

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	WT Docket No. 10-119
)	
Review of the Commission's Part 95 Personal Radio Services Rules)	WT Docket No. 98-182
)	
1998 Biennial Regulatory Review – 47 C.F.R. Part 90 – Private Land Mobile Radio Services)	RM-9222
)	
Petition for Rulemaking of Garmin International, Inc.)	RM-10762
)	

REPLY COMMENTS BY P. RANDALL KNOWLES

SUMMARY

Licensing by Rule is functionally equivalent to no licensing or regulation at all. That is why serious GMRS users are strongly opposed to licensing by Rule. The cost of a license is unreasonably high and contributes significantly to the problem of unlicensed FRS use of GMRS channels as the FCC itself recognized in MD Docket 08-65. All APA steps are complete and the Commission has only to act on this open matter. Reasonable cost for a 5 year license (including funding for enforcement) is \$30-\$35. Reducing license cost is the most popular thing the Commission could do for GMRS. It would cut resistance to licensing "Bubble-Pack" radios, and dramatically increase public service and emergency/disaster uses by volunteers and agencies.

Motorola's Comments err by assuming GMRS portable use is single frequency, similar to FRS. GMRS portables are perhaps the predominant means of using repeaters thus making call sign identification vital. Licensing of GMRS should be "harmonized" not with FRS, but across all equipment in GMRS, for true "simplicity".

Motorola is right that any age limitations are unworkable absent licenses. Licensee age must take into account practicalities of enforcement action against violators. Motorola is correct to recognize continuing threat of usurpation of GMRS by businesses and other non-individual entities, and the only way to effectively prevent this threat is to retain licensing of all equipment.

The record in this Docket is replete with showings of extensive and pervasive development of public service and emergency/disaster communication in GMRS under the current Rules. One good example is the Seattle Emergency Communications Hubs, which cannot function with FRS, without repeaters, without higher power portables, or if Line A and C restrictions are adopted. A good showing of the value of even modest repeater operations for personal use is the Sheldon family of Walsenburg, Colorado.

Legal arguments that the FCC has expressed intention to permit voice inversion analog scrambling in GMRS are in error. This ignores the context of the prior Docket generically looking at all private land mobile services, and only to the extent of permissible emission types. No reference was made to any operating rules. The prior Docket's sole reference to GMRS was made not by the Commission, but by vague and unidentified "Representatives" of GMRS "and various Industrial Services". The FCC cited this as a basis to take no action to change GMRS Rules in any way; lack of authorization of digital scrambling in GMRS could be argued to reflect intent that GMRS not be used for scrambling. The full Commission acted in Docket 87-265 to prohibit future police licensing in GMRS, showing intent that henceforth police scrambling take place in other radio services. The intent of the FCC Rule is clear because 10-Codes are explicitly allowed, thus plain, spoken voice can constitute "coded messages" or "hidden meanings". Channel sharing and cooperation Rules clearly reflect the intent that transmissions be not only received, but understood. The claimed non-proprietary nature of voice inversion is immaterial. Arguing what is tantamount to mandating voice inversion decoding on all GMRS equipment stretches reason and produces an absurd result. My experience belies the claimed "strong consumer demand". Any such demand is not in the public interest, but rather only the manufacturer's interest. The unintelligible "Donald Duck" effect of voice inversion is highly annoying and disruptive to users. Reference to digital scrambling interference is immaterial to GMRS and a "straw man" argument. Contrary to conclusions argued by Garmin and Uniden, voice inversion scrambling does cause harm and interfere with the functionality of GMRS. One example is the .650 channel in north suburban Chicago, where a voice inversion system has driven all other pre-existing users off the channel. The problem with scrambling in emergencies is not with transmitting stations, but receiving. Any potential grandfathering could be handled by Rule Wavier, and current equipment can continue with only scrambling disabled.

Public interest requires examination of what spectrum location for GPS and data would best suit such applications, and also requires careful assessment of interference potential in GMRS. MURS, at VHF is much better suited. Worldwide sales outside the FCC's jurisdiction should be disregarded. GPS and texting will cause substantial interference and seriously impinge on GMRS. Limited burst time is not sufficient by itself. There is no consideration of modulation limitation to reduce interference and certain degradation of vital voice monitoring in GMRS. No need for text has been shown, and texting is incompatible with a "voice message" radio service. Texting is well accommodated in cellular telephone.

Specific Absorption Rate (SAR) application to GMRS "is unfounded". As pointed out by Garmin, duty cycle is much higher with cellular phone and there is no basis to regulate the power of portables. Law enforcement use of GMRS is fundamentally incompatible with a Personal Radio Service, as shown by experience. Existing mobile station rules adequately address power. Many GMRS portables are used at multiple locations, not only hand-held, but also with external antennas at home and in vehicle, with gain Yagi and mobile antennas. This makes regulation by ERP inappropriate.

There is no current need for spectrum to justify narrowbanding; the cost to the public would be highly burdensome. Uniden Comments to mandate change of all GMRS equipment are totally unjustified and solely in their own interest, as opposed to the public interest.

Commission concern about combination radios are well taken and a refreshingly proactive approach. To attempt to provide for exceptions is too likely to emasculate any rule. Radios containing unlicensed frequencies have been proven to foster undisciplined, chaotic "toy radio" behavior and such equipment contains noise making features absolutely improper in other services. Only a complete ban will suffice to address the problem. Uniden's combination radio comments are nothing more than a selfish attempt to take over and destroy GMRS, merging it into FRS. Technology has long existed to simply and effectively configure different channels in radios with different parameters; there is no need whatsoever to make channels identical in capability.

There is no basis for drastic restrictions near Canada, which now has a parallel personal radio service to the U.S. Co-existence has worked well for over 50 years and there is less reason for restriction today than ever before. A huge area in 15 states would be deprived of any meaningful GMRS.

