JOHN B. JOHNSTON
17701 Bowie Mill Road
Derwood, MD 20855-1608
301 869 8286
john@johnston.net

June 8, 2010

SECRETARY
Federal Communications Commission
Washington, DC 20554

Greetings:

Please accept for filing my attached Petition for Rulemaking RECONSTITUTING PART 99 OF THE COMMISSION'S RULES PROVIDING FOR A DISASTER RADIO SERVICE.

Enclosed with this covering letter is the original signed document plus four (4) copies.

The petition is on pages 1 through 3. Attachment 1 is on pages 4 through 21.

I believe the action bureau is Public Safety and Homeland Security.

Thank you.

Sincerely,

John B. Johnston
Station licensee W3BE
FRN 0003115342

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	RM-
	)	
RECONSTITUTING PART 99 OF THE	)	
COMMISSION'S RULES PROVIDING FOR A	)	
DISASTER RADIO SERVICE	)	
	)	

To: The Commission

PETITION FOR RULE MAKING

INTRODUCTION

1. In comments filed in WP Docket No. 10-72,[1] with intention of making the best use of our national resource of our amateur service community for intercommunications related to emergencies, this petitioner recommended the reconstitution of the former Disaster Radio Service, Part 99. The service model recommended to follow would be that of Military Affiliate Radio System sponsored by our Army, Navy and Marine Corps, and Air Force.[2] This would enable easily modified amateur station apparatus is used by our seasoned amateur radio operators under rules dedicated to - and designed exclusively for - public safety and homeland security communications. The attached Appendix 1 is this petitioner's proposed draft of such a rule part.

DISCUSSION

2. These proposed rules are designed to enable our amateur service community to provide telecommunications services during a disaster without negatively compromising the integrity of our amateur radio service or our status as amateur radio operators.[3] These draft rules are targeted toward providing *ad hoc* telecommunication networks in unpredictable emergency situations, when close cooperation between different government and non-government agencies is essential to providing fast response. Specific and unambiguous provisions are made for disaster radio service station licensees

---

[1] Comments of John B. Johnston May 10, 2010 ECFS Filing Receipt Confirmation number 201059032536.

[2] Operated since 1925, the MARS now relies upon over 5,000 volunteer amateur operators who use their station apparatus for transmitting messages for our military on non-amateur service government radio channels. Accepting as compensation surplus military radio apparatus and other perquisites is not an issue.

[3] SEC. 3. [47 USC 153](2) of the Communications Act of 1934; No. 1.56 of the international Radio Regulations (RR); and §§2.1(c) and 97.3(a)(4) define an amateur as a duly authorized person interested in radio technique solely with a personal aim and without pecuniary interest.

and control operators to accept compensation while carrying out this work. This approach resolves the contentious issue arising from addressing the need for better emergency telecommunications through a major redirection of our amateur radio service in places where it is regulated by the Commission.[4]

3. These draft rules borrow heavily from the current Part 97, the set of rules with which holders of Commission amateur service license grants are already most familiar. Some 1610 questions concerning the rules in Part 97, as well as good amateur practices and the technology necessary to comprehending these rules and practices are contained in question pools from which are drawn the question sets that our 30,000 volunteer examiners administer to amateur operator license candidates practically everywhere.

4. The disaster radio service would be used exclusively for doing what our amateur service community does best: Providing emergency telecommunications through our *ad hoc* networks using our unique array of *abilities:* know-how capability, situational adaptability, technical flexibility, operator availability, *et al.* These abilities exist because of the adaptive nature of our communication systems made possible only because of our practical hands-on familiarity with the underlying technology. No other telecommunication service comes close to our amateur radio service in these abilities.[5]

5. Because the disaster radio stations and control operators would be drawn from our amateur radio service, these draft rules would authorize transmissions by rule rather than through additional license processing. Transmitter power limits are such as to make unnecessary the RF environmental evaluation[6] otherwise mandatory for higher power transmissions. Frequency privileges have been identified that would facilitate conversion of amateur station apparatus to disaster radio service coverage. In the HF range, our amateur service 60 meter band - which is not a worldwide amateur service band - would be shared secondarily with the disaster service as would our VHF 1.25 meter band. A new VHF band at 54-56 MHz[7] would be immediately adjacent to our amateur service 6 meter band.[8] The other new VHF band would be at 174-178 MHz.[9] That particular spectrum range is close enough to the amateur service 2 meter band[10] as to make possible a similar band plan for field simplex and repeater mobile and handheld radio voice and keyboard digital packet intercommunications.

