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

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Amendment of Parts 2 and 90 of the)
Commission's Rules to Allocate the)
5.850-5.925 GHz Band to the)
Mobile Service for Dedicated Short)
Range Communications of Intelligent)
Transportation Services)

ET Docket No. 98-95
RM-9096

To: The Commission

REPLY COMMENTS OF THE
AMERICAN RADIO RELAY LEAGUE, INCORPORATED

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SUMMARY

The American Radio Relay League, Incorporated (the League), the national association of Amateur Radio Operators, submits its reply comments in the captioned rulemaking proceeding. The League replies to the comments filed in response to the *Notice of Proposed Rule Making* (the Notice), 63 Fed. Reg. 35558, FCC 98-119, released June 11, 1998. The Notice proposes to allocate 75 megahertz of spectrum for use by Dedicated Short Range Communications ("DSRC") of Intelligent Transportation Systems ("ITS"), which would provide a short range, wireless link to transfer information between vehicles and roadside systems. The Notice also proposes basic technical rules establishing power limits and unwanted emission limits for DSRC operations, and seeks comment on, *inter alia*, the potential for DSRC operations in this band to share spectrum with other services.

While the League does not oppose a reasonable allocation of spectrum for DSRC applications, the comments fail to support an allocation of 75 MHz for DSRC, or any allocation of that magnitude for the purpose. There is little record indication of compatibility between DSRC systems and amateur stations, and the Commission cannot on this record presume such. The evidence would indicate that an allocation of 75 MHz is excessive, and fails to account for the efficiencies available from frequency reuse and the intended short range applications. The power level proposed in the Notice is far too high, given the applications intended for DSRC. They would suggest an interference contour of up to 10 kilometers, and given the short range of the transmissions, power levels less than one watt EIRP would be appropriate.

Notwithstanding the size of the proposed allocation, the proposed rules should require use of "polite" protocols for DSRC systems. Any newcomer in a mature, multiple-use microwave band incorporating fixed and mobile uses, should be expected and required to utilize such protocols, or to conduct prior coordination with incumbent users. Otherwise, the Commission should restrict DSRC facilities to those which incorporate listen-before-transmit protocols and frequency-agile transmitters with roaming channel selection.

The record is incomplete with respect to appropriate uses, technical specifications, and compatibility with existing users. The Commission cannot justify a 75 MHz allocation for DSRC on the present record. Under the circumstances, the Commission should have more seriously considered the use of bands above 40 GHz for DSRC functions.

Viewing the 5 GHz band amateur allocation as a whole, the Commission has largely disaccommodated the Amateur Service. The Commission should in this proceeding elevate the remaining portions of the Amateur and Amateur Satellite allocation at 5.650-5.725 GHz and 5.825-5.850 GHz to non-government primary, to insure against future preemption by non-government services with higher allocation status.

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
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Amendment of Parts 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services)	ET Docket No. 98-95 RM-9096

To: The Commission

**REPLY COMMENTS OF THE
AMERICAN RADIO RELAY LEAGUE, INCORPORATED**

The American Radio Relay League, Incorporated (the League), the national association of Amateur Radio Operators, by counsel and pursuant to Section 1.415 of the Commission's Rules (47 C.F.R. §1.415), hereby respectfully submits its reply comments in the captioned rulemaking proceeding. The League herein replies to the comments filed in response to the *Notice of Proposed Rule Making* (the Notice), 63 Fed. Reg. 35558, FCC 98-119, released June 11, 1998.¹ The Notice proposes to allocate 75 megahertz of spectrum for use by Dedicated Short Range Communications ("DSRC") of Intelligent Transportation Systems ("ITS"), which would provide a short range, wireless link to transfer information between vehicles and roadside systems. The Notice also proposes basic technical rules establishing power limits and unwanted emission limits for DSRC operations, and seeks comment on, *inter alia*, the potential for DSRC

¹ The League timely filed comments in this proceeding on September 14, 1998.

operations in this band to share spectrum with other services. For its reply comments, the League states as follows:

I. The Comments

1. There were a number of comments filed in this proceeding in support of the proposed allocation for DSRC operations. These included the Department of Transportation (DOT); The Association of Public Safety Communications Officials International, Inc. (APCO); Mark IV Industries, Ltd; International Municipal Signal Association (IMSA); Amtech Systems Division, Intermec Technologies Corporation (Amtech); and ITS America. In addition to the League's comments on behalf of the Amateur Service, several individual amateur radio operators submitted comments. Other comments filed reflected particular concerns of users of the 5.850-5.925 GHz allocation. These included ReSound Corporation, Panamsat Corporation, and Motorola. There were no comments, save for those of the League, and the individual radio amateurs, that addressed the issue of compatibility between incumbent amateur licensees and DSRC users. Neither did any of the comments suggest that the Amateur allocation was incompatible with DSRC operation, or that there should be any restriction on amateur operation in the 5.850-5.925 GHz segment.

