

FCC MAIL SECTION

Before the  
Federal Communications Commission  
Washington, D.C. 20534

JUN 23 12 11 PM '94

PR Docket No. 93-85 ED BY

In the Matter of

Amendment of Part 97 of the RM-8218  
Commission's Rules Concerning RM-8280  
HF Digital Communications in the  
Amateur Service.

**NOTICE OF PROPOSED RULE MAKING**

Adopted: June 13, 1994; Released: June 23, 1994

Comment Date: October 1, 1994  
Reply Comment Date: November 1, 1994

By the Commission: Commissioners Ness and Chong not participating.

**I. INTRODUCTION**

1. In this *Notice of Proposed Rule Making (Notice)*, we propose to amend the amateur service rules to authorize automatic control<sup>1</sup> of stations transmitting a digital emission on the High Frequency (HF) amateur service bands.<sup>2</sup> This proceeding was initiated by two petitions for rule making.<sup>3</sup>

**II. BACKGROUND**

2. The propagation characteristics of the HF bands<sup>4</sup> allow for long distance communications. Amateur operators take advantage of these characteristics to communicate with other amateur stations, particularly with those in other countries. Establishing and maintaining a HF communications

link, however, presents operating demands not encountered on the Very-High Frequency (VHF) and higher frequency bands frequencies above 30 MHz. The variables affecting communications in the HF bands are highly complex. To maintain the communications link and avoid causing interference to the communications of other amateur stations, the control operator constantly monitors the activity on the channel being used and adjusts the station's transmitting parameters as needed. Because the presence of the control operator has been imperative for proper operation in such systems, automatic control of an amateur station that is transmitting on an HF band has not been authorized.<sup>5</sup>

3. In 1986, however, automatic control of amateur stations transmitting digital communications<sup>6</sup> on the VHF and higher frequency bands was authorized.<sup>7</sup> In the same proceeding, the Commission indicated an interest in also authorizing automatic control of amateur stations transmitting digital communications in the HF band. In this regard, the Commission noted that a feasibility study planned by The American Radio Relay League, Inc. (ARRL) would be helpful in determining if any rule changes were necessary to prevent interference to and from other amateur service communication.<sup>8</sup> The ARRL's petition is the result of that study.

**III. DISCUSSION**

4. According to the ARRL, its project was carried out under Special Temporary Authority<sup>9</sup> we granted to some fifty amateur stations. It states that these stations were assembled as an automated digital communication system on the 20 meter HF band based upon the packet radio protocol used generally by amateur stations on the VHF bands.<sup>9</sup> Based on the experience gained managing this system, the ARRL concludes that the only regulatory safeguard needed to prevent interference to other stations is to restrict those stations that engage in automatically controlled station transmissions to specific subbands within the eight HF bands where data and RTTY emission types may be transmitted. The ARRL believes that this approach will provide advance notice to other amateur operators that they may receive interference to their communications from automatically controlled stations should they attempt to operate their stations in these subbands.<sup>10</sup> The ARRL

<sup>1</sup> Section 97.3(a) of the Commission's Rules, 47 C.F.R. § 97.3(a), defines automatic control as the use of devices and procedures for control of a station when it is transmitting so that compliance with the Commission's Rules is achieved without the control operator being present at a control point. Only stations specifically designated in the rules may be automatically controlled.

<sup>2</sup> Section 97.3(c) of the Commission's Rules, 47 C.F.R. § 97.3(c), authorizes amateur stations to use any of eighteen data and RTTY emission types when transmitting digital communications. The nine data emission types enable amateur stations to transmit telemetry, telecommand, and computer communications. The nine RTTY emission types enable amateur stations to transmit narrow-band direct-printing telegraphy communications.

<sup>3</sup> RM-8218 was filed by The American Radio Relay League, Inc. (ARRL). RM-8280 was filed by the American Digital Radio Society, Inc., (ADRS). The ARRL also filed comments strongly supporting RM-8280.

