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**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

JUL - 8 2002

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
 )  
SPECTRUM POLICY TASK FORCE )  
SEEKS PUBLIC COMMENT ON ISSUES )  
RELATED TO COMMISSION'S SPECTRUM )  
POLICIES )

ET Docket No. 02-135  
DA 02-1311

To: The Chief, Office of Engineering and Technology

**COMMENTS OF ARRL, THE NATIONAL ASSOCIATION  
FOR AMATEUR RADIO**

ARRL, the National Association for Amateur Radio, also known as The American Radio Relay League, Incorporated (ARRL), by counsel, hereby respectfully submits its comments in response to the *Public Notice*, DA 02-1311, released June 6, 2002 (the Notice) by the Spectrum Policy Task Force (SPTF). The Notice asked an extensive series of questions related to spectrum policy, which are open-ended and intended to stimulate discussion rather than limit the issues to be discussed. ARRL, on behalf of its more than 165,000 members, and in the interest of the more than 650,000 licensees of the Commission in the Amateur Radio Service, is pleased to submit its initial comments in response to the Notice.

**I. Introduction.**

1. ARRL is an active participant in many of the Commission's proceedings involving spectrum allocations, and has from time to time expressed concern about certain of the Commission's policies and procedures for making important, and far-reaching domestic allocations decisions. ARRL is uniquely suited to comment in these proceedings, in view of its extensive experience in both international and domestic

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allocation planning. ARRL maintains staff dedicated to participation in international allocations conferences and the preparation meetings therefor. Members of its staff are regularly and consistently appointed to United States delegations to International Telecommunication Union (ITU) conferences and technical meetings. Domestically, ARRL actively participates in Commission rulemaking proceedings affecting Amateur Radio allocations. ARRL's laboratory staff and technical relations staff provide expert engineering input for ARRL's comments and other submissions in such proceedings.

2. This proceeding, though a welcome opportunity to share observations concerning the Commission's allocations processes and policies, is nevertheless inadequate for the purpose. The topics raised by the Commission in the Notice are inordinately comprehensive, and there has been afforded insufficient time to respond in a thorough manner.<sup>1</sup> As such, ARRL will attempt herein to provide responsive input on the matters raised in the Notice, but is constrained to address these and other issues in supplemental fashion by the reply comment date, July 23, 2002.

## **II. Market-Oriented Allocation and Assignment Policies**

3. The first category of issues relates to market-oriented allocation and assignment policies. The Amateur Service, perhaps uniquely, cannot by definition have its spectrum allocations determined by market forces. The Service, and its individual licensees have no money to pay for spectrum, or for licenses, to the extent that they would be competitive with commercial entities bidding for the same spectrum availability. The value to the public of a vital, growing Amateur Radio Service, while perhaps only indirectly measurable in market terms, cannot translate to a marketplace ability to pay for

spectrum, no matter what the mechanism. The public benefits of Amateur Radio, which have been noted repeatedly by Congress and the Commission, include technical self-training and personal advancement in telecommunication skills; public service (and, increasingly, public safety) communications, disaster relief and emergency communications provided on a skilled, but voluntary basis; and the promotion of international goodwill. The non-pecuniary character of Amateur Radio makes it uniquely unsuitable for market-oriented allocation processes. An exclusively market-driven allocation policy would preclude Amateur Radio communications. Nor does the “band manager” concept have any application to Amateur Radio, as the band manager, which acquires spectrum commercially, can have no economic incentive to make spectrum available for Amateur Radio purposes.<sup>2</sup>

4. ARRL does not suggest by the foregoing that market-oriented allocation processes need be avoided, other than as applied to Amateur Radio allocations. Indeed, the “real property” model for spectrum allocation has a corollary concept: that of “public parks” or “public rights of way”: the Amateur Radio allocations are, under this model, set-aside for use by and for the benefit of the general public, as is a public park or right-of-way. Given the wide availability of Amateur Radio to the general public and its value as an educational and public service resource, the concept fits well. The Amateur Radio Service is, in essence, the public park of the radio spectrum, and is as necessary in telecommunications as are the national parks to land use in the United States.

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<sup>1</sup> By *Order*, DA 02-1558, released July 2, 2002, the Office of Engineering and Technology denied two requests for extensions of time to file comments in this proceeding due to the timetable established for the SPTF to provide its report to the Commission.