---

[4] Practically every country authorizes the amateur radio service. Most countries reportedly consider it to be a recreational activity.

[5] BE Informed No. 44 Providing Emergency Communications. http://www.w3BEInformed.org

[6] In the amateur service, §97.13(c) requires the station licensee to perform the routine RF environmental evaluation prescribed by §1.1307(b), if the power of the licensee's station exceeds certain limits.

[7] VHF 54-56 MHz is a portion of former VHF broadcasting channel 2.

[8] The amateur radio service VHF 6 meter band is 50-54 MHz.

[9] VHF 174-178 MHz is a portion of former VHF broadcasting channel 7.

[10] The amateur radio service 2 meter band is 144-148 MHz.

CONCLUSION

6. There is, unquestionably, an enormous unmet demand for better telecommunications intercommunications available to emergency and disaster responders. This petition offers the Commission a way to enable our amateur service community to help meet that challenge quickly with a trained and knowledgeable national reserve without negatively compromising the integrity of its very fountainhead, our amateur radio services.[11]

Respectfully submitted,

John B. Johnston
Licensee of station W3BE
FRN 0003115342
June 7, 2010

17701 Bowie Mill Road
Derwood, MD 20855-1608
(301) 868-8286
john@johnston.net

[11] §97.1 says that the rules in Part 97 are designed to provide an amateur radio service having a fundamental purpose as expressed in the principles of providing voluntary noncommercial communication public services, advancing the radio art, advancing technical and communication skills, expanding our reservoir of trained operators, technicians and electronic experts, and enhancing international goodwill.

APPENDIX 1

PART 99—DISASTER RADIO SERVICE

Section Contents

Subpart A—General Provisions

§99.1 Basis and purpose of this part.
The rules and regulations in this part are designed to enable amateur radio service licensees to accept compensation while providing emergency telecommunications services during a disaster without compromising the integrity of the amateur radio services or their status as amateur radio operators.

§99.3 Definitions used in this part.
(a) The definitions of terms used in this part are:

(1) *Ad hoc emergency telecommunications network.* A communication system created extemporaneously in conjunction with an unpredictable emergency situation, when close cooperation between different agencies is essential to providing fast response.

(2) *Amateur radio operator.* A person named in an amateur radio operator/primary license station grant on the ULS consolidated licensee database interested in radio technique solely with a personal aim and without pecuniary interest.

(3) *Amateur radio services.* The amateur radio service, the amateur-satellite service and the radio amateur civil emergency service.

(4) *Amateur radio station.* A station in an amateur radio service consisting of the apparatus necessary for carrying on radiocommunications for the purpose of self-training, intercommunication and technical investigations.

(5) *Automatic control.* The use of devices and procedures for control of a station when it is transmitting so that compliance with these rules is achieved without the control operator being present at its control point.

(6) *Bandwidth.* The width of a frequency band outside of which the mean power of the transmitted signal is attenuated at least 26 dB below the mean power of the transmitted signal within the band.

(7) *Broadcasting.* Transmissions intended for reception by the general public, either direct or relayed.

(8) *Control operator.* An amateur operator designated by the licensee of a station to be responsible for the transmissions from that station to assure compliance with these rules.

(9) *Control point.* The location at which the control operator function is performed.

(10) *Cross-band.* Intercommunications between stations transmitting on different channels.

(11) *dBd.* Gain in decibels relative to a dipole antenna.

(12) *Dipole antenna.* A radio antenna consisting of two horizontal conducting metal rods or wires in line with each other and with their near ends slightly separated.

(13) *Disaster.* A calamitous event occurring suddenly and causing great loss of life, damage to property, or hardship, such as a natural or man-made catastrophe, vehicular crash, or terrorist attack.

(14) *DRS (Disaster radio service).* An emergency telecommunication service using amateur radio operators and amateur radio stations activated in preparation for, during, and following a disaster.