II. Compatibility Between DSRC Devices and the Amateur Service

2. In fact, the comments suggest that the frequency agility of DSRC devices, coupled with the availability of the 902-928 MHz band for some DSRC functions and the wide bandwidth available in a 75 MHz bandwidth, are sufficient to allow compatible use with incumbent licensees in the band. According to DOT, at page 3 of its Comments:

The Department supports the Commission's proposal to allocate 75 MHz. The proposal will support current and future use of DSRC services and allow the

flexibility necessary to operate with the users currently in the band.

It is noteworthy that DOT's spectrum sharing discussion mentions compatibility with Department of Defense radars and INTELSAT satellite operations, and with ISM devices, but are silent on any compatibility between DSRC uses and amateur operations.² This is, however, likely related to the suggestion of DOT that DSRC devices should be classified and operated as Part 15 unlicensed devices, and thus cannot demand protection from any licensed service:

We agree as well with the Commission's proposal on Part 15 (i.e. unlicensed) DSRC devices...It is our belief that Part 15 DSRC devices would provide no safety-related services, and thus the lack of protection afforded them would not compromise public safety. Part 15 DSRC devices may, however, find application in various commercial endeavors, in which case the responsibility for proper operation rests with the commercial provider.

DOT Comments, at 6.

Of course, if DSRC devices are accommodated only on a Part 15, unlicensed basis, with the concomitant restrictions on interference, power and antenna gain, there is no domestic frequency allocation necessary, and the Commission can simply proceed to permit Part 15 DSRC operation in the band, and establish technical regulations that are consistent with unlicensed devices generally. In any case, there are no comments on the Notice that the League has been able to find which question the compatibility of DSRC devices and amateur operation at 5.850-5.925 GHz.

² It is noted, however, that the DOT comments, at pages 2 and 3, discuss the results of findings of the Institute for Telecommunication Sciences at Boulder, Colorado, which are generally that:

DOD's high-powered radars present manageable interference problems for DSRC installations. The analyses, using equipment manufactured to the European and Japanese DSRC standards and modified to operate in the 5.850-5.925 band (sic), demonstrate that the interference ranges of DSRC devices (from DOD radars) are very short. In the case of the European standard equipment, a typical worst-case interference range is less than 20 kilometers; in the case of the Japanese standard equipment, it is less than one kilometer (footnote omitted).

3. The ITS America comments, though silent on the specific issue of DSRC and Amateur Radio compatibility, validate the League's earlier point that there is insufficient data on the subject. ITS America, rather blithely, states at page 15 of its comments as follows:

Finally, ITS America continues to be confident that DSRC-based ITS services may share the 5.85-5.925 GHz band with existing incumbents. Much work has been done to test co-channel band uses, to assess the potential for interfering band uses and to develop spectrum sharing protocols, where appropriate. This work will continue. In addition, ITS America intends to continue its discussions with ReSound looking to ensuring a workable band environment with ReSound's expected Part 15 unlicensed device.

While the League is pleased to learn that there is work being done to test co-channel band uses, and to develop spectrum sharing protocols, it is unfortunate that, despite offers of cooperation on the League's part, none of these tests have apparently involved the Amateur Service. As it stands, however, and as is apparent from the comments, the extent of compatibility between DSRC functions and amateur operation in the band is unknown.

4. This is likely due to wide variation in the parties' understanding of the DSRC functions which would be provided at 5.850-5.925 GHz. While DOT, as seen above, is comfortable with Part 15 unlicensed status for DSRC devices, ITS America has a substantially different view:

Of particular importance in deriving these Rules will be the protection of "core" public safety related DSRC functions, such as incident management, emergency vehicle signal preemption, en-route driver's information and other services. Thus, while ITS America can envision certain more commercial DSRC services as being provided on an unlicensed Part 15-type basis, by the same token, it is clear that these core services must receive the protection afforded by co-primary licensing.

ITS America Comments, at 14.

