

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
1998 Biennial Regulatory Review --) WT Docket No. 98-182
47 C.F.R. Part 90 - Private Land Mobile) RM-9222
Radio Services)
)
Replacement of Part 90 by Part 88 to Revise) PR Docket No. 92-235
the Private Land Mobile Radio Services and)
Modify the Policies Governing Them)
and)
Examination of the Exclusivity and Frequency)
Assignment Policies of the Private Land)
Mobile Services)

PETITION FOR RECONSIDERATION

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I. BACKGROUND OF THE COMMENTER.

1. The Personal Radio Steering Group, Inc. (PRSG) is an all-volunteer, not-for-profit Michigan corporation established in 1980 by licensees in the General Mobile Radio Service (GMRS, FCC Part 95-A) to provide services to and to serve as an advocate for users of the FCC's personal radio services.

2. The PRSG has published more than 300 different guides to GMRS licensing, technology and operating practices in the various personal radio services. PRSG's flagship publication, the GMRS NATIONAL REPEATER GUIDE, lists the more than 3,500 GMRS repeaters, their sponsors, technical characteristics and detailed coverage information. The GUIDE has become the essential reference to this cooperative, nonprofit communications network for licensed private individuals. PRSG also works closely with major land mobile equipment manufacturers to disseminate instructional materials for radio purchasers.

II. THE F.C.C. PROPOSED TO DELETE THE REQUIREMENT FOR LICENSING FOR CERTAIN SPECIFIC FREQUENCIES.

3. In its NOTICE OF PROPOSED RULEMAKING (WT Docket No. 98-182, adopted September 30, 1998, released October 20, 1998) (NPRM), the Commission noted (at paragraph 32):

"... Thus, the combination of two circumstances: (1) the existence of our current proposal to eliminate the coordination requirement for these frequencies; and (2) the claim that most users of these frequencies are probably not licensed, cause us now to invite comments on whether these five frequencies should be further deregulated by eliminating the requirement that they be licensed. Should we decide to take this action, we would reallocate the frequencies from Part 90 to a radio service that does not require licensing, such as the Citizens Band, Low Power Radio, or Family Radio Services."

4. Significantly, the NPRM proposed changes only to the requirement that these stations must be licensed. Specifically, the NPRM did not propose to

make other changes in maximum permissible transmitter power (governed by 90.35(c)(11 and 14)), in the permissibility of interconnection of radios on these frequencies with the public switched telephone network (PSTN) (governed by 90.476(b) and 90.477(d)(3)) , or in the maximum permissible distance between the control point and the center of the radiating portion of the antenna (governed by 90.35(c)(11 and 14)). In the absence of the FCC having proposed such changes, this PETITION is the first opportunity during which PRSG can raise these issues.

III. SPECIFYING MAXIMUM TRANSMITTER POWER IN TERMS OF "EFFECTIVE RADIATED POWER" IS CONFUSING FOR THE PUBLIC TO UNDERSTAND.

5. In its NPRM (at paragraph 31), the FCC noted:

"... We have been receiving a significant number of inquiries from the public concerning the use of one-watt and two-watt, hand-held portable radios that are becoming increasingly available from retail and mail order sources. The radios are mostly single-channel or two-channel radios, low-cost, and operate on one or more of six low power frequencies assigned to the Industrial/Business Pool."

6. Because FCC Rules place no restriction on the detachability of the antenna from these radios, users have been permitted to connect them to external antennas for vehicular and base-station use. These external antennas potentially provide significant (6 dB or more) antenna gain. Thus, base station-type installations were possible (disregarding feedline and other losses) of 8 Watts ERP (effective radiated power) or more on two of these frequencies (154.570 MHz and 154.600 MHz). More modest gains (typically 3 dB or more) are also possible in vehicular installations, resulting in 4 Watts ERP or more.

7. The REPORT AND ORDER (R&O) in this Docket adopts a transmitter power limit based solely on ERP (effective radiated power). This is a concept that is difficult for the typical citizen user to understand or calculate, and is nearly impossible to measure directly.