(15) *DRS auxiliary station.* A DRS station, other than one in a message forwarding system that is transmitting telecommunications point-to-point within a system of cooperating DRS stations.

(16) *DRS repeater station.* A DRS station that simultaneously retransmits the transmission of another DRS station on a different channel or channels.

(17) *DRS station.* An amateur radio station converted to transmit in the disaster radio service.

(18) *Emergency.* A sudden, urgent, unexpected occurrence or occasion requiring immediate help or relief to provide safety of life and protection of property.

(19) *Employer.* An entity that compensates a person for work accomplished.

(20) *ERP.* Effective radiated power.

(21) *Frequency coordinator.* An entity, recognized in a local or regional area by amateur radio operators whose stations are eligible to be DRS auxiliary or repeater stations, that recommends transmit/receive channels and associated operating and technical parameters for such stations in order to avoid or minimize potential interference.

(22) *Harmful interference.* Interference that endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunication service operating in accordance with the international Radio Regulations.

(23) *Indicator.* Words, letters or numerals appended to the assigned call sign during the station identification announcement.

(24) *Information bulletin.* A message directed only to amateur radio operators consisting solely of subject matter of direct interest to the DRS.

(25) *International Morse code.* The dot-dash code defined in ITU–T Recommendation F.1 (March, 1998), Division B, I. Morse code.

(26) *ITU.* International Telecommunication Union.

(27) *Local control.* The use of a control operator who directly manipulates the operating adjustments in the station to achieve compliance with these rules.

(28) *Message forwarding system.* A group of DRS stations participating in a voluntary, cooperative, interactive arrangement where telecommunications are sent from the control operator of an originating station to the control operator of one or more destination stations by one or more forwarding stations.

(29) *Radio Regulations.* The latest ITU *Radio Regulations* to which the United States is a party.

(30) *Remote control.* The use of a control operator who indirectly manipulates the operating adjustments in the station through a control link to achieve compliance with the FCC rules.

(31) *Spurious emission.* An emission, or frequencies outside the necessary bandwidth of a transmission, the level of which may be reduced without affecting the information being transmitted.

(32) *Telecommand.* A one-way transmission to initiate, modify, or terminate functions of a device at a distance.

(33) *Telemetry.* A one-way transmission of measurements at a distance from the measuring instrument.

(34) *Third party communications.* A message from the control operator (first party) of a DRS station to another DRS station control operator (second party) on behalf of another person (third party).

(35) *ULS (Universal Licensing System).* The consolidated database, application filing system and processing system for all Wireless Telecommunications Services.

(b) The definitions of technical symbols used in this part are:

(1) *Hz.* Hertz.

(2) *m.* Meters.

(3) *PEP* (peak envelope power). The average power supplied to the antenna transmission line by a transmitter during one RF cycle at the crest of the modulation envelope taken under normal operating conditions.

(4) *RF.* Radio frequency.

(5) *VHF* (very-high frequency). The frequency range 30–300 MHz.

(6) *W.* Watts.

(c) The following terms are used in this part to indicate emission types. Refer to §2.201, *Emission, modulation and transmission characteristics,* for information on emission type designators.

(1) *CW.* International Morse code telegraphy emissions having designators with A, C, H, J or R as the first symbol; 1 as the second symbol; A or B as the third symbol; and emissions J2A and J2B.

(2) *Data.* Telemetry, telecommand and computer telecommunications emissions having designators with A, C, D, F, G, H, J or R as the first symbol, 1 as the second symbol, and D as the third symbol; and emission J2D.

(3) *Image.* Facsimile and television emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; C or F as the third symbol; and emissions having B as the first symbol; 7, 8 or 9 as the second symbol; W as the third symbol.

(4) *MCW.* Tone-modulated international Morse code telegraphy emissions having designators with A, C, D, F, G, H or R as the first symbol; 2 as the second symbol; A or B as the third symbol.

(5) *Phone.* Speech and other sound emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; E as the third symbol. Also speech emissions having B as the first symbol; 7, 8 or 9 as the second symbol; E as the third symbol. MCW for the purpose of performing the station identification procedure, or for providing telegraphy practice interspersed with speech. Incidental tones for the purpose of selective calling or alerting or to control the level of a demodulated signal may also be considered phone.