Thus, as it has not been determined what functions are to be provided, and thus what level of interference protection is required, it is difficult or impossible to determine what the level of

compatibility is with incumbent licensees in the band.³ This, and ITS America's admission that compatibility testing is not complete, renders this proceeding, and the proposed allocation for DSRC, premature.⁴

III. The Need for a 75 MHz Allocation for DSRC Has Not Been Established

5. Likewise, the comments offer little substantiation for the size of the proposed allocation for DSRC functions, even assuming that a co-primary allocation is necessary. IMSA, for example, merely states that the "ITS America petition and the record in this proceeding provide more than ample justification for an allocation of this magnitude." The League respectfully disagrees; what is exhibited in the record is the absence of any justification for an allocation of this magnitude. As noted in the League's comments, the request for 75 MHz of bandwidth is premised on the ARINC report attached to ITS America's initial petition in this proceeding, which concluded that the requested amount of spectrum is required due to 5 to 10 MHz bandwidths of some experimental devices, and to support future systems. Yet, the Notice, at paragraph 14, states that the Commission doubts the claim that 6 MHz channels are necessary for DSRC applications, especially in the rapidly advancing age of digital communications. Furthermore, the Commission found unconvincing the proposals for use of active transceivers

³ The Comments of Mark IV Industries, at 4, state that, "(w)hile much work has taken place in the United States to develop DSRC standards, an industry agreement on standards affecting significant technical parameters for deployment and operations in the 5.9 GHz band has not been reached. Industry efforts have been largely focussed on supporting 902-928 MHz band DSRC technology..." Under the circumstances, it cannot now be determined what size allocation, if any, should be made at 5.9 GHz for DSRC, or whether bands above 40 GHz should be allocated instead.

⁴ Additional evidence of the prematurity of the allocation is contained in the comments of Mark IV Industries, which admonishes the Commission to coordinate the proposed allocation with Canada and Mexico, prior to finalizing any allocation details, since concurrence among the affected North American regulatory administrations on spectrum allocations for DSRC technologies to be deployed in the United States, Canada and Mexico is essential to all parties in the surface transportation industry. If this has not been done already, and if Canadian or Mexican administrations may choose another band for DSRC, the Commission should take no action on this proposal at this time.

requiring wide bandwidth channels in terms of spectrum efficiency.

6. The Commission thus properly requested comment on whether the proposed allocation is excessive given that efficient spectrum use techniques exist and in view of the Commission's goal of promoting spectrum efficiency. Unfortunately, the comments offer little response. The comments of DOT candidly expose the absence of any technical justification for an allocation of this size:

The Department supports the Commission's proposal to allocate 75 MHz. The proposal will support current and future use of DSRC services and allow the flexibility necessary to operate with the users currently in the band. Additionally, only an allocation that is large enough to encompass the planned and envisioned range of services will ensure the interest and investment necessary to bring about the enormous potential benefits.

DOT Comments, at 3.

The comments of Mark IV similarly refer to "flexibility" as though it is in some manner a desirable goal in the science of spectrum allocations for fixed and mobile applications. In fact, in this context, it is the essence of inefficient spectrum utilization. The short-range applications of DSRC functions, with the accompanying potential for frequency re-use, does not justify anywhere near the magnitude of the proposed allocation.

7. The only attempted argument on the subject was in the comments of Amtech Systems Division, which noted that there were two bandwidth requirements for different applications. Where a DSRC system is one-way (read-only), the illuminating signal is only a carrier (i.e. a continuous-wave signal) of "virtually no bandwidth." *Amtech comments, at 5.* The bandwidth requirement is thus determined by the modulation technique employed in the tag and the signalling speed associated with the modulation. For tag readers at toll booths, despite the need for different channels, use of directional antennas as tag readers provides frequency re-use

opportunities. For two-way systems, according to Amtech, wider bandwidths are justified by the need for passage of data at high rates due to the highway speeds of vehicles and the short time a vehicle is in range. Amtech warns that the slow data rates of conventional mobile data systems should not be used as the benchmark for what will be available in the future. Thus, the assumption of wide bandwidth, slow-data systems should not be an assumption in justifying the appropriate allocation size.