8. For example, the typical "rubber duckie" antenna usually supplied with a hand-held radio has a net loss in efficiency (relative to a quarterwave groundplane) of perhaps 3 dB to 10 dB. Antennas routinely available as original equipment, or as after-market replacements, are frequently imprecise about their relative gain or loss, or even lacking this information altogether. Specifically, loss-factors for "rubber duckie" antennas are rarely given, and gain or loss factors for vehicular and base station antennas routinely do not include losses due to the feedline and the coaxial connectors needed to connect the radio to the antenna.

9. Because of this confusion and imprecision, the operator of a MURS station could reasonably question if it is permissible to use a radio with a transmitter rated at four-watts of output power, transmitting into a "rubber duckie" antenna that most likely has at least a 3 dB loss factor. (We note here that the NPRM specifically mentions radios that have mostly one-watt or two-watt transmitters, but the MURS rules specify no maximum permissible transmitter output power.)

10. In addition, 95.649 states:

"No CB, R/C, LPRS, FRS, MICS, MURS or WMTS unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limits specified in 95.639."

Rule 95.639(h) states:

"No MURS unit, under any condition of modulation, shall exceed 2 W effective radiated power (ERP)."

11. Even just a one watt radio, if connected to a high-gain (greater than 6 dB) antenna, would exceed the two-watt ERP limit. The radio itself has no way of knowing what its ERP is, and (for the reasons discussed above) the typical user may have difficulty calculating ERP.

12. For these reasons, PRSG recommends that the FCC amend the MURS rules to replace reference to maximum ERP (95.639(h)) instead with reference to maximum transmitter OUTPUT power of 2 Watts. Furthermore, if the FCC wishes to retain an ERP limit as well, then this ERP level should be chosen to reflect what has long been possible and permissible for use on these same frequencies. The maximum ERP level that we would suggest is 5 Watts.

III.A. THE MAXIMUM E.R.P. LEVEL IN THE FAMILY RADIO SERVICE SHOULD NOT SERVE AS A PRECEDENT FOR THE MULTI USE RADIO SERVICE.

13. The FCC Rules for the Family Radio Service (at 95.637(d)) set a maximum power level of 0.500 Watts ERP. However, the FRS Rules (at 95.645) require that:

"The antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72-76 MHz band, must be an integral part of the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized."

FRS Rule 4 (95.194(c)) further prohibits attaching any antenna to an FRS unit other than the antenna originally certified for that unit:

"You may not attach any antenna, power amplifier, or other apparatus to an FRS unit that has not been FCC certified as part of that FRS unit. There are no exceptions to this rule and attaching any such apparatus to an FRS unit cancels the FCC certification and voids everyone's authority to operate the unit in the FRS."

14. Under these limitations, specifying maximum power for an FRS unit in terms of ERP is reasonable. The manufacturer itself can determine the appropriate configuration to limit the ERP into a known antenna. In MURS, there is no parallel requirement for antenna non-detachability, and no prohibition on the use of an external antenna. Therefore, PRSG believes that the MURS rules should reflect a transmitter output power restriction that is more easily understood by the citizen user public, and not specified exclusively in effective radiated power.

IV. MURS SHOULD CONTINUE TO BE CONFIGURED TO FULFILL MOBILE COMMUNICATIONS NEEDS.

15. The frequencies now authorized for use by MURS stations were formerly authorized under Part 90 of the FCC Rules (at 90.35(b)(3)) for use by mobile stations. These stations were permitted (at 90.35(c)(11 and 14)) to

"... provide the operational functions of a base or fixed station on a secondary basis to mobile service operations. Provided, that the separation between the control point and the center of the radiating portion of the antenna of any units so used does not exceed 8 m (25 ft.)."

16. In the NPRM, the FCC did not propose to change the basic mobile-operations-oriented nature of these frequencies, nor to remove the restriction on the distance between the radio control point and the center of the radiating portion of the antenna. (The latter provision effectively limited the maximum permissible height of the transmitter antenna of a station operating on those frequencies.)