Only a few changes would be an improvement, existing Rules are well refined and serve well. Positive changes would be 1) Reduce license fee, 2) revise Rule schema to bundle all rules for each service together, operating rules first, followed by technical rules, 3) add rules for new technology in addition to, not in lieu of, rules to accommodate older (used) gear, 4) change small base and control rules to output power, 5) delete Section 95.29(g) for pre-1968 fixed stations, 6) prohibit combination radios containing any FRS or unlicensed channels bundled with transmit capability in Parts 80, 90, 95A, and 97, and 7) further clarify the Rules to remove any doubt as to barring of voice inversion scrambling. All other changes should be rejected as destructive to the service.

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1. General. It appears that there are some 236 comments filed and available for viewing on the Commission's web site in this Docket. All but a handful address GMRS and strongly oppose the proposed gutting of this highly utilitarian valuable resource for the American public. I wish that the Commission had provided sufficient time to actually read all the comments fully and to respond to each of the various points and concepts advanced by all of the careful thought put into them. The miniscule time period for such analysis has made this impossible.

2. De-licensing. Licensing by Rule is really no licensing at all. GMRS users understand this and almost universally refer to such an idea as de-licensing because it is functionally equivalent. Virtually all serious users of the GMRS support retaining licensing and point out numerous and substantial benefits in doing so.

A. I pointed out, in my original Comments, that the GMRS community almost universally resents the high cost of applying for a license. Even the FCC has recognized that the current figure is unreasonably high, and is a major contributor to the problem of unlicensed FRS use of GMRS channels.¹ I was unaware that the Commission itself has already proposed reducing this fee in another Docket!²

Since the Commission cites lack of licensing as a significant problem in this Docket, why has no action been taken in MD Docket 08-65? Why does *this* NPRM raise this issue and then conceal these facts? A simple and highly effective solution is readily within the Commission's grasp, and all of the APA groundwork has already been laid. **JUST DO IT!!** Don't try to use this as a ruse to destroy licensing.

¹ Comments of Bennett Z. Kobb, at pg. 2.

² MD Docket 08-65. See Comments of Bennett Z. Kobb, pg 2.

What would be a reasonable fee? The analysis of the Personal Radio Steering Group, Inc., is the only examination of this issue that I have seen so far.³ Its reasoning seems logical and suggests an amount in the range of \$30-\$35 for a 5 year license, or \$55-\$60 for a ten year license. Such amounts would not only fund the cost of processing, but also fund FCC enforcement activities, goals that virtually every GMRS user strongly supports. A lower \$30-\$35 fee lends more support to the idea of retaining 5 year licensing, but if a 10 year term is necessary to retain licensing of all GMRS equipment, so be it.

What would be the effect of finally resolving the high fee problem? Reducing the license fee in such a reasonable manner would be the single most popular action the FCC could take with respect to the General Mobile Radio Service.

Licensing will jump dramatically. Public resistance to obtaining licenses for "Bubble-Pack" radios will be drastically reduced. Public service, emergency and disaster uses of GMRS will receive a huge shot in the arm as volunteers perceive that they can afford to part with a modest sum in addition to their time. Agencies will be strongly encouraged to buy GMRS equipment since volunteers will be much more willing to obtain licenses. I can imagine no action that would be more in the public interest and convenience.

B. Motorola, Inc. makes valid points about the value of repeater systems and the significant role of GMRS systems in public service. The company is correct that the Commission should act "in such a way as to preserve and promote each of these forms of use."⁴ However, it's disappointing that Motorola went on to assume some de-licensing will occur, rather than to discuss the vital role licensing plays in so many aspects of the service, even for portables. The Motorola comments do not take into account use of portables to access repeater systems, but appear to assume all GMRS portables are operated single frequency style, similar to FRS. This is not the case.

Therefore the comments about GMRS portables being used interchangeably with FRS radios misses the mark. Rather than "harmonize" GMRS portables with FRS non-licensing, all GMRS equipment, including portables, should be harmonized with uniform GMRS licensing. This is especially true in view of the fact that the vast majority of GMRS portables are employed to operate repeaters. In promoting "simplicity", all GMRS equipment should be treated the same. GMRS portables should be related to other GMRS equipment and licensing, not FRS.

The need for accountability for higher power GMRS systems cited by Motorola at the bottom of page 4 of necessity includes portables, as they are often the predominant form of repeater access and usage. Such higher power systems with advantageous antennas are controlled by portables, which in turn need to identify with call signs as explained in my original Comments. This is yet another reason why licensing of all radios is necessary.

Motorola is also correct that any limitation (such as age) is unrealistic and unworkable in a de-licensed scheme. This is yet another why licensing should continue for all GMRS radios,

³ Comments of the Personal Radio Steering Group, Inc., at ¶¶ 46-49, pg. 10.

⁴ Comments of Motorola, Inc., pg 4.

promoting simplicity for all GMRS users. The issue is not the age of the operator, but rather the age of the *responsible licensee*. Licensee age should be reasonable in terms of practicality for prosecution for violation. The Commission has revealed no information from its enforcement staff on this critical issue. Whatever age is set for licensing, it must be truly compatible with the paramount goal of feasibility of enforcement in mind.

C. Motorola also recommends preserving GMRS for individual use and preserving protection from business and commercial usurpation. The unique character of the service has proved valuable, as Motorola has recognized. This is yet another reason to preserve licensing, as take over of repeaters by businesses cannot be prevented without the mechanics of licensing.

3. Business Use. Motorola's comments regarding the historical background of Commission action to protect GMRS from commercial usurpation reflect a clear understanding of what took place leading up to FCC action in Docket 87-265. The company is clearly correct that such a threat is no less serious today, not to mention new additional radio alternatives now available to non-individual licensees. Most other Comments appear to support the necessity of preventing business licensing in order to preserve the Personal Radio character of the service.

4. Public Service. Many of the filed comments stress the role of GMRS in promoting public service, emergency and disaster communications, in addition to vital personal and family uses. The record is replete with showings that leave no doubt that GMRS, as it is today, with current Rules, is very much in the public interest, convenience, and necessity. Suggestions to hobble GMRS (eliminate repeaters, curtail portables, de-license, trivialize beyond Lines A and C, etc.) have no rational basis, and are totally unjustifiable. Given the limited time for replies, I cite one such comment as a good example.