(6) *RTTY.* Narrow-band direct-printing telegraphy emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1 as the second symbol; B as the third symbol; and emission J2B. Only a digital code of a type specifically authorized in this part may be transmitted.

(7) *SS.* Spread spectrum emissions using bandwidth-expansion modulation emissions having designators with A, C, D, F, G, H, J or R as the first symbol; X as the second symbol; X as the third symbol.

(8) *Test.* Emissions containing no information having the designators with N as the third symbol. Test does not include pulse emissions with no information or modulation unless pulse emissions are also authorized in the frequency band.

§99.5 Amateur radio station license required.
The apparatus comprising a DRS station under the physical control of a person named in an amateur radio station license grant on the ULS consolidated license database is authorized to transmit, in accordance with the rules of this part, on any DRS frequency from any place that is within 50 km of the Earth's surface where the amateur radio service is regulated by the FCC.

§99.7 Control operator authorization.
When transmitting, each DRS station must have a control operator. Any person for whom an amateur radio operator/primary station license grant appears on the ULS consolidated licensee database is authorized to be a DRS station control operator.

§99.9 DRS station aboard a ship or aircraft.
(a) The installation and operation of each DRS station on a ship or aircraft must be approved by the master of the ship or pilot in command of the aircraft.

(b) The DRS station must be separate from and independent of all other telecommunications apparatus installed on the ship or aircraft, except a common antenna may be shared with a voluntary ship radio installation. The DRS station's transmissions must not cause interference to any other apparatus installed on the ship or aircraft.

(c) The DRS station must not constitute a hazard to the safety of life or property. For a station aboard an aircraft, the apparatus shall not be operated while the aircraft is operating under Instrument Flight Rules, as defined by the Federal Aviation Administration, unless the DRS station has been found to comply with all applicable Federal Aviation Administration rules.

§99.11 Restrictions on DRS station location.
(a) Before placing a DRS station on land of environmental importance or that is significant in American history, architecture or culture, the licensee may be required to take certain actions prescribed by §§1.1305–1.1319.

(b) A DRS station within 1600 m (1 mile) of an FCC monitoring facility must protect that facility from harmful interference. Failure to do so could result in imposition of

operating restrictions upon the DRS station by a District Director pursuant to §97.121. Geographical coordinates of the facilities that require protection are listed in §0.121(c).

§99.13 DRS station antenna structure.

(a) The owner of a DRS station antenna structure more than 60.96 meters (200 feet) above ground level at the site or located near or at a public use airport must notify the Federal Aviation Administration and register with the FCC as required by Part 17.

(b) Except as otherwise provided herein, a DRS station antenna structure may be erected at heights and dimensions sufficient to accommodate DRS telecommunications. (State and local regulation of a station antenna structure must not preclude DRS telecommunications. Rather, it must reasonably accommodate such telecommunications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose.

§99.15 Accepting compensation.

DRS control operators and DRS station licensees may accept compensation for providing emergency telecommunications.

Subpart B—Station Operation Standards

§99.101 General standards.

(a) A DRS station shall be utilized only for providing necessary *ad hoc* emergency telecommunications network capabilities in preparation for, during, and following a disaster.

(b) In all respects not specifically covered by FCC Rules each DRS station must be operated in accordance with good engineering and good amateur radio practice.

(c) Each DRS station licensee and each DRS control operator must cooperate in selecting transmitting channels and in making the most effective use of the DRS frequencies. No frequency will be assigned for the exclusive use of any DRS station.

(d) At all times and on all frequencies, each DRS control operator must give priority to DRS stations providing emergency telecommunications.

(e) No DRS station shall willfully or maliciously interfere with or cause interference to any radio communication or signal.

§99.103 DRS station licensee responsibilities.

(a) The DRS station licensee is responsible for the proper operation of the station in accordance with the FCC Rules. When the DRS control operator is a different person than the DRS station licensee, both persons are equally responsible for proper operation of the station.

(b) The DRS station licensee must designate the DRS station control operator. The FCC will presume that the DRS station licensee is also the control operator, unless documentation to the contrary is in the DRS station records.

(c) The DRS station licensee must make the DRS station apparatus and records available for inspection upon request by an FCC representative.

