DOCKET FILE COPY ORIGINAL

RECEIVED

JUL 30 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 97 of the Rules	)	
Governing the Amateur Radio	)	**RM-8280**
Services Concerning High-Frequency	)	
Data Communications	)	

To: The Commission

COMMENTS OF THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED
IN RESPONSE TO PETITION FOR RULE MAKING

The American Radio Relay League, Incorporated (the League), the national non-profit association of amateur radio operators in the United States, by counsel and pursuant to Section 1.405(a) of the Commission's Rules [47 C.F.R. §1.405(a)], hereby respectfully submits its comments in response[1] to the Petition for Rule Making (the Petition) filed by the "American Digital Radio Society" on or about June 2, 1993. The petition was placed on public notice June 30, 1993, per Report No. 1949. Hence, these comments are timely filed. The petition proposes to permit what it terms "unattended

[1] These comments are not principally addressed to the proposals contained in the instant petition, the objective of which is supported by the League only with the additional safeguards described herein. Rather, these comments address the general issue of automatic control of data communications on HF frequencies in the Amateur Radio Service. This is the subject of the instant petition, and also of the League's petition for rule making, RM-8218, which was filed February 1, 1993. Comments and reply comments have been filed on the League's petition, and that proceeding is now before the Chief, Private Radio Bureau for consideration. The instant petition, insofar as it addresses related issues, might be associated with RM-8218. As such, these comments are addressed to the issue of automatic control, and not to the specific proposals of the petitioner here.

No. of Copies rec'd 0+5
List A B C D E

semi-automatic control" of RTTY and data communications in the high-frequency (HF) amateur bands, under certain conditions. In response to the petition, the League states as follows:

I. Introduction: RM-8218

1. The League's Petition for Rule Making, RM-8218, filed February 1, 1993, proposed the creation of subbands within certain HF bands, within which amateur stations transmitting authorized digital communications could be operated under automatic control. In filing the petition, and in considering the proper regulatory framework for any automatic control at HF frequencies, the League attempted to resolve competing goals and obligations. On the one hand, realization of the full capability of data message networks, and the readiness of the data network system for emergency communications use, necessitates some automatic control in the HF bands. On the other hand, the incompatibility between certain data modes and other amateur operating modes would be quite apparent at HF, if automatically controlled stations in crowded, unchannelized bands were allowed to transmit without an interference avoidance mechanism.

2. The crowded conditions on the amateur HF allocations, and the inability of an automatically controlled station to "listen", effectively and reliably, prior to transmitting to prevent interference, dictates that some additional element of interference avoidance should be provided. This, the League suggested, could be done by segregating automatically controlled stations to specific subbands in the HF allocations. If messages are to be passed

between and among amateur stations without any operator intervention and no operator present at either station, it will have to be done on frequencies where amateurs expect such operation. Otherwise, random automatic control of data stations at HF would undermine the degree of cooperation in interference avoidance that HF operation, by its nature, has always required. The League's theory in filing RM-8218 was that, by designating small subbands for automatically controlled data operation, there will be advance notice to amateurs operating in that segment that automatically controlled stations may commence transmissions. From the point of view of other stations operating in that subband, operators would have advance notice of the possibility of interference to communications using an incompatible transmission mode.[2] The petition envisioned that data communications outside those subbands would be limited to local control, thus providing the necessary degree of manual interference avoidance.

3. The League continues to support RM-8218 in its entirety, and continues to urge that the Commission implement the proposed rules contained therein at the earliest possible moment. There are certain digital modes, such as packet, which are not compatible with other modes, and require separate frequencies. The

---

[2] The choice of subbands, a difficult matter due to the crowded conditions in the HF allocations, was greatly facilitated by the recent adoption of the IARU bandplan for data communications in Region 2 (the Americas). This international coordination with other amateur radio societies gives the League a great deal of confidence in the subband configuration proposed in the League's RM-8218 Petition.

capabilities of certain digital modes permit automatically controlled stations in message forwarding networks to communicate

was, in addition, viewed as creating significant opportunities for interference in large portions of the HF bands. As noted in the League's Petition:

> (Configuration of networks involving automatically controlled stations and locally controlled stations constitute) distinct limiting factors, which would preclude to a great extent the full utilization of the communications opportunities offered by the technology. Relay of data messages between and among automatically controlled stations is far more efficient and rapid than networks made up of a combination of automatically controlled stations and locally or remotely controlled stations.

RM-8218, at page 14.

The League also noted at the time that the benefit and efficiency of automatic control at HF includes not only the speed with which automatically controlled data stations can transmit messages in network configuration, but also the efficiency of such in terms of band occupancy. A configuration which detracts from either of these nullifies the benefit obtained from any automatic control configuration. For these reasons, the concept of automatically controlled stations operating throughout the HF bands, but transmitting only upon interrogation by a locally controlled station, was not initially deemed by the League to be a useful concept as a first step. Neither was the League convinced that a workable plan had been developed to prevent the automatically controlled station from causing interference, even if it is configured only to respond to locally controlled interrogatory transmissions, and not to initiate communications.

6. As noted in the League's comments and reply comments in RM-8218, however, those issues were separate and apart from the

subband concept for automatic control of HF data communications proposed by the League. Even prior to the filing of the League's RM-8218 petition, however, the League had asked its Committee on Amateur Radio Digital Communications to revisit the issue of automatically controlled data stations at HF outside the proposed subbands, and to consider means by which interference could be prevented. That committee developed a comprehensive report in March of this year, which was reviewed by the League at its July, 1993 Board meeting. The League's Board conducted meetings in July with members of that committee, and has concluded that its recommendations for additional automatic control authorization at HF frequencies outside the subbands proposed in RM-8218, should be considered.