The Seattle Emergency Communication Hubs is a group of GMRS systems tightly integrated into an emergency plan (together with Amateur Radio) serving a major metropolitan area in a major earthquake fault zone.⁵ They have thoroughly documented that FRS does not provide a workable alternative⁶ and that repeaters are absolutely necessary.⁷ They clearly show that evisceration of GMRS beyond Lines A and C is directly contrary to public interest, convenience and necessity.⁸

The Comments of the Seattle Emergency Communications Hubs Leadership Committee, and supporting letter of the President of the Seattle City Council,⁹ demonstrate just how ill conceived and destructive almost all of the contemplated changes to GMRS are. The Seattle Comments provide thorough and dramatic basis for rejection of the NPRM suggestions, consistent with what I have detailed in my original Comments and also in this Reply.

⁵ Comments of Seattle Emergency Communications Hubs Leadership Committee, at pp. 1-2.

⁶ Seattle Hubs Comments, at pg. 2 and Attachment 2.

⁷ Seattle Hubs Comments, at pp. 2-3 and Attachment 3.

⁸ Seattle Hubs Comments, at pg. 3.

⁹ Comments of Richard Conlin.

5. Repeaters. Every one of the Comments that I saw that addressed the question of repeaters emphasized that they are fundamentally necessary. I've already given one example above with respect to the Seattle Hubs. Time constraints don't enable me to make a more comprehensive review of over 236 Comments, but I will cite one additional example relating to the value of typical family operations.¹⁰ The Sheldon family of Walsenburg, Colorado, has built a highly useful, viable communications network with only a modest repeater (25 foot antenna). It appears that all 5 members of the family benefit substantially from the capabilities that GMRS now provides. Their Comments opposing various proposals to emasculate the service demonstrate why the clear public interest is to maintain the present utility of GMR for the American public.

6. Scrambling. Two comments advance legal argument claiming that prior FCC action reflects intent that voice inversion scrambling is now permissible in the GMRS.¹¹ These arguments are fatally flawed for numerous reasons.

A. Firstly, the context of the oblique mention of GMRS must not be ignored in the Docket. At issue was a request for provision for scrambling of police communications for privacy. Not only was the Police Radio Service was considered, but the quoted material refers generically to all of "the private land mobile radio services"¹² in broad generalities. GMRS was included because of the scope of the original Petition, not due to any expansion of intent by the Commission. At issue was the question of scrambling emission types, what emissions were already authorized across all of the "the private land mobile radio services", and whether other new emission types (digital) were necessary or desirable.

There was no reference to, examination or consideration of any operating rules or restrictions in any of Parts 89, 91, 93, or 95. The finding that frequency inversion fell within the scope of F3 and A3 was likewise applied generically to all of "the private land mobile radio services"¹³ and was limited to consideration of authorized emission types. Absent any reference to the existent GMRS *operating* rules at the time¹⁴, the only application of any Commission intent to GMRS was that analogue frequency inversion scrambling fell within the purview of existing authorized F3 and A3 emission types, nothing more. No recognition of, or expression of any Commission intent whatsoever was made with respect to then Section 95.83(c)(10).

B. Secondly, the only connection to GMRS was made by unidentified "representatives", not the Commission. This sole and rather oblique reference to GMRS was attributed to vague, unidentified "Representatives of the General Mobile and various Industrial Services"¹⁵ (manufacturing lobbyists?). It clearly was not a pronouncement by the Federal

¹⁰ Comments of Michael, Lori, Nancy, and Tommy Sheldon.

¹¹ Comments of Garmin, International, Inc, V., pp. 16 – 22.

Further Comments of Uniden America, pp. 3 – 7.

¹² Uniden Further Comments at pg. 5.

¹³ Uniden Further Comments at pg. 5.

¹⁴ Garmin Comments, pg. 19, footnote 53.

¹⁵ Uniden Further Comments at pg. 7.

Garmin Comments at pg. 19.

Communications Commission at all, and only addressed that that emission types A3 and F3 were adequate for inversion scrambling technology.

C. Thirdly, it further significant to note that the Commission never acted in Docket 211424 to make any changes to the GMRS Rules in any way. The fact that digital emissions were never authorized in GMRS for police scrambling could well be argued as an indication that the Commission concluded scrambling was not appropriate in a Personal Radio Service. After all, the "Representatives" reference was cited as basis for the Commission to not take action with respect to GMRS. In the absence of any reference to or recognition of the existing GMRS *operating* rules, if they already prohibited such scrambling in GMRS, then they continued to do so (no change).

D. Fourthly, reference to FCC actions in 1977 and 1978 in authorizing digital scrambling in the Police Radio Service is misplaced. At that time police departments were eligible to obtain licenses in GMRS, thus considerations for police scrambling could potentially apply to some GMRS operations. All of this changed in Docket 87-265 when the full Commission decided that police departments would henceforth be ineligible for licenses in GMRS. In refining and recodifying the language that now exists in Sections 95.181(3) and 95.183(4) the full Commission acted to create a future where no police licenses would be issued in GMRS. In such a context any need for fostering privacy for police communications would henceforth be met in other services where additional provisions for scrambling had already been adopted.

E. Fifthly, turning to the clear intent of the rule, the arguments of Garmin and Uniden are likewise in error. Section 95.183(a)(4) explicitly states that 10-codes are allowed. Thus it is irrefutably clear that even plain, spoken voice can constitute "coded messages" or "hidden meanings". There is no question that the Commission has always intended that GMRS transmissions not only be received, but *understood*.

Of course this makes sense in the context of other rules, most notably Sections 95.7(a) and (b).

"§95.3 Channel sharing.

(a) Channels or channel pairs ... are available to GMRS systems only on a shared basis and will not be assigned for the exclusive use of any licensee. All station operators and GMRS system licensees must cooperate in the selection and use of channels to reduce interference and to make the most effective use of the facilities.

(b) Licensees of GMRS systems suffering or causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements."

This has been a basic and fundamental characteristic of GMRS since the beginning in 1948. How are users to carry out these precepts if they are not able to communicate with others? Communication is not possible if your message cannot be understood. How are you to identify

the source of harmful interference if the transmissions cannot be understood? In an emergency how are you to communicate with others (either to interrupt to request use of the channel, or even to be heard calling for help) if the other party can't both receive and understand what you are saying?