8. The comments of Motorola and of ReSound Corporation offer the view that a 75 MHz allocation for DSRC is excessive. Both suggest that a smaller allocation, on the order of 50 MHz, would be sufficient, and that the segment 5.850-5.875 GHz should be kept free of DSRC systems so that devices for the hearing impaired and very low power information devices can continue to operate in that segment. According to Motorola, this is entirely consistent with the ARINC July, 1996 analysis of spectrum requirements:

Reducing the proposed ITS allocation to 50 MHz would be consistent with the spectrum need as calculated in the technical report supporting this proposal (footnote omitted). In that report, the spectrum need 'was determined to be 8 channels of 8 MHz each, or 48 MHz total.' An additional 56%, or 27 MHz of additional spectrum, was requested to 'facilitate sharing the band with other services.' (footnote omitted). In addition, the ARINC bandwidth requirements are based on transmission of 600 kbps data rates in 6 MHz channels. The report acknowledges that 'the data rate could be accomplished in less bandwidth with more complicated modulation schemes,' but says that 'the less complex schemes are used to maintain the lowest tag cost possible.' (footnote omitted)

Motorola comments, at 4.

9. In sum, the record does not reveal any justification for 6 MHz bandwidths, or for a total of 75 MHz of bandwidth at 5.9 GHz. As noted by the League in its comments, in Europe, the band allocated for DSRC operation, 5.795-5.805 GHz, selected by the *Committee Europeene de Normalization* (CEN), the governing body for European Telecommunications Standards, is

only 10 MHz wide. It accommodates two, 5 MHz channels and short frequency reuse distances. The assumption that additional spectrum is necessary in the United States is purely speculative and based on older technology and slower data rates than will be available in the future. Furthermore, while the League does not oppose an allocation of sufficient size to permit DSRC devices to avoid interference from amateur stations, the Notice in this proceeding would place that burden on amateur stations, and not on DSRC devices. Allocation of 27 MHz of spectrum for co-primary DSRC devices for interference avoidance is, under the circumstances, a complete waste of spectrum. If the devices are operated as Part 15 devices, however, which would have to protect against interference to allocated services, and which would have to tolerate interference from allocated services, then there might be more justification for authorizing Part 15 DSRC operation over the full 75 MHz, to allow DSRC devices to avoid interference from licensed stations.

IV. Alternative Bands Have Not Been Adequately Considered

10. The League's comments noted that the bands above 40 GHz were not adequately considered as substitutes for wideband DSRC functions that require interference protection. Such an allocation would negate any need for a substantial allocation for DSRC at 5.9 GHz. There still is no information in the record as to what the incremental cost of such devices would be if configured for bands above 40 GHz. The Commission's assumption of increased cost, expressed in the Notice is not quantified at all. This is apparently due to the fact that there are no standards for DSRC devices, and apparently no good definition of which functions would be included and which would not.

11. The suitability of the 5.9 GHz allocation, as opposed to bands above 40 GHz, is also

determined by the bandwidths necessary for two-way DSRC systems (roadway-to-vehicle and vehicle-to-roadway). The ARINC study, as discussed above, considered 6 MHz bandwidths. A written *ex parte* statement of 3M Corporation, however, claimed that bandwidths of 5 to 10 MHz were necessary in order to achieve the necessary data rates at the distances between the vehicle and the roadside unit.⁵ It is apparently not clear at all what the necessary technical characteristics are for these systems, and as such, the proposed allocation is premature. The Commission cannot assume, on this record, the inadequacy of the bands above 40 GHz as a substitute for an allocation for DSRC at 5.9 GHz.

V. The Proposed Power Limitations Are Excessive By A Large Margin

12. The comments in support of the DSRC allocation approve, without technical discussion, the proposed power level for licensed DSRC devices specified in the Notice: 30 watts EIRP, but with transmitter power limited to 750 mW.⁶ The comments of Amtech suggested that only EIRP should be specified, as output power limitations would limit design flexibility.

13. The League suggests that the proposed power levels are absurdly high for the specified purposes, and would create interference contours on the order of 10 km from the transmitter in each case. The stated purpose of these devices, according to the Notice, is to communicate between vehicles and roadsides at distances of 30 to 90 meters. The Notice states that the European Prestandard for DSRC systems permits roadside units to operate at up to 2 watts EIRP for communications distances up to 15 meters. It is noted that directional antennas for beacon roadside units are envisioned. The Notice also states that the Commission's intent is

⁵ See the *Ex Parte Presentation* letter of Blooston, Mordkofsky, Jackson & Dickens, filed April 3, 1998 on behalf of the Minnesota Mining and Manufacturing Company, at 2.