<sup>2</sup> Indeed, the principal administrative benefit of “band managers” is the removal of the burden on the Commission of individual licensing. The Amateur Service in essence is self-administering as far as licensing matters go. Thus, there is no incremental benefit to the Commission from applying a band manager concept to Amateur Radio in this respect either.

5. Amateur Radio is also, in certain bands, a good match with non-commercial spectrum uses, such as Government uses. NTIA explained this phenomenon accurately in its February, 1995 *Spectrum Reallocation Final Report*, *NTIA Special Publication 95-32*, at Appendix B, page B-2:

The Amateur Radio Service has successfully co-existed with Federal fixed, mobile and radiolocation services (i.e. radar) for nearly fifty years. As indicated in many of the public comments on the Preliminary Report and the FCC NOI, this sharing arrangement has been successful for both Federal and amateur spectrum users. This success is primarily due to the fact that much of the Federal spectrum usage is located away from populated areas, minimizing potential interference as well as the amateur's ability to utilize the guard bands placed between different types of Federal services. In addition to the Federal government, the amateur radio services shares the 2400-2450 MHz segment with non-licensed devices and Industrial, Scientific and Medical (ISM) devices. Recently, amateurs have indicated that there are practical problems sharing spectrum with commercial services that have a relatively high transmitter power, a high number of stations in heavily populated areas, and/or high duty cycle....  
*(footnotes omitted)*

Given the foregoing, it is apparent that Amateur Radio is a good match for sharing with government and certain non-commercial uses, but not with commercial operations. This technical fact, and the definitional mismatch between Amateur Radio and services which can participate in market-driven allocations processes, makes it clear that there must be more than one type of allocations procedure, if any changes in the present processes for making allocations decisions are in order.

6. The Amateur Service has been subjected to extensive reductions in its allocations in certain portions of the spectrum over the past decade, and in reductions in use of other portions. While changes in the allocation table domestically are inevitable and healthy in a dynamic, forward moving technological environment, uncertainty in Amateur Radio allocations leads to reluctance on the part of licensees to invest time and

money in equipment and systems for the use of those bands. The spectrum between 2300 and 2450 MHz is a good example of the problem. The addition, first, of Aeronautical Flight Test Telemetry at 2310-2390 MHz (which, as a practical matter, was never really deployed there) caused the ouster of Amateurs from that large segment. The later addition of the Miscellaneous Wireless Communications Service (MWCS) and Digital Audio Broadcasting between 2305 and 2360 MHz further reduced the availability to Amateurs of the 2305-2310 MHz segment. Recently, the explosion of unlicensed RF devices operated without allocation status under Part 15 of the Commission's rules has severely reduced the utility to Amateurs of the 2400-2450 MHz segment, and to a lesser extent, the 2390-2400 MHz band, which is shared between Amateurs and unlicensed, asynchronous PCS. So, the addition in Amateur allocations of various services has, over time, resulted in the substantial reduction of portions of Amateur allocations. A scant fifteen years ago, the Amateur Service had largely unfettered access to 150 MHz of spectrum at 2.3-2.45 GHz. Now, it has substantially compromised access to 65 MHz, and at least 15 MHz of that is subject to current allocation proceedings that could result in deletion of that residual amount.<sup>3</sup>

7. Whether the Commission adds users to an Amateur allocation on an overlay basis; eliminates the Amateur allocation; or simply adds incompatible sharing partners, the Amateur Service historically has been inadequately reaccommodated in the process.

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<sup>3</sup> The 2.3-2.45 GHz band is not an isolated case. The Amateur Service has an allocation secondary to Government uses at 5.650-5.925 GHz, a total of 275 MHz. The Commission has, in the past five years, made available 100 MHz of that band to National Information Infrastructure (u-NII) devices, and has reduced the Amateur Service access to that band to the extent that it must protect those devices. In addition, shortly thereafter, it allocated 75 MHz of that band to Intelligent Transportation Systems for direct, vehicle-to-roadside (DSRC) communications. Amateurs have to protect that service as well. Now, the Commission is actively considering a petition seeking to expand the u-NII segment by an additional 75 MHz in that same Amateur band. If that petition is successful, Amateur Radio would be left with 25 MHz of available spectrum (to the extent that it could use it consistent with the obligation to protect government operations).