Garmin is correct that the roots of the rules cited as prohibiting scrambling extend back to the 1960s.¹⁶ "Plain language" likewise clearly evidences FCC intent that communications be not just received, but also *understandable*. The same contextual relation to sharing and cooperation mandates also applies ever since that time. These rules clearly go beyond the mere potential ability to receive and mandate that transmissions must be understandable.

F. Sixthly, argument is advanced that inversion scrambling is not intended to be barred because it's not proprietary. Equipment is claimed to be obtainable to decode voice inversion. Whether such equipment is obtainable and to what extent is immaterial. Voice inversion transmissions are "coded" and have "hidden meanings" because the vast majority of GMRS users cannot decode them and are not able to understand them. The net effect of such an argument would be to mandate that all GMRS equipment include such inversion decoders. Such an interpretation of the Part 95 Rules stretches far beyond the limits of reason and produces an absurd result.

G. Uniden refers to "strong consumer demand" in page 2 of its Further Comments. In my many years of experience in GMRS throughout the United States I have observed no such "strong consumer demand" for voice inversion scrambling. In any event, such an argument fails to acknowledge what is in the public interest, as opposed to certain manufacturers' interests. I have already addressed several strong reasons why scrambling is not in the public interest and should be banned in my original comments and will not reiterate them here.

Section 183(a)(6) absolutely prohibits "sound effects or material to amuse or entertain". Both Uniden and Garmin equipment routinely includes such features. Perhaps they could argue "strong consumer demand" for these features as well. But that is clearly not in the public interest, and FCC certification of any combination radios with such features functional on any GMRS frequency should be immediately withdrawn. Certification of such equipment is no more an indication of FCC intent regarding the Sound Effects Rule than the Uniden and Garmin cited FCC generic land mobile emissions text above regarding coded messages and hidden meanings.

H. Uniden states, at page 3 of its Further Comments, that use of voice inversion scrambling is utilized "without bothering GMRS users in the area." This statement is absolutely false. Those subjected to voice inversion transmission receive highly distracting and annoying "Donald Duck" sounds, but lacking any intelligibility at all. Donald Duck voice is at least partially understandable with effort. Voice inversion is not. To the human ear inversion sounds significantly louder than plain voice modulation. To most GMRS operators it constitutes "sound effects" which have been barred for some 45 years at least.¹⁷

¹⁶ Garmin Comments, at pg. 18 – 19.

¹⁷ Section 95.183(a)(6).

Uniden states at page 4 of its Further Comments, "'Voice inversion' does not hide anything." That claim is absurd and fatuous on its face. Voice inversion completely obscures all content of the transmission from all others not similarly equipped. Most times its difficult to identify even if the sender is a man, woman or child.

Uniden states, at pages 4 –5 of its Further Comments, that voice inversion is "a popular feature" which "enhances the utility of GMRS" "and carries no corresponding harm". Such unsupported mere conclusions are directly contrary to my many years of operating experience and I point out their inaccuracy.

I. On page 7 of their Further Comments Uniden erects a "straw man" argument with respect to digital scrambling and potential for interference. The fact that the Commission took no action to change the Part 95 Rules to make digital scrambling emissions permissible, or any possible reasoning behind taking no action, has no bearing on the issue of different analog voice inversion. One significant point appears inside this "straw man" argument however.

"Thus the real reason for prohibiting coded messages in GMRS was not to assure that everyone could listen to everyone else's messages, as in citizen's band ("CB") radio."

In the 1960s, I was a licensee and, as required by the Rules at that time, I subscribed to the U.S. Government Printing Office edition containing Part 19, later Part 95. I received regular updates and was familiar with the Rules. As I recall the coded messages rule applied equally to both Class A and Class D Citizens' Radio. Uniden is correct about the intent as it applied to Class D ("CB"). Its attempt to differentiate Class A (GMRS) is mistaken.

in suggesting any difference in intent between the two classes of Citizens' Radio (now Personal Radio Services).

J. Garmin states, at pp. 21 –2 of its Comments, that "The *NPRM* does not cite any examples in which analog voice scrambling has caused harm or has interfered with the intended functionality of GMRS radios. It further asserts, "Such transmissions [scrambled] ... do not interfere with the channel-sharing protocols established for GMRS and FRS."¹⁸ This statement is flatly incredible, with no connection to operating reality.

I will cite such an example here in the Chicago north suburban area. 650 has been a popular channel here many years and has been served by a repeater system which provides good metropolitan coverage. Recently (last year or a bit more) a new repeater system has appeared on .650. All communications are voice inversion scrambled. Numerous other GMRS users on .650 have complained about the very disruptive effect of the sounds produced by this voice inverted system. Efforts to identify the users or the system identity have failed.

¹⁸ Garmin Comments, at Page 22.

The net effect has been complete abandonment of .650 by the heretofore numerous other users. Perhaps this is what is meant by "strong consumer demand"? But the ability to drive all others off of a channel is not in the public interest and directly contrary to the Rules and the Commission's intent for the Service since the beginning. Analog voice scrambling has done just what Garmin says it will not do, caused harm and interfered with intended functionality of GMRS radios here in the north suburban area of Chicago. The same principles apply throughout the United States.

This is not surprising since scrambling flies right in the face of the prime principles of channel sharing and cooperation. It has proven to only serve to encourage some users to ignore other cochannel operations.

K. Garmin also fails to perceive the problem with scrambling with reference to emergency messages. The issue is not the sender of an emergency message. Scrambling isolates all of its users and eliminates them from the pool of potential receivers of a request for help. As a GMRS user who suffered a life threatening emergency in bitter cold conditions (more than 20 below zero) and was rescued by use of my portable radio through a repeater in Indiana, I can tell you such considerations can rise to critical proportions. Examples of beneficial emergency use of FRS would not have been possible in an inversion scrambled environment.¹⁹

L. As the potential for interference is substantial, and the noise making effect (Donald Duck, but unintelligible) is high, grandfathering of scrambling is not appropriate. I doubt that any instances exist which would justify continued use of such features, but any potential exceptions could be reviewed by way of rule waiver. Existing equipment could certainly continue to be utilized absent only scrambling. Garmin has failed to take into account methods to disable such a feature while leaving all other functionality intact.

