and equipment show held in] Dayton this year, I did a very interesting thing. I had a [Kenwood amateur radio transceiver, model] TS-2000 working into a dummy load while listening to its signal through an FT1000MP [amateur radio transceiver] that drove a prototype 15-watt TUBE audio amplifier. I used various microphones but mainly our new commercial Goldline Pro. **Everyone** (emphasis supplied by magazine) was astonished at the beautiful sounding audio from the Goldline Pro and TS-2000. The interesting part was that at no time did I ever transmit wider than 2.6 kHz. This was done purposely, to prove that you can achieve a very robust, beautiful sounding SSB signal, and only 2.6 kHz wide, as opposed to these 6, 7, 8 or 10 kHz wide 'enhanced' signals."

EXHIBIT II

Note: *Electric Radio* magazine, in its issue #170, July, 2003 carried an article by George Maier entitled, "*Enhanced Single Sideband- Has It Created a Threat to AM'ers*?" Maier's article contains a highly applicable discussion and analysis of so-called "Enhanced SSB" by Dr. Lewis Collins, Ph.D., an MIT graduate. Dr. Lewis is a broadcast engineer with extensive knowledge of RF engineering issues. He is also an active amateur radio operator.

"The SSB rigs of today are based on the use of filter technology to achieve the required bandwidth and unwanted sideband suppression. A double sideband suppressed-carrier signal is generated in a balanced modulator and then is filtered to remove the unwanted sideband. The filter also provides an additional 20 dB of carrier suppression.

Let's assume that the audio passband requirement is 300 to 3,100 Hz for good communications quality, and the radio uses a 6-pole filter, with a bandwidth of 2.8 kHz to provide the desired audio response. The carrier would be positioned 300 Hz below the knee of the filter curve to provide 20 dB of carrier suppression, which is a typical industry target. The modulator balance provides 40 dB or more of additional carrier suppression.

Along comes an operator that wishes to enhance his filter type SSB radio with more low-end response or a 'big bottom' as they say in broadcast and professional audio circles. This requires an equalizer that must boost, or pre-emphasize, the low frequencies by 17 dB to bring the 200 Hz audio response point up to the same level as 300 Hz. Make that 19 dB if you want to reach 100 Hz. Now, the transmit audio stages and the balanced modulator are being hit with 17 to 19 dB more voltage (7 to 9 times larger!) between 100 to 200 Hz to make up for filter

attenuation, and the transmitter's low-level stages cannot handle that without distorting. This distortion shows up as increased bandwidth and off-channel splatter. Add an overdriven linear amplifier, and the signal gets pretty ugly. Some people cleverly move the carrier closer to the knee of the filter, which reduces the amount of EQ needed, but there goes the 23 to 26 dB of unwanted sideband suppression, which is considered 'good engineering practice' and of course, up goes the complaints again. The same scenario results when the high-end audio frequencies are boosted, and the problem is really compounded if EQ is used at both ends of the filter curve."