III. The Committee Report

7. The Committee, and commenters in RM-8218, expressed concern that limiting all automatically controlled stations (and those locally controlled stations which communicate with them) to specific subbands, would result in the crowding together in those subbands all of the various data modes, including packet, AMTOR, Clover, Pactor and RTTY. It believes that the nature of amateur data communications are such that, outside the proposed subbands, there can be additional accommodation for automatically controlled stations which are responsive only, and do not initiate communications. By providing a locally controlled station at one end of the path, there is less likelihood of interference to other stations using other modes. As the Committee report stated:

In addition, the Committee would like to draw the Board's attention to an important aspect of semi-automatic operation as defined in its June 1992 recommendation: No semi-automatic[3] station will transmit a signal unless that transmission is initiated by a human operator. That operator has the responsibility (as has long been amateur practice) to avoid interference with others. It has been argued that since there is not an operator at both ends of the path that it is not possible to be absolutely sure that no interference will occur.

Unlike voice or CW operation where there can be long one-way transmissions, current digital modes (with the exception of RTTY) continuously transmit signals from both ends of a link which very greatly improves the probability of an operator observing any activity on the frequency. While it is not perfect, it is not seriously flawed either. The likelihood of interference is not seriously greater than from a purely manually operated station causing interference when attempting a contact.

8. To preclude interference, the Committee proposed several operating conditions for data stations operating under automatic control outside the specified subbands. These are as follows:

A. Stations could be operated under automatic control in bands below 30 MHz, using authorized digital modes, on those frequencies authorized for digital operation. Such stations would only communicate with stations under local or remote control.

B. Such stations (other than beacon stations operating pursuant to Section 97.203 of the Rules), may only

---

[3] The League notes that its Ad Hoc Committee, and amateurs in general, have come to refer to the concept of automatically controlled data stations at HF frequencies which communicate only with locally or remotely controlled stations as "semi-automatic control". Furthermore, automatic control has been referred to as "unattended operation". Neither of these concepts exists in the current amateur rules, and each has been avoided by the League in these comments and in prior filings with the Commission. Neither is an accurate label for the configurations described, and neither should be used in the rules. The concept of automatic control is not synonymous with unattended operation, and an individual amateur station is under local, remote or automatic control. The term "semi-automatic" control has no conceptual meaning in considering individual amateur station operation.

respond to interrogation by stations under local or remote control, and may not themselves initiate [or solicit] communications.

C. The authorized bandwidth of digital transmission of such stations should be limited to 500 Hz.

Provided that there are developed voluntary guidelines and standards for automatically controlled stations operating outside the proposed subbands, which guidelines could serve to minimize the use of HF spectrum and provide for more efficient use of it, and provided that amateurs are cautioned in the strongest possible terms to observe necessary voluntary band plans, the League can cautiously support the grant of authority to operate automatically controlled amateur stations outside the proposed subbands suggested in RM-8218. The limitation in bandwidth, the prohibition of initiation of transmissions by automatically controlled data stations outside the subbands, and the requirement of local control for stations polling those automatically controlled stations outside the subbands should reduce to a manageable level the incidents of interference.

9. Such authority, however, presupposes an extremely high level of compliance with voluntary band plans, so that users of other modes are not disrupted. If the Commission should propose and adopt a plan for automatic control of HF data operation outside the League-proposed subbands, the League would continue to monitor the

that Committee that it "does not lightly dismiss the risks of opening up the spectrum to (automatic operation outside the subbands for communications with locally controlled stations)". The League believes that, with the addition of voluntary, specific operating guidelines, and premised on the adoption of the subbands for automatic control operation in RM-8218, some additional provision for automatic control outside the subbands can be made, with limitations to prevent interference to other users of the crowded HF bands.

10. The attached appendix is proposed as a means to accomplish this additional authority, and should be considered together with the attached appendix submitted in the League's petition in RM-8218.

Therefore, the foregoing considered, the American Radio Relay League, Incorporated respectfully suggests that, in a notice of proposed rule making proposing the rule changes proposed by the League in RM-8218, such Notice should incorporate as well the additional provisions set forth in the attached appendix.

Respectfully submitted,

THE AMERICAN RADIO RELAY
LEAGUE, INCORPORATED

APPENDIX

1. Sections 97.109(d) and (e) are amended to read as follows:

Section 97.109 **Station Control.**

*****

(d) When a station is being automatically controlled, the control operator need not be at the control point. Only stations transmitting RTTY or data emissions, and 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. RTTY and data stations operating under automatic control on frequencies below 50 MHz must use a digital code permitted in §97.309(a) of these Rules, and must incorporate provisions for discontinuing transmitter operation in the event of malfunction, or interruption of communications with another station.

(1) Stations transmitting RTTY or data may be operated under automatic control in the 6 meter and shorter wavelength bands, and in the following segments of the 10 meter and longer wavelength bands: 28.120-28.189 MHz; 24.925-24.930 MHz; 21.090-21.100 MHz; 18.105-18.110 MHz; 14.095-14.0995 MHz; 14.1005-14.112 MHz; 10.140-10.150 MHz; 7.100-7.105 MHz; or 3.620-3.635 MHz.

(2) Stations transmitting RTTY or data may be operated under automatic control in the 6 meter and shorter wavelength bands outside the segments listed above, using digital

CERTIFICATE OF SERVICE

I, Margaret A. Ford, Office Manager of the law firm of Booth, Freret & Imlay, do hereby certify that a copy of the Comments of the American Radio Relay League, Inc. in Response to Petition for Rule Making were mailed, via U. S. Mail, postage prepaid, this 30th day of July, 1993, to the offices of:

The American Digital Radio Society
c/o Warren J. Sinsheimer
30 Rockefeller Plaza
New York, NY 10112

Margaret A. Ford

Margaret A. Ford