⁶ See the Notice, at Appendix A, Section 90.371.

to propose a maximum DSRC limit that is sufficient to permit necessary communications ranges, while limiting the potential to cause harmful interference. If there is to be an allocation for licensed DSRC devices in the 5.9 GHz band, it should be limited to EIRP levels below one watt.

14. EIRPs in the tens of watts are tens of dB more than what is required. As an example, assuming a 0.75-watt transmitter, a 16 dBi gain antenna, a 0 dBi gain receive antenna located 90 meters away, under free-space, line of sight conditions, the receiver would receive a -19.5 dBm signal. A well-designed receiver should be able to detect a signal of about -115 dBm in a 100,000 kHz bandwidth. Assuming that the receiver will not be ideal and that a 20 dB noise margin is desired, a signal of about -75 dBm might be required. This could be obtained with a transmit power of approximately 100 microwatts. There is nothing in the proposal or the comments that justifies power levels that are more than 50 dB greater than what is reasonably required.

15. The use of power levels much greater than what is required will substantially increase the interference potential of these systems. As a few examples, using the proposed 30-watt EIRP level, if that single DSRC transmitter is located on a highway at a high location with a line-of-sight path for a distance of 10 km, the expected level at a modest receiver using a 0 dBi gain antenna located 10 km away would be approximately -60 dBm, approximately 10 dB greater than an "S9" signal, deemed "extremely strong" by communications conventions. The League suggests that this interference contour is not acceptable from systems that communicate over distances of up to only 90 meters. In paragraph 30 of the Notice, the Commission notes that low power levels are appropriate to minimize interference and maximize frequency reuse. In the next paragraph, it notes that DSRC-like operations in the 900 MHz band are permitted

to use 30 watts EIRP, but the Commission also notes that these 900-MHz operations are not limited to the short ranges cited in the ITS America petition. It is, therefore, inappropriate to propose the same 30-watt EIRP limit for 5.9 GHz that is in place for longer-range communications at 900 MHz. At paragraph 39 of the Notice, the Commission expresses concern about the use of passive backscatter technology in the 5.9 GHz band. The League shares that concern. These devices are, indeed, inefficient, requiring tens of dB more power to accomplish the same goals as could be done with transmit powers of less than a milliwatt. The additional cost of a more advanced receiver system are more than offset by the gain in spectrum efficiency, critical in shared microwave allocations. To authorize a new type of system that does not make good use of spectral resources will serve only to increase pressure on other parts of the spectrum.

16. As the Commission correctly notes at paragraph 42 of the Notice, Part 15 currently permits operation of unlicensed devices in the 5.8 GHz range that may be appropriate for DSRC use. Under Part 15 regulations, the Commission has tentatively concluded that 75 milliwatts EIRP is adequate for backscatter operation. This further establishes that 30 watts EIRP is excessive for DSRC. The Commission also notes that part 15 permits unlicensed communications devices to operate with 800 microwatts EIRP, which is more than adequate for communication under poor conditions over distances of 90 meters. In addition, in those few instances in which higher power would be required, the Commission also notes that existing spread-spectrum rules would permit higher-power, compatible operation under Part 15, using up to 4 watts EIRP. Accordingly, under any circumstances, the Commission should limit both transmitter power and EIRP to a far greater degree than the Notice proposes, and EIRP levels

below one watt should be sufficient for any DSRC functions.

VI. Coordination Requirements

17. The League's comments urged that, if the Commission is inclined to permit operation of DSRC devices in the 5.9 GHz band on a licensed basis under Part 90, DSRC system licensees, should be required to coordinate proposed facilities and systems operation with the League, to facilitate interference avoidance and to maintain a joint database that will at least promote compatible sharing of the band. This is especially critical if any public safety communications are to be conducted by DSRC systems in this band, in order to facilitate interference avoidance. The League stated its willingness to undertake a cooperative, voluntary coordination effort with ITS America, to make amateurs aware of the locations and frequencies of new Part 90 DSRC systems.

18. APCO's comments included a similar proposal. According to APCO:

While the spectrum proposed for DSRC is already used for other purposes, DSRC will have extremely limited range and is likely to be restricted to major highways. Nevertheless, the Commission should adopt rules to avoid any potential for harmful interference to public safety operations. A critical aspect of interference avoidance is frequency coordination. APCO is the FCC's certified frequency coordinator for the majority of public safety radio frequencies, and is prepared to assist the Commission as necessary in any ITS related coordination activities.

APCO Comments, at 2.