7. GPS Data & Text.

A. Garmin has apparently been a leader in developing GPS navigation devices bundled together with 2-way radio capability. It has chosen to do this in combination with FRS and GMRS and states it has sold a substantial number of such units *worldwide*.

Thus Garmin's vested interest then is in selling more of such devices, as contrasted to GMRS users who must live with the results of data and text messages in a voice monitored radio service. While I am favor of making such important location technology widely available to the public, considerations of where it would best be located within the radio spectrum and consideration of interference potential to GMRS must also be a part of gauging the public interest, convenience and necessity.

B. Garmin's sales are worldwide. To the extent that Garmin argues benefits from its products in areas not regulated by the Federal Communications Commission, such matters are immaterial and have no place in this Docket. The Commission's consideration should be focused rather on the context of weighing the overall public interest where it exerts its authority.

¹⁹ Comments of Joe Leikhim, at bottom of pg. 1.

C. Other Comments filed in this Docket have shown that, for the proposed function Garmin advocates, other, much more suitable spectrum is available which would provide significantly greater capability, such as MURS.²⁰ Over the years I have had operating experience in VHF mobile communications in the Police, Fire and Domestic Public Land Mobile RadioTelephone Services. There is no question that, for portable devices especially, VHF provides substantially greater range than UHF. Operation in MURS, for example would yield much better performance.

In this connection I note that much of the testimonial materials from Garmin centered around desert military operations. Relatively flat terrain, completely unobstructed by buildings, vegetation, etc. approaches ideal conditions for UHF. In real world conditions in the United States, the benefits to be gained from VHF as opposed to UHF will be even greater. Application of the developed Garmin technology to VHF, as opposed to UHF, should incur little delay.

D. GMRS has only 7 interstitial channels, many of which are already crowded with FRS users. Further degradation of the only alternative to repeater use raises serious concerns for GMR. And, if Uniden has its way, this situation will be massively exacerbated.

Garmin proposes location and text data on just GMRS interstitial frequencies. Uniden, not satisfied with its massive proposals to subsume GMRS into FRS, seeks to expand such operations to all of the repeater output 462 MHz frequencies and double burst length as well. One can only assume that the motivation for such a position is to hasten the death of repeater operations in order to take over all of GMRS for itself. No justification for such outrageously expanded suggestions is submitted.

Concerns regarding GPS/text interference to GMRS "direct" (single frequency) operations also involve lack of planning for an absolute minimum of interference to GMRS operations. Garmin argues that that its data and text devices should be allowed to locate in GMRS based, in part, on limited burst time.

I have already addressed the fallacy of such argument in my own Comments. Anyone with experience in GMRS and/or FRS can tell you that such a burst limitation does not eliminate interference, annoyance or discouragement of voice monitoring. It cannot be emphasized too much that voice monitoring is critical in a shared radio service where utility rests on cooperation that has traditionally been mandated. See Sections 95.7(a) and (b) of the FCC Rules and Regulations. Garmin's argument regarding lack of complaint fails to acknowledge users' experience in Personal Radio Services for more than 45 years.

Noise is greatly detrimental in a voice service, period. The "Roger Beep" feature so common in FRS is a perfect example and is similarly limited in burst length. It is highly distracting and detrimental none-the-less. The Commission has recognized the plain truth of this

²⁰ Comments of the Personal Radio Steering Group, Inc., at ¶79, pg. 15.
Comments of Steven James Robeson (31 July), at pg. 4.

fact first, in promulgating rules in Part 95 more than 45 years ago prohibiting non voice noise-making, and, currently, in addressing the problem of scrambling and voice inversion in GMRS.

I also am concerned about the lack of discussion of minimizing deviation level so as to mitigate distraction to voice monitoring listeners as much as feasibly possible. Not satisfied with seeking 5 watts on all GMRS interstitials, Garmin wants to double bandwidth of data and text to match voice. Garmin ignores the effect of greater deviation and corresponding dramatic increase of volume level to voice monitoring users. Interference is analyzed only as to other nearby channels. Garmin fails to mention increased cochannel interference.

Even Garmin has not, to date, complained that the existing, more limited configuration it currently builds, is unsatisfactory in any way.

E. Finally, while I appreciate the utility of the Garmin GPS location capabilities, I do not agree that there is any need also for text capabilities. As pointed out in my original Comments, text is not a humanly intuitive form of transmitting emergencies or requests for help. If anything, it's counterintuitive when people are hurt, stressed, excited, etc. The potential for delay and error, as opposed to plain voice, is substantial.

GMRS is, and always has been, a Personal Radio Service to "communicate two-way voice messages".²¹ Anything that interferes with this basic, fundamental purpose is seriously detrimental to the public interest. Cellular already adequately provides for texting. In addition, adding text capability can serve only to greatly increase potential interference to GMRS voice communications. I conclude there is absolutely no justification at all for allowing text messages in addition to GPS location data. Data texting should remain on FRS channels, or take place elsewhere, where it will not clash with GMRS voice messages.

Therefore I suggest that placement of the Garmin location technology in GMRS is not the best solution, especially when a better alternative is readily available in VHF for the Garmin data operation. This coupled with the substantial interference potential, causes me to conclude that placement in GMRS is not in the best public interest.

F. Motorola's comments, while recognizing the benefit of GPS location capabilities, are disappointing. In view of its cited desirability of greater range, Motorola fails to analyze spectrum alternatives or what would provide the best capabilities. And the company neglects to consider any impingement upon established GMRS uses, customs and protocols. At least Motorola recognizes the potential for abuses of such features by businesses and other "commercial" users who have other alternatives.

These concerns of the GMRS community are legitimate and well founded. If, none-the-less, the Commission decides to proceed with respect to GMRS, I suggest the Commission proceed as follows. Only the minimum number of GMRS interstitial channels immediately necessary be authorized, no texting be allowed, and that parallel provision for such operations in MURS and/or other suitable lower frequencies be immediately made. Limit configuration to

²¹ See Sections 95.181(a), (c), and (d).

existing FRS parameters, and assure that any such operation authorized is not just merely proprietary, but available to all users alike.