<sup>4</sup> Of the nine frequency segments allocated to the amateur

service in the HF (3-30 MHz) portion of the radio spectrum, data and RTTY digital emissions may be transmitted on all but the 75 meter band (3.75-4.00 MHz.)

<sup>5</sup> The rules applicable to amateur service message forwarding systems were revised effective June 1, 1994, in PR Docket No. 93-85. See *Report and Order*, PR Docket No. 93-85, 9 FCC Rcd 1786 (1994). These revisions, however, did not authorize automatic control of stations transmitting on the HF bands. See also *Public Notice*, Report No. DC-2605, June 2, 1994.

<sup>6</sup> Automatic control of digital communications allows amateur operators to utilize high-speed computer-based message technology for the rapid and accurate relaying of messages and data.

<sup>7</sup> See *Report and Order*, PR Docket No. 85-105, 51 Fed. Reg. 3069 (1986).

<sup>8</sup> See *Memorandum Opinion and Order*, PR Docket No. 85-105, 1 FCC Rcd 166 (1986).

<sup>9</sup> The protocol was the American Radio Relay League, Inc. AX.25 *Amateur Packet-Radio Link-Layer Protocol, Version 2.0*, October 1984.

<sup>10</sup> ARRL petition at 18-19.

recommends that the subbands be those it has coordinated with other amateur radio societies in North and South America.<sup>11</sup>

5. In its petition, the American Digital Radio Society (ADRS) states that it also believes that automatic control in the HF bands is workable<sup>12</sup> as long as proper safeguards for other users of these bands are included.<sup>13</sup> It agrees that communications between automatically controlled stations should be confined to the ARRL-recommended subbands.<sup>14</sup> The ADRS also recommends, however, that communications between a locally or remotely controlled station and an automatically controlled station should be permitted on any frequency authorized for data and RTTY emission types.<sup>15</sup> It argues that the potential for interference is much less from stations operating in this configuration because the control operator of the locally or remotely controlled station can terminate the transmissions from all the stations. In its comments, the ARRL supported the ADRS petition.<sup>16</sup>

6. We are gratified by the cooperation and dedication of organizations within the amateur service community in determining the conditions necessary to allow automatic control of stations transmitting data and RTTY emission types on the HF amateur service bands. We concur with the petitioners that automatic control of amateur stations in the HF bands can, with the safeguards recommended, make the transmission of data and RTTY emission types practical and effective.<sup>17</sup> Also like the petitioners, we believe that the potential for interference to the communications of other amateur stations will be mitigated by rules based upon their recommendations. We propose, therefore, to authorize automatic control for stations transmitting data and RTTY emission types on the subbands recommended by the ARRL. We also propose to authorize communications between a locally or remotely controlled station and an automatically controlled station on any frequency where data and RTTY emission types are otherwise authorized.<sup>18</sup> These proposed rules are intended to facilitate the development of digital communications on the HF amateur service bands. We request comments on these proposals.

#### IV. CONCLUSION

7. We firmly believe in the principle that government should be responsive to user needs.<sup>19</sup> The rules that we are proposing are the result of a successful feasibility project planned and carried out within the amateur service community. They are responsive to the recommendations of two organizations dedicated to bringing the benefits to be derived from the transmission of digital communications

on the amateur service HF bands to amateur operators in the United States and elsewhere without causing unnecessary interference to other types of communications.

#### V. PROCEDURAL MATTERS

##### Ex Parte Rules - Non-Restricted Proceeding

8. This is a non-restricted notice and comment rule making proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission Rules. See generally 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a).

##### Regulatory Flexibility Act

9. We certify that the Regulatory Flexibility Act of 1980 does not apply to this rule making proceeding because, if the proposed rule amendments are promulgated, there will not be any significant economic impact on small business entities, as defined by Section 601(3) of the Regulatory Flexibility Act. The amateur service may not be used to transmit communications for compensation, for the pecuniary benefit of the station control operator or the station control operator's employer, or for business communications on a regular basis. See 47 C.F.R. § 97.113(a). The Secretary shall send a copy of this Notice of Proposed Rule Making, including the certification, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 605(b) of the Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. 601-612 (1981).