§99.105 DRS control operator duties.
The DRS control operator must ensure the immediate proper operation of the DRS station, regardless of the type of control.

§99.109 DRS station control.
(a) Each DRS station must have at least one control point.

(b) When a DRS station is being locally controlled, its control operator must be at the control point. Any DRS station may be locally controlled.

(c) When a DRS station is being remotely controlled, its control operator must be at the control point. Any DRS station may be remotely controlled.

(d) When a DRS station is being automatically controlled, its control operator need not be at the control point. Only DRS auxiliary stations and DRS repeater stations may be automatically controlled. Automatic control must cease upon notification by a District Director that the DRS station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the District Director.

§99.111 Authorized transmissions.
(a) A DRS station may transmit the following types of two-way telecommunications:

(1) Transmissions necessary to exchange messages with other DRS stations including messages for the DRS station licensee's or the DRS control operator's employer.

(2) Transmissions necessary to meet essential communication needs and to facilitate relief actions.

(3) Transmissions necessary to exchange messages cross-band with a station in another FCC-regulated service while providing emergency telecommunications;

(4) Transmissions necessary to exchange messages cross-band with a United States government station, necessary to providing telecommunications in RACES; and

(5) Transmissions necessary to exchange messages cross-band with a station in a telecommunications service not regulated by the FCC, but authorized by the FCC to communicate with DRS stations.

(b) In addition to one-way transmissions necessary to providing emergency telecommunications, a DRS station may transmit the following types of one-way telecommunications:

(1) Brief transmissions necessary to make adjustments to the station;

(2) Brief transmissions necessary to establishing two-way telecommunications with other stations authorized to intercommunicate with a DRS station;

(3) Telecommand;

(4) Transmissions necessary to disseminate information bulletins.

(5) Telemetry.

§99.113 Prohibited transmissions.
(a) No DRS station shall transmit:

(1) Telecommunications specifically prohibited elsewhere in this part;

(2) Music using a phone emission; telecommunications intended to facilitate a criminal act; messages encoded for the purpose of obscuring their meaning, except as otherwise provided herein; obscene or indecent words or language; or false or deceptive messages, signals or identification.

(b) No DRS station shall engage in any form of broadcasting, nor may a DRS station transmit one-way telecommunications except as specifically provided in these rules; nor shall a DRS station engage in any activity related to program production or news gathering for broadcasting purposes, except that telecommunications directly related to the immediate safety of human life or the protection of property may be provided by a

DRS station to broadcasters for dissemination to the public where no other means of communication is reasonably available before or at the time of the event.

(c) No DRS station shall retransmit programs or signals emanating from any type of telecommunications station other than a DRS station.

(d) No DRS station, except a DRS auxiliary station or DRS repeater station, may automatically retransmit the radio signals of other DRS stations.

§99.115 Third party telecommunications.

(a) A DRS station may transmit messages on DRS frequencies for a third party to:

(1) Any DRS station within the jurisdiction of the United States.

(2) Any amateur station, intercommunicating cross-band, within the jurisdiction of any foreign government when transmitting emergency or disaster relief telecommunications and any station within the jurisdiction of any foreign government whose administration has made arrangements with the United States to allow amateur stations to be used for transmitting international telecommunications on behalf of third parties. No DRS station shall transmit messages for a third party to any amateur station within the jurisdiction of any foreign government whose administration has not made such an arrangement. This prohibition does not apply to a message for any third party who is eligible to be a control operator of the DRS station.

(b) The third party may participate in stating the message where:

(1) The DRS station control operator is present at the control point and is continuously monitoring and supervising the third party's participation; and

(2) The third party is not a prior amateur radio service licensee whose license was revoked or not renewed after hearing and re-licensing has not taken place; suspended for less than the balance of the license term and the suspension is still in effect; suspended for the balance of the license term and re-licensing has not taken place; or surrendered for cancellation following notice of revocation, suspension or monetary forfeiture proceedings. The third party may not be the subject of a cease and desist order which relates to DRS operation and which is still in effect.

(c) No DRS station may transmit third party telecommunications while being automatically controlled except a DRS station transmitting a RTTY or data emission.

§99.117 DRS station identification announcement.