8. Portable Power Levels.

A. In my original Comments I argued at some length that application of Specific Absorption Rate (SAR) considerations to GMRS portables made no sense. Put another way, "the argument is unfounded",²² as expressed by Steven James Robeson. Mr. Robeson is an emergency department nurse²³ and licensed in both GMRS and Amateur Radio. His observations on "human RF exposure limits" are much more informed than the average member of the public. After reading his observations I'm more convinced than ever that SAR application to GMRS portables is a mere red herring excuse.²⁴

B. In general I concur with most of the argument of Garmin regarding the lack of any basis for any regulation of power of portable devices in GMRS. Its comments regarding Specific Absorption Rate are especially noteworthy regarding comparison to cellular telephone, where transmission times are vastly greater than GMRS (with its push to talk duty cycle).

C. I am frankly surprised by the level of law enforcement use Garmin claims, particularly in surveillance applications. Most such law enforcement operations moved to far more secure forms of communications decades ago to prevent reception or monitoring by the targets of such activities.

I remind the Commission that prior experience with licensing law enforcement use in GMRS had severe problems. For example, in the late 1970s the Maryland State Police sought, and was ultimately granted, a license to operate in GMRS for the State Police detail protecting the governor. A waiver was also granted allowing use of all 8 channel pairs, but with the explicit condition on the license that all operations had to be on a shared basis with other licensees.

The State Police immediately began ignoring this limitation and all other users. State Police operations essentially put the REACT repeater operation in Annapolis to a temporary end. Meetings with State Police officials revealed an attitude of, "We're the police, you don't matter." I was present at one such meeting with a high ranking official and observed this personally. Ultimately the Commission had to act on the numerous complaints to end the usurpation by the Maryland State Police and the operation was moved to other frequencies elsewhere.

Law enforcement operations of a critical nature are diametrically opposed to the concept of a shared Personal Radio Service. Requiring a license for every individual involved in such

²² Comments of Steven James Robeson (31 July). At pp. 1 –2.

²³ Robeson Comments, at pg. 7.

²⁴ Mr. Robeson submitted 2 sets of Comments. The first concerned the issue of licensing, while the second addressed numerous other aspects of the NPRM. His comments are based on real operating experience, are well thought out and reasoned, and detailed. While I don't know Mr. Robeson, I largely concur with his reasoning and points and commend them to the Commission's careful examination. Pay attention to the voice of reason and experience.

uses is a major (perhaps the only) method to adequately assure that GMRS operates in a vastly different environment than dedicated law enforcement radio channels.

D. Motorola points out that, "the existing rules provide specifications for 'mobile' devices."²⁵ GMRS portables have always heretofore been included in the definition of a mobile station (See Section 95.23(a)) and regulated as such. This is consistent with the Part 90 services.

Many Land Mobile portables (including GMRS) have capability to be connected to external antennas. This is especially prevalent in GMRS, where many individuals take advantage of having a single piece of equipment serve multiple functions, operating from the car, and at home, as well as hand-held. Therefore GMRS portables routinely are utilized with gain antennas, both mobile and "base" style. For base antennas, Yagis are most prevalent, both for compact size and economical cost. Even the smallest Yagi antenna exceeds 7 db gain, and some have even greater than 12 db. Mobile antennas are often in the 3.5 to 5 db gain range.

For this reason regulation by means of ERP is not practical for GMRS. It would be impossible for manufacturers to determine if their equipment could meet an ERP regulation. Regulation by ERP and would be especially confusing to users, who lack the knowledge or technical sophistication to make calculations of ERP.

The existing regulation of GMRS portables as "mobile" stations has proved adequate and has facilitated GMRS usage of Land Mobile equipment over the years. It should not be disturbed. The comments of Motorola apply solely to portables while operated hand held with no external antenna. But other portable uses have been wide spread in GMRS for many years.

E. Uniden appears to seek to curtail GMRS portables only in an overall scheme to absorb GMRS for its own FRS market. It cites no logical reason for doing so and fails to discuss impact on GMRS operations at all.

9. Narrowband. Garmin is certainly correct in its observations that reduced bandwidth will reduce quality and that there is no current need to do so at this time. Motorola's analysis that "the benefits are significantly outweighed by them inherent costs"²⁶ is clearly well thought out and reasoned. Motorola and Garmin agree that there is no current need for additional spectrum in GMRS to justify such severe action, which is right on target.

That is not to say that narrow banding should never take place in GMRS. Eventual increase in the number of channels is the guarantee of a viable future for GMRS in the long run. Lacking any critical, immediate need for more channels, the transition should be allowed to take place naturally, as available Land Mobile equipment changes and natural attrition takes place over a significant number of years.

Uniden provides no justification for mandating narrow band whatsoever, other than to spuriously "harmonize" GMRS with FRS. It utterly fails to consider the financial impact on

²⁵ Comments of Motorola, Inc., at pg. 6.

²⁶ Comments of Motorola, Inc., at pg. 6.

individuals and families. Its Further Comments appear to consider solely its own interests, to the exclusion of the public.

10. Combination Radios. It's clear, both from the NPRM, as well numerous comments, that the real problem is the marketing of cheap, unlicensed radios that also contain transmit capability on frequencies in other radio services requiring a license. The Commission is to be lauded for addressing the issue now, before the Genie gets out of the bottle, so to speak, at least with respect to Parts 80 and 90. All too often over the years the FCC has waited to confront a problem *after* it has become rampant. It is to be commended in avoiding this draconian result yet again in this instance.

A. Garmin argues that GMRS and FRS overlap in some uses. But the same is true (perhaps even more so) with respect to GMRS and the Amateur Radio Service, and the Business Radio Service. Unlicensed combination radios are no more appropriate including such frequencies either. Radios containing licensed frequencies, including VHF Marine, GMRS, and Part 90 Land Mobile, should be sold as equipment clearly requiring the discipline and responsibility that licensing connotes. They should not be sold under the misleading cloak of unlicensed, and effectively unregulated, operation.