17. From extensive PRSG monitoring experience, and from reports from others with similar monitoring experience, operations on the frequencies now allocated to the MURS (whether or not conducted under an FCC license) appear to have been in substantial (indeed, overwhelming) compliance with this mobile-oriented intent.

18. In the R&O and in the rules implementing the MURS, the FCC has deleted all references to the mobile-oriented operations and antenna height restrictions contained in Part 90. This will have the likely effect of expanding the use of these frequencies to include base-station-to-base-station use of a recreational nature.

19. Because of their advantageous antenna height, base stations have superior coverage range to that of the typical mobile (vehicular and handheld radio) units. Extensive use of the very limited number of frequencies available to MURS stations for point-to-point communications would dramatically reduced the utility of this service for mobile-oriented communications, and would substantially frustrate and disenfranchise both the existing users of these frequencies, and future users seeking viable mobile-oriented communications.

20. PRSG believes that the MURS rules should be rewritten so as to discourage the proliferation of this kind of point-to-point and purely recreational communications. There are several ways in which this could be accomplished, as we discuss below.

IV.A. THE MAXIMUM HEIGHT OF TRANSMITTING ANTENNAS SHOULD CONTINUE TO BE LIMITED.

21. PRSG recommends that the FCC amend the rules governing the operations of a MURS station to limit the antenna height of the transmitting antenna. We believe that a reasonable limit would be the same as that imposed by current FCC Rules on the operation of a station in the Citizens Band Radio Service: 20 feet above structure, or 60 feet above ground (subject to certain limitations near airports), whichever is the

greater.

IV.B. THE USE OF MURS FREQUENCIES AS THE INPUT OR OUTPUT FOR A MOBILE RELAY STATION SHOULD BE PROHIBITED.

22. FCC Rule 90.243(b) created provisions regulating the use of the frequencies now allocated to the MURS for mobile relay station operation. Use of a MURS frequency at a station transmitting from an advantageously located antenna would significantly reduce the availability of that same frequency for other mobile-oriented operations in the same area.

23. One currently permissible use of MURS frequencies would be in a packet switching network, where communications over an extended range could be accomplished by a station transmitting digital signals and operating in a store-and-forward mode and possibly in a "multi-hop" network. However, such an operation (which is directly comparable to a mobile relay station, just using a different emissions mode) could be highly disruptive to voice communications on the same channel(s).

24. Because MURS has only five frequencies available, PRSG believes that such repeater-type functions, whether of the type typically associated with a mobile relay station or with a store-and-forward packet station, would be incompatible with the intent of this service. PRSG therefore recommends that the FCC amend the MURS rules to prohibit a MURS station from automatically (whether simultaneously or in a time-delayed format) retransmitting the signal of any other station. This prohibition should include repeating transmissions from any service other than MURS, to prevent MURS transmitters from serving as repeaters for other services.

IV.C. THE F.C.C. SHOULD RECONSIDER THE NAME FOR THIS SERVICE.

25. "Multi Use" is an ambiguous term that fails to describe what PRSG feels should remain the primary intent of these frequencies: To facilitate communications among mobile (vehicular and handheld) units and between those units and a base station. We therefore suggest the a more appropriate name would be: Mobile Use Radio Service.

V. THE TECHNICAL STANDARDS SHOULD BE FURTHER SIMPLIFIED.

26. In the R&O, the FCC increased the permissible transmitter power of the three 151 MHz frequencies (151.820 MHz, 151.880 MHz, and 151.940 MHz), to bring it up to what is permissible on the two 154 MHz frequencies (154.570 MHz and 154.600 MHz). We believe that a further simplification is appropriate, to permit MURS stations operating on the three 151 MHz frequencies a bandwidth of 12.5 KHz instead of the current 11.25 KHz. The performance difference between these two limits is negligible, and maintaining separate permissible bandwidths is confusing to the public.