(a) Each DRS station must announce its assigned amateur station call sign on its transmitting channel at the end of each communication, and at least every 10 minutes

during a communication, for the purpose of clearly making the source of the transmissions from the station known to those receiving the transmissions. No station may transmit unidentified telecommunications or signals, or transmit as the station call sign, any call sign not authorized to the station.

(b) The call sign must be transmitted with an emission authorized for the transmitting channel in one of the following ways:

(1) By a CW emission. When keyed by an automatic device used only for identification, the speed must not exceed 20 words per minute;

(2) By a phone emission in the English language. Use of a phonetic alphabet as an aid for correct station identification is encouraged;

(3) By a RTTY emission using a specified digital code when all or part of the telecommunications are transmitted by a RTTY or data emission;

(4) By an image emission conforming to the applicable transmission standards, either color or monochrome, of §73.682(a) when all or part of the telecommunications are transmitted in the same image emission

(c) One or more indicators may be included with the call sign. Each indicator must be separated from the call sign by the slant mark (/), dash mark (-), or by any suitable word that denotes the slant mark or dash mark. If an indicator is self-assigned, it must be included before, after, or both before and after, the call sign. No self-assigned indicator may conflict with any other indicator specified by the FCC Rules or with any prefix assigned to another country.

§99.119 Restricted operation.
Such steps as may be necessary to minimize interference to stations operating in other services may be required after investigation by the FCC.

Subpart C—Special Operations

§99.201 DRS auxiliary station.
(a) An amateur radio station licensed to a holder of an Amateur Extra Class operator license grant is authorized be a DRS auxiliary station.

(b) The holder any operator class license grant is authorized be the control operator of a DRS auxiliary station, subject to such designation by the DRS station licensee.

(c) Where a DRS auxiliary station causes harmful interference to another DRS auxiliary station, the licensees are equally and fully responsible for resolving the interference

unless one DRS station's operation is recommended by a frequency coordinator and the other DRS station's operation is not. In that case, the licensee of the non-coordinated DRS station has primary responsibility to resolve the interference.

(d) A DRS auxiliary station may be automatically controlled.

(e) A DRS auxiliary station may transmit one-way telecommunications.

§99.203 DRS repeater station.

(a) An amateur radio station licensed to a holder of an Amateur Extra Class operator license grant is authorized to be a DRS station.

(b) The holder of any operator class license grant is authorized to be the control operator of a DRS repeater station, subject to such designation by the DRS station licensee.

(c) Where the transmissions of a DRS repeater station causes harmful interference to another DRS repeater station, the two DRS station licensees are equally and fully responsible for resolving the interference unless the operation of one DRS repeater station is recommended by a frequency coordinator and the operation of the other DRS repeater station is not. In that case, the licensee of the non-coordinated DRS repeater station has primary responsibility to resolve the interference.

(d) A DRS repeater station may be automatically controlled.

(e) Ancillary functions of a DRS repeater station that are available to users on the input channel are not considered remotely controlled functions of the station.

(f) Limiting the use of a DRS repeater station to only certain DRS user stations is permissible.

(g) The control operator of a DRS repeater station that retransmits inadvertently telecommunications that violate the rules in this part is not accountable for the violative telecommunications.

§99.205 Telecommand of a DRS station.

A DRS on or within 50 km of the Earth's surface may be under telecommand where:

(a) There is a radio or wireline control link between the control point and the DRS station sufficient for the control operator to perform his/her duties. If radio, the control link must use a DRS auxiliary station. A control link using a fiber optic cable or another telecommunication service is considered wireline.

(b) Provisions are incorporated to limit transmission by the DRS station to a period of no more than 3 minutes in the event of malfunction in the control link.

(c) The DRS station is protected against making, willfully or negligently, unauthorized transmissions.

(d) A current printout of the amateur station ULS grant and a label with the name, address, and telephone number of the station licensee and at least one designated control operator is posted in a conspicuous place at the DRS station location.

§99.207 Telemetry.
Telemetry transmitted by a DRS station is not considered to be codes or ciphers intended to obscure the meaning of telecommunications.

§99.209 DRS message forwarding system.
(a) Any DRS station may participate in a message forwarding system.