The Commission itself has recognized the problem of combining GMRS frequencies in FRS radios and the resulting unlicensed operations. Garmin's position is, effectively, just look the other way and ignore the problem. That is irresponsible and clearly not in the public interest. As the Commission has noted, this problem of fostering improper and unlicensed use of GMRS is serious and substantial. It needs to be address and corrected now, before matters deteriorate further. It needs to be proactively avoided for Marine and Land Mobile *before* serious consequences impair public interest in other services.

B. How may this be accomplished? To be sure some comments have pointed out potential utility in combining unlicensed FRS channels with other services in a single piece of equipment.²⁷ However, allowing such an exception runs too much risk of emasculating any efforts to address the problem. I do not believe any exception can be so structured that it would not become the rule, rather than the exception. FRS has now developed way too far as an effectively unregulated free for all, and the genie is out of the bottle and cannot be put back in. Sale of radios containing FRS channels can only serve to promote similar attitudes towards other frequencies in such equipment.

Therefore, while combination radios may, in some instances, be convenient, the risk is too high. Providing for exceptions is too susceptible to abuse and not feasible. The only effective solution is to ban all combination radios combining both built-in FRS frequencies and channels in other radios services, including Parts 80, 90, 95A, and 97. The Commission can no longer afford to ignore the lessons of recent experience with such marketing and equipment. To do so would be irresponsible and failing in the FCC's duty to safeguard the public interest.

²⁷ See, for example, the Comments of the Radio Technical Commission for Maritime Services, pg. 2.

C. Motorola recognizes that the Commission is correct to be concerned about the effect of combination radios and the potential for disruption in other services. However it cites convenience for licensed users in other services as a justification to do nothing. As I have pointed out above, such an exception is very likely to become the rule, and obviate any attempts to deal with the problem.

I recognize that Motorola is a major manufacturer of combination FRS/GMRS radios as well as equipment in many other radio services. Therefore restriction on combination radios could negatively affect its marketing. Motorola directly conflicts with the Commission's observation that combination FRS/GMRS radios have created a substantial problem of unlicensed operation on GMRS frequencies and potentially in other services, such as Marine, as well. The Commission is right that there is a problem in this regard. It's left up to the Commission to address this problem, even if doing so could affect the interests of existing marketing.

D. Uniden's Further Comments are far more deleterious. In effect they seek to subsume GMRS into the Family Radio Service, destroying it forever.

Consider that almost all GMRS users consider FRS radios "toys". Why is this? There are several critical reasons why such an opinion is so pervasive in GMRS, Amateur and Land Mobile. Each of these reasons serves to distinguish GMRS from FRS, and relate it more closely akin to Part 90 and 97 operations.

FRS radios are low power and extremely short range. Compared to Parts 80, 95A, 90 and 97, their very limited capability makes them "toys" by comparison. FRS radios are unlicensed and there is virtually no regulation of their use at all. FRS channels are a complete free for all, as contrasted to highly organized, mostly disciplined operations in Parts 80, 90, 95A and 97. Once again the unregulated, undisciplined chaotic nature of FRS makes it a "toy" by comparison.

FRS operation by very small children (often less than 1st grade level) is commonplace and very frequently completely unsupervised. In effect FRS radios are used as entertainment to occupy such small children's attention, similar to television. Often the transmissions of such very small children are unintelligible to adults (other than familiar family members). Once again such uses paint the picture of "toy" radios.

Most FRS radios have a host of various noise making effects solely for purposes of amusement or entertainment, completely at odds with operations in Parts 80, 90, and 95A. They are clearly "toys" in this aspect as well. Such FRS combination radio features serve merely as marketing devices, create distraction and interference, and are not functional for any legitimate purpose, such as selective calling, etc. This has long been blatantly illegal in GMRS. Clearly the interests of such manufacturers dramatically diverge from the public.

These uses of unlicensed FRS radios and manner of behavior they foster are accommodated in Parts 95B and 15. They have no place in Parts 80, 90, 95A, and 97.

E. But Uniden would seek to expand all of this cacophony as much as possible, rather than retard it in any way. While such an extreme position may be in the interests of Uniden to sell more of its equipment, it is directly contrary to the public interest or the interests of radio operators in all of these other utilitarian services.

In paragraph 3 of its Combination Radios Comments section, pg. 8, Uniden cites several negative effects of combination radios. All of these factors provide sound basis for ending or restricting such combinations, not only as to GMRS, but also VHF Marine, Land Mobile and Amateur. Does Uniden suggest changes to Rules in those other services to facilitate its sale of combination equipment? Of course not.

But that is precisely what Uniden does for GMRS, seek to alter the Rules (and drastically increase FRS radio capabilities). That is no more in the public interest to do so for GMRS than any of these other important radios services. The proposals of Uniden are tantamount to abolishing GMRS and making it into a carbon copy of FRS. (Note, also, that Uniden does advocate unfettered invasion of combination radios into Parts 80 and 90 as well.)

Uniden, at the same time, proposes a drastic reduction in the power of GMRS portables and drastic increase in the power of FRS portables, so that FRS users may compete for channel time on an even basis with GMRS operators. They also propose full data operation for FRS. Then they have the temerity to suggest a secondary-use basis to GMRS.

F. To date FRS combination radios have been successfully manufactured with different technical standards for different channels for 8 years. Obviously such configurations are simple and easy to accomplish. Land Mobile equipment has accommodated such technical variations for years. Arguments of a need to make all channels identical in capability are completely specious.

G. The channels Uniden wishes to further invade are GMRS repeater output frequencies. Hordes of toy radio users at vastly higher power on these channels can have only one result, drastic curtailment of repeater coverage and communications reliability. In the NPRM the Commission raised the question of keeping repeater output power down in order to encourage spectral efficiency. The Uniden proposals are diametrically opposed to this goal and will result in channel wars and increased repeater power in an effort to maintain communications viability in a hostile FRS world.

In my own system I strive to encourage single-frequency "direct" operations when ever possible, as an alternative to repeater utilization. Such custom is long and well established in the GMRS community. It is directly in harmony with the Commission's stated concerns regarding spectral efficiency. Usually direct is conducted on the repeater output frequency so that repeater calls may not be missed while operating in direct mode.