VI. THE FCC SHOULD PROHIBIT THE INTERCONNECTION OF ANY MURS STATION WITH THE PUBLIC SWITCHED TELEPHONE NETWORK.

27. FCC Rules 90.476 and 90.477 created geographic constraints on the interconnection with the public switched telephone network (PSTN) of any station transmitting on the three 151 MHz frequencies now allocated to MURS. PSTN interconnection was permitted on the two 154 MHz frequencies now allocated to MURS. In the instant R&O, the FCC imposes no restrictions on MURS interconnection with the PSTN.

28. PRSG believes that interconnection with the PSTN at MURS stations should be prohibited in the same manner and for the same reasons that such interconnection is prohibited in two other personal radio service, General Mobile Radio Service (Part 95 Subpart A) and Family Radio Service (Part 95 Subpart B).

29. Without such a prohibition, PRSG anticipates a proliferation of use of MURS stations for cordless telephones. Such use would detract from the utility of this radio service for other mobile-oriented communications, especially given the very limited number of channels available.

IN CONCLUSION:

30. For the reasons stated above, PRSG requests that the FCC reconsider the MURS rules, and amend or add those identified below in Appendix A.

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APPENDIX A.

REQUESTED CHANGES IN LANGUAGE IN THE F.C.C. RULES GOVERNING THE MULTI USE RADIO SERVICE

Part 95 should be amended in the following ways:

1. Section 95.401(f) (CB Rule 1. What Are the Citizens Band Radio Services?) should be replaced by:

(f) The Mobile-Use Radio Service (MURS)--a private, two-way, short-distance voice, data or image communications service for personal or business activities of the general public. The rules for this service are contained in subpart J of this part.

2. Section 95.601 (Basis and Purpose.) should be amended by revising the last sentence to read as follows:

* * * The Personal Radio Services are the GMRS (General Mobile Radio Service)--subpart A, the Family Radio Service (FRS)--subpart B, the R/C (Radio Control Radio Service)--subpart C, the CB (Citizens Band Radio Service)--subpart D, the Low Power Radio Service (LPRS)--subpart G, the Wireless Medical Telemetry Service (WMTS)--subpart H, the Medical Implants Communication Service (MICS)--subpart I, and the Mobile-Use Radio Service (MURS)--subpart J.

3. Section 95.603(g) (Certification Required.) should be replaced by:

(g) Each Mobile-Use Radio Service transmitter (a transmitter that operates or is intended to operate in the MURS) must be certified in accordance with Sec. 90.203 of this chapter.

4. Section 95.632(b) (MURS Transmitter Frequencies.) should be replaced by:

(b) The authorized bandwidth is 12.5 kHz.

5. Section 95.639(h) (Maximum Transmitter Power.) should be replaced by:

(h) No MURS unit, under any condition of modulation, shall exceed 2 W transmitter output power. No MURS station shall exceed 5 W effective radiated power (ERP).

6. Appendix 1 to Subpart E (Glossary of Terms) is amended as follows:

....
MURS. Mobile-Use Radio Service.
....

7. The title of Subpart J is amended to read:

Subpart J--Mobile-Use Radio Service (MURS)

8. A new Section 95.1308 would be added as follows:

95.1308 Prohibited Communications.

- (a) No MURS station may be interconnected to the public switched telephone network.
- (b) No MURS station may automatically retransmit the signal of any other station.
- (c) No MURS station may transmit from an antenna that does not comply with one of the following:
 - (1) The highest point must not be more than 6.10 meters (20 feet) higher than the highest point of the building or tree on which it is mounted; or

- (2) The highest point must not be more than 18.3 meters (60 feet) above the ground. If the MURS station is located near an airport, and if the antenna structure is more than 6.1 meters (20 feet) high, the highest point of the antenna must not exceed one meter above the airport elevation for every hundred meters of distance from the nearest point of the nearest airport runway. Consult Part 17 of the FCC's Rules for more information.

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