(b) For a DRS station participating in a message forwarding system, the control operator of the DRS station originating a message is primarily accountable for any violation of the rules in this part contained in the message.

(c) Except as noted in (d) of this section, for a DRS station participating in a message forwarding system, the control operator of a forwarding station that retransmits inadvertently telecommunications that violate the rules in this part are not accountable for the violative telecommunications. The control operator is, however, responsible for discontinuing such telecommunications once the control operator becomes aware of their presence.

(d) For DRS stations participating in a message forwarding system, the control operator of the first forwarding station must:

(1) Authenticate the identity of the DRS station from which it accepts telecommunications on behalf of the system; or

(2) Accept accountability for any violation of the rules in this part contained in messages it retransmits to the system.

§99.211 Automatically controlled DRS digital station.
(a) This rule section does not apply to a DRS auxiliary station, or a DRS repeater station.

(b) A DRS station may be automatically controlled while transmitting a RTTY or data emission provided that:

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

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

Subpart D—Technical Standards

§99.301 Authorized frequency bands.

The following transmitting frequency bands and channels are available to a DRS station located within 50 km of the Earth's surface, within the specified ITU Region, and outside any area where the telecommunications are regulated by any authority other than the FCC.

Wavelength band	**MHz**	**Sharing requirements *see:***
60 m	5.332	§99.303(a), (e)
-do-	5.348	-do-
-do-	5.368	-do-
-do-	5.373	-do-
-do	5.405	-do-
5 m	54-56	§99.303(b)
1.7 m	174-178	§99.303(c)
1.25 m	222-225	§99.303(d), (e)

§99.303 Sharing requirements.

The following paragraphs summarize the frequency sharing requirements that apply to a DRS station transmitting in the frequency bands specified in §99.301 of this part. A station in a secondary service must not cause harmful interference to, and must accept interference from, stations in a primary service.

(a) Secondary service to stations authorized by:

(1) The United States Government, the Federal Communications Commission, or other nations in the fixed service; and

(2) Other nations in the mobile except aeronautical mobile service.

(b) Primary service.

(c) Primary service.

(d) Secondary service.

(e) Shared with the amateur radio service.

§99.305 Authorized emission types.

(a) Except as specified elsewhere in this part, a DRS station may transmit a CW, Data, Image, Phone, RTTY, or SS emission on any frequency authorized to the DRS, subject to the standards specified in §99.307.

(b) A DRS station may transmit a test emission for brief periods.

(c) A DRS station may transmit Phone emission type 2K80J3E, upper sideband, only. No transmission may occupy no more than 2.8 kHz centered on the channel frequency.

§99.307 Emission standards.

(a) No DRS station transmission shall occupy more channel bandwidth than necessary for the information rate and emission type being transmitted, in accordance with good amateur radio practice.

(b) Emissions resulting from modulation must be confined to the channel or band available to the control operator. Emissions outside the necessary channel bandwidth must not cause splatter or keyclick interference to operations on adjacent frequencies.

(c) All spurious emissions from a DRS station transmitter must be reduced to the greatest extent practicable. If any spurious emission, including chassis or power line radiation, causes harmful interference to the reception of another radio station, the licensee of the interfering DRS station is required to take steps to eliminate the interference, in accordance with good engineering practice.

(d) The mean power of any spurious emission from a DRS station transmitter or external RF power amplifier transmitting on a frequency between 54–225 MHz must be at least 60 dB below the mean power of the fundamental. For a transmitter having a mean power of 25 W or less, the mean power of any spurious emission supplied to the antenna transmission line must not exceed 25 μW and must be at least 40 dB below the mean power of the fundamental emission, but need not be reduced below the power of 10 μW.

(f) The following standards and limitations apply to DRS station transmissions:

(1) No angle-modulated emission may have a modulation index greater than 1 at the highest modulation frequency.

(2) No non-phone emission shall exceed the bandwidth of a telecommunications quality phone emission of the same modulation type. The total bandwidth of an independent sideband emission (having B as the first symbol), or a multiplexed image and phone emission, shall not exceed that of a telecommunications quality A3E emission.

(3) Only a RTTY or data emission using a specified digital code listed in § 99.309(a) may be transmitted. The symbol rate must not exceed 300 bauds, or for frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz.