If Uniden usurpation of repeater output channels is permitted to take place, the "direct" alternative will be drastically curtailed, if not completely eliminated. Interference from toy FRS radios will result in reconfiguring my system to provide maximum output power, height, and

antenna gain in order to strive for communications reliability. None of this is in the interests of spectral efficiency, the utility of GMRS, or most effective use of frequencies.

H. Uniden summarily dismisses any consideration of interference in but a single sentence at the top of page 9 of its Further Comments. Note Uniden doesn't mention their imposed parity between GMRS and FRS portables. They fail to even consider any effect on GMRS repeater operations. They neglect to address substantial interference issues of overlaying narrowband FRS equipment with wide band GMRS. In short the Uniden proposal to hijack GMRS is ill conceived, violently destructive to the GMRS, and will promote chaos and massive interference. And Uniden has made no showing at all that the existing provisions for FRS are in any way inadequate. Nor has the Commission ever suggested that the spectrum resources it has provided for FRS were not properly planned and sufficient.

As further evidence of Uniden's parochial, selfish attitude, consider that it would mandate all GMRS channels shift to narrow band. Thus GMRS users would all be required to buy new equipment. And buy lower power portables. And have no external antennas. Uniden seeks not only to hijack GMRS, but also to artificially mandate a new market for its own selfish reasons. None of this is remotely in the public interest.

11. Line A.

A. No reason whatsoever is given for the drastic curtailment of all GMRS in the northern US (near Canada). GMRS has successfully co-existed with Canadian radio uses for more than 50 years. The NPRM references "Canada's license-exempt radios operating in this band",²⁸ and it's my understanding that Canada now has a parallel personal radio service to the U.S. If anything, there is far less need for restriction near Canada today than ever before.

B. The area affected by this proposal is huge. 14 states are included (plus Alaska for Line C). Generally speaking the following areas would be deprived of all but a shadow of current GMRS capabilities:

Alaska – Roughly 75 miles west of Canada, plus all of the southern panhandle, including Juneau.

Washington – roughly northern 40%, from Seattle-Tacoma airport north.

Idaho – Roughly northern 72 miles.

Montana – Roughly northern 75 miles, including Havre, Malta and Glasgow.

North Dakota – Roughly northern 75 miles, including Minot.

Minnesota – Roughly northern 75 miles, including Duluth.

Wisconsin – Northern fringe, including all of US Route 2.

Michigan – Upper Peninsula (except extreme SW tip), including Sault Saint Marie, Escanaba and Ironwood; Lower Peninsula east of Iona, including Lansing, Flint and Detroit.

Indiana – Eastern half, 53 miles south of Michigan border, including Fort Wayne.

Ohio – Roughly northern 1/4, including Toledo, Cleveland and Akron.

Pennsylvania – Northwest corner, including Meadville, Erie and Warren.

²⁸ NPRM, at paragraph 32.

New York – NW corner, affecting 30 counties, including Buffalo, Rochester, Syracuse and Warrensburg.

Vermont – Roughly northern 2/3rds, including Montpelier.

New Hampshire – Roughly northern 1/2, including Plymouth.

Maine – Roughly northern 2/3rds, including Augusta and Bangor.

All of these people would be deprived of any meaningful GMRS with no basis or justification at all. This clearly is contrary to public interest.

12. Specific Rule Changes. To the extent that any specific rule changes conflict with my original or Reply Comments herein, I oppose the same for the reasons stated.

13. Conclusion. All but a handful of Comments submitted in this proceeding address the General Mobile Radio Service (formerly Class A Citizens' Radio). These comments reveal that there has been no significant change in the manner in which users employ GMRS in recent years, traditional uses continue unabated. The current GMRS Rules and Regulations have served well and fostered viable, reliable and flexible communications capabilities for the American Public. They have provided a regulatory framework that has fostered healthy growth and development of GMRS to date. Public service, emergency and disaster communications have continued to be developed through General Mobile Radio and play a vital role in a myriad number of communities throughout the United States.

Virtually none of the contemplated Rules changes are appropriate or in the public interest, convenience or necessity. Most of the proposed changes would seriously reduce or eliminate important and useful characteristics of the service. Only a small number of the proposed changes are rational, in view of the nature and character of General Mobile Radio. Positive changes are enumerated below. All others should be withdrawn.

A. Licensing. The Federal Communications Commission should take immediate action in MD Docket 08-65 to reduce the GMRS total application fee to a reasonable level, no more than \$25-\$35 for 5 years. GMRS license terms may be extended to 10 years if the Commission feels that their burden is too great to handle every 5 years.

B. Rule Schema. Each of the Personal Radio Services should have its own separate SubPart, where all Rules for that service may be readily and efficiently found by members of the public and industry alike. Each of these SubParts would be best organized with operating rules first, followed by technical rules. Thus GMRS Rules would all appear in SubPart A, FRS Rules in SubPart B, R/C Rules in SubPart C, CB Rules in SubPart D, etc.

C. Technical Rules for Newer Technology. These should be listed in addition to, and not in lieu of, older specifications for vintage equipment, which remains prevalent in the GMRS user community.

D. Small Base and Control Stations. Power specifications for these stations should be changed from ERP to output. Users can readily understand, and therefore comply with, simple power requirements of this nature, rather than varying esoteric ERP calculations.

E. Fixed Stations. I am not aware of any comments regarding fixed operations grandfathered from the pre-1968 era. Section 95.29(g) may therefore be eliminated from the Rules.

F. Combination Radios. Radios which are configured with frequencies that are non licensed or licensed by rule, such as, but not limited to, FRS, should be immediately barred from additionally including any transmit capability on frequencies in any other radio service. This includes, but is not limited to, services in Parts 80, 90, 95A, and 97.

G. Scrambling. The GMRS Rules should be further clarified to absolutely remove any perceived doubt that scrambling is barred in GMRS, including voice inversion.

H. Other. **NO** other changes should be made to the GMRS Rules and Regulations. The existing Rules have been refined over time and suit the service very well.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, P. Randall Knowles, hereby certify that, on the 20th day of September, 2010, I served copies of these *Reply Comments of P. Randall Knowles* upon each of the listed parties below, by First Class Mail, postage prepaid.

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