##### Comment Dates

10. Authority for issuance of this *Notice* is contained in Sections 4(i), 303(b), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 303(b), (g), and (r). Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before October 1, 1994, and reply comments on or before November 1, 1994. To file formally in this proceeding, you must file an original and five copies of all comments, and reply comments. To file informally, you must file an original and one copy of your comments, provided only that the Docket Number is specified in the heading. You should send comments and reply comments to: Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection

<sup>11</sup> ARRL petition at 15-16.

<sup>12</sup> ADRS petition at 1-2. ADRS members are Commission-licensed amateur radio operators interested primarily in developing digital communications technology.

<sup>13</sup> ADRS petition at 6.

<sup>14</sup> ADRS petition at 11.

<sup>15</sup> ADRS petition at 10-11.

<sup>16</sup> Comments of the ARRL in Response to RM-8280 at 8.

<sup>17</sup> Other examples of designated subbands to minimize interference include subbands for repeater stations, Section 97.205(b) of the Commission's Rules, 47 C.F.R. § 97.205(b), and a weak-signal subband recently established at 220.00-222.15 MHz. See *Report and Order* PR Docket No. 92-289, 8 FCC Rcd 8428 (1993).

<sup>18</sup> Stations are authorized to transmit a RTTY or data emission on frequency segments specified in Section 97.305(c) of the Commission's Rules, 47 C.F.R. § 97.305(c). On the HF bands, these subbands are separate from the subbands where analog emission types are authorized.

<sup>19</sup> Vice President Al Gore, *Report of the National Performance Review, From Red Tape to Results: Creating a Government That Works Better and Costs Less*, at 6-8 (1993). The Vice President's Report stresses putting people first. Serving customers and cutting costs are two of its key principles. This *Notice* embraces these principles by seeking ways to allow amateur service licensees to use efficient technologies that are now available so that they can operate their stations in the manner they desire.

during regular business hours in the FCC Reference Center (Room 239) of the Federal Communications Commission, 1919 M Street, N. W., Washington, D.C. 20554.

11. For further information, contact William T. Cross, Personal Radio Branch, Private Radio Bureau, (202) 632-4964.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton  
Acting Secretary

APPENDIX

Part 97 of Chapter I of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

1. The authority citation for Part 97 would continue to read as follows:

**Authority citation: 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. §§ 151-155, 301-609, unless otherwise noted.**

2. Section 97.109 is amended by revising paragraphs (d) and (e) to read as follows:

**§ 97.109 Station control.**

(d) When a station is being automatically controlled, the control operator need not be at the control point. Only stations specifically designated elsewhere in this Part may be automatically controlled. Automatic control must cease upon notification by an EIC that the station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the EIC.

(e) No station may be automatically controlled while transmitting third party communications, except a station transmitting a RTTY or data emission. All messages that are retransmitted must originate at a station that is being locally or remotely controlled.

3. Subpart C of Part 97 is amended by adding new Section 97.221 to read as follows:

**§ 97.221 Automatically controlled digital station.**

(a) This rule section does not apply to an auxiliary station, a beacon station, a repeater station, an earth station, a space station, or space telecommand station.

(b) A station may be automatically controlled while transmitting RTTY or data emissions on the 6 m or shorter wavelength bands, and on the 28.120-28.189 MHz, 24.925-24.930 MHz, 21.090-21.100 MHz,

18.105-18.110 MHz, 14.0950-14.0995 MHz, 14.1005-14.112 MHz, 10.140-10.150 MHz, 7.100-7.105 MHz, or 3.620-3.635 MHz segments.

(c) A station may be automatically controlled while transmitting a RTTY or data emission on any other frequency authorized for such emission types provided that:

(1) The station is responding to interrogation by a station under local or remote control; and

(2) No transmission from the automatically controlled station occupies a bandwidth of more than 500 Hz.