(4) Only a RTTY or data emission using a specified digital code listed in § 99.309(a) may be transmitted. The symbol rate must not exceed 1200 bauds, or for frequency-shift keying, the frequency shift between mark and space must not exceed 1 kHz.

(5) A RTTY, data or multiplexed emission using a specified digital code listed in §99.309(a) may be transmitted. The symbol rate must not exceed 19.6 kilobauds. A RTTY, data or multiplexed emission using an unspecified digital code under the limitations listed in §99.309(b) of this part also may be transmitted. The authorized bandwidth is 20 kHz.

(6) A RTTY, data or multiplexed emission using a specified digital code listed in §99.309(a) may be transmitted. The symbol rate must not exceed 56 kilobauds. A RTTY, data or multiplexed emission using an unspecified digital code under the limitations listed in § 99.309(b) also may be transmitted. The authorized bandwidth is 100 kHz.

(7) A RTTY, data or multiplexed emission using a specified digital code listed in §99.309(a) or an unspecified digital code under the limitations listed in § 97.309(b) may be transmitted.

(8) A RTTY or data emission having designators with A, B, C, D, E, F, G, H, J or R as the first symbol; 1, 2, 7 or 9 as the second symbol; and D or W as the third symbol is also authorized.

(9) Emission F8E may be transmitted.

(10) A data emission using an unspecified digital code under the limitations listed in §99.309(b) also may be transmitted. The authorized bandwidth is 100 kHz.

§99.309 RTTY and data emission codes.

(a) A DRS station may transmit a RTTY or data emission using the following specified digital codes:

(1) The 5-unit, start-stop, International Telegraph Alphabet No. 2, code defined in ITU–T Recommendation F.1, Division C (commonly known as "Baudot").

(2) The 7-unit code specified in ITU–R Recommendations M.476–5 and M.625–3 (commonly known as "AMTOR").

(3) The 7-unit, International Alphabet No. 5, code defined in IT—T Recommendation T.50 (commonly known as "ASCII").

(b) A DRS station transmitting a RTTY or data emission using a digital code specified in this paragraph may use any technique whose technical characteristics have been documented publicly for the purpose of facilitating telecommunications.

(c) A DRS station may transmit a RTTY or data emission using an unspecified digital code, except to a station in a country with which the United States does not have an agreement permitting the code to be used. RTTY and data emissions using unspecified digital codes must not be transmitted for the purpose of obscuring the meaning of any communication. When deemed necessary by a District Director to assure compliance with these rules, a DRS station licensee must:

(1) Cease the transmission using the unspecified digital code;

(2) Restrict transmissions of any digital code to the extent instructed;

(3) Maintain a record, convertible to the original information, of all digital telecommunications transmitted.

§99.311 SS emission types.

(a) Emission type SS transmissions by a DRS station are authorized only for telecommunications between points within and between areas where the DRS is regulated by the FCC.

(b) Emission type SS transmissions must not be used for the purpose of obscuring the meaning of any communication.

(c) A DRS station transmitting emission type SS must not cause harmful interference to stations employing other authorized emissions, and must accept all interference caused by stations employing other authorized emissions.

(c) When deemed necessary by a District Director to assure compliance with this part, the DRS station licensee must:

(1) Cease emission type SS transmissions;

(2) Restrict emission type SS transmissions to the extent instructed; and

(3) Maintain a record, convertible to the original information (voice, text, image, etc.) of all emission type SS telecommunications transmitted.

§99.313 Transmitter power standards.
(a) A DRS station must use the minimum transmitter power necessary to carry out the desired telecommunications.

(b) No DRS repeater station may transmit with more than 500 W ERP.

(c) Except for a DRS repeater station, no DRS station may transmit with a transmitter power exceeding 50 W PEP.

(d) No DRS station may transmit with an ERP exceeding 50 W PEP on the 60 m band.

(1) For the purpose of computing ERP, the transmitter PEP will be multiplied with the antenna gain relative to a half-wave dipole antenna or the equivalent calculation in decibels. A half-wave dipole antenna, 27 meters (87 feet) in length, will be presumed to have a gain of 0 dBd.

(2) Either manufacturer data on the antenna gain or calculations of the antenna gain must be maintained in the station records