The League has for years had a cooperative agreement with APCO pursuant to a Memorandum of Understanding, and has the highest respect for APCO and its coordination efforts. The League would agree that, if Part 90 DSRC licensing is to occur at 5.9 GHz, all users of the band should be required to coordinate, and maintain a shared database, in order to avoid interference. The League would be pleased to participate in a cooperative coordination process with APCO, should

the allocation be finalized at 5.9 GHz notwithstanding the League's comments and these reply comments.

VII. Reaccommodation of Displaced Amateur Systems

19. In its Comments, the League requested that, in this proceeding, the Commission propose *at the same time* the amendment of the Table of Allocations domestically to make the Amateur Service and the Amateur-Satellite Service primary at 5.825-5.850 GHz (subject only to protecting Government Radiolocation from interference, and to received interference from Government Radiolocation, and from ISM devices operating under Part 18). Furthermore, the League requested that the Commission modify the Amateur and Amateur-Satellite allocation at 5.650-5.725 GHz to primary status. These actions are necessary to accommodate the reduction in utility that will result as a practical matter from the U-NII allocation at 5.725-5.825 GHz and the proposed DSRC uses in the 5 GHz band, notwithstanding the retention of the amateur secondary allocations at 5.725-5.825 GHz and 5.850-5.925 GHz.

20. There have been no comments on that proposal, and the Commission made no reference to the proposal in the Notice. The League urgently requests that the Commission include the allocation change for the Amateur Service in any final rules adopted in this proceeding. It is a reasonable means of minimizing the impact of addition of new primary users to spectrum in which the Amateur Service is a secondary user. *The Commission should accomplish this in this proceeding, if necessary by further notice of proposed rule making, if it decides to proceed with the proposed 75 MHz allocation for DSRC systems at 5 GHz.*

VIII. Conclusions

21. While the League does not oppose a reasonable allocation of spectrum for DSRC applications, the comments fail to support an allocation of 75 MHz for DSRC, or any allocation of that magnitude for the purpose. There is little record indication of compatibility between DSRC systems and amateur stations, and the Commission cannot on this record presume such. The evidence would indicate that an allocation of 75 MHz is excessive, and fails to account for the efficiencies available from frequency reuse and the intended short range applications. The power level proposed in the Notice is far too high, given the applications intended for DSRC. They would suggest an interference contour of up to 10 kilometers, and given the short range of the transmissions, power levels less than one watt EIRP would be appropriate.

22. Notwithstanding the size of the proposed allocation, the proposed rules should require use of "polite" protocols for DSRC systems. Any newcomer in a mature, multiple-use microwave band incorporating fixed and mobile uses, should be expected and required to utilize such protocols, or to conduct prior coordination with incumbent users. If the Commission makes the extensive allocation proposed in the Notice at 5.9 GHz, it should at the same time mandate either prior coordination between ITS America and the League, or otherwise restrict DSRC facilities to those which incorporate listen-before transmit protocols and frequency-agile transmitters with roaming channel selection.

23. The record is incomplete with respect to appropriate uses, technical specifications, and compatibility with existing users. The Commission cannot justify a 75 MHz allocation for DSRC on the present record. Under the circumstances, the Commission should have more seriously considered the use of bands above 40 GHz for DSRC functions.

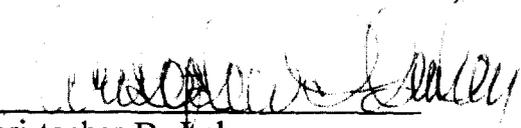
24. The League reiterates that, viewing the 5 GHz band amateur allocation as a whole, the Commission has largely disaccommodated the Amateur Service. The Commission should in this proceeding elevate the remaining portions of the Amateur and Amateur Satellite allocation at 5.650-5.725 GHz and 5.825-5.850 GHz to non-government primary, to insure against future preemption by non-government services with higher allocation status.

Therefore, the foregoing considered, the American Radio Relay League, Incorporated again respectfully requests that the Commission modify its proposal contained in the Notice in the foregoing respects.

Respectfully submitted,

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October 13, 1998

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, of the law firm of Booth, Freret Imlay & Tepper, P.C., do certify that a copy of the foregoing Reply Comments was mailed this 13th day of October, 1998, via U. S. Mail, postage prepaid, first class, to the office of the following:

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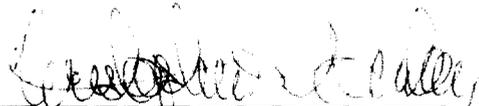
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