The Commission should view allocation decisions from the perspective of aggregate effect on the burdened service, not merely on an individual basis, and it should require technical sharing studies every time a new allocation is proposed, or a petition seeking to authorize a new unlicensed service is filed. These studies should be provided by the proponent of that new service or unlicensed technology. Most importantly, the Commission should not allow any longer the net reduction in spectrum from allocation decisions such as those discussed above. It should provide equivalent replacement spectrum for the Amateur Service, just as it typically does for displaced users following auctions of occupied spectrum, or allocations to provide for new technologies.

8. The Notice states that the Commission has used two models in the past for transitions to market-based spectrum policy. The first is by allowing existing licensees flexibility in use of spectrum so that it is deployed for the highest value use. This process is fine from an Amateur Radio perspective. Amateur Radio represents the ultimate in flexible regulations. The second is by reallocating bands for flexible use with geographic service areas and auctioning overlay licenses and assignment of less-used spectrum for new and existing licensees. This model works poorly where incumbent radio amateurs are issued a new, flexible-use sharing partner. Flexible assignment and use regulations applicable to a commercial newcomer create an unpredictable interference environment. A case in point is the allocation of the 2305-2310 MHz segment to the MWCS. There is no effective way to coordinate (1) the uses of this band in that flexible commercial radio service, and (2) Amateur Radio operation in the same segment, and the rules do not in any case require such. The allocation decision in that respect was a *de facto* reallocation and displacement of the Amateur Service from that 5 MHz of spectrum.

9. The Notice asks whether incumbent users should be given flexibility within their existing spectrum, in the event of overlay allocations. The Amateur Service has always had the most flexible use regulations of any radio service, so this question is largely inapplicable. Amateur radio operation is sufficiently flexible, and frequency-agile, so that it does have the ability to tolerate certain types of overlay allocations, and as well the ability to make efficient secondary use of, for example, government spectrum. That flexibility is not, however, a complete solution to incompatible sharing decisions, which should be based on technical sharing studies, and not premised merely on allegations of marketplace demand by a newcomer for a new service or new technology.

10. The Notice asks how spectrum use, congestion and demand can be accurately measured and predicted. With respect to spectrum use, monitoring studies are only a partial solution, but an activity that the Commission now apparently does not do at all. Nor does it take spectrum use into account when determining whether to permit a new type of unlicensed device not allowed under current, flexible Part 15 regulations, for example. The typical scenario is that a device manufacturer or industry group petitions the Commission to change the rules to permit a new device or technology, which might have an impact on licensed users in the same band. The petitioner touts the device or technology in terms of benefits to the public, but submits nothing about the effect of the device on the level of use of the band, individually or in the aggregate. In such cases, the petitioner should have the burden of demonstrating the current state of use of the band, by its own technical calculations or measurements in certain types of environments. The Commission does not place this burden on those petitioners, however, and is as the result criticized by Congress, industry, or licensees for its failure to do its own studies. As to

spectrum congestion, that is perhaps the area about which the Commission has the least information, and about which it should have the most. ARRL has commenced a “noise study” which, over time, will contribute to a better understanding about ambient noise conditions. The Commission’s Technological Advisory Council (TAC) is conducting its own noise study. Without the results of those studies, however, which in order to be meaningful require that they be conducted over a substantial increment of time, the Commission cannot know whether its regulations governing licensed or unlicensed devices are overly restrictive, overly liberal, or properly balanced. Anecdotally, any radio amateur who is or has been active in the 2400-2450 MHz band would, upon being asked, likely note that the noise level in that band in all but the most rural environment has, due to the explosive deployment of unlicensed RF devices, reached critical levels already. Predictions can be made from computer models of aggregate noise levels from certain devices. This is another area in which the proponent of a new device or technology should bear the burden of providing studies of both individual and aggregate interference potential and effect on ambient noise in applicable environments of the deployment of the advocated technology. Finally, as to demand, the Commission has not focused on current demand for new technologies and services in the course of allocations decisions, and perhaps properly so. There must be some focus on predicting future demand as well. Amateur Radio allocations, and especially Amateur-Satellite allocations, may not be in demand today, but planned and developing deployment of new technologies necessitates that the allocations for those technologies be firmly established in advance. Spectrum demand requires some degree of foresight and prediction, which is a subject typically within the Commission’s expertise. However, recitations of current

and predicted future demand, and the basis for those recitations, should be a required component of any predicted allocation petition or proposal.

11. Finally, the Commission asks whether more spectrum should be set aside for unlicensed devices, and whether, due to the “commons” aspects of unlicensed use, as congestion rises, spectrum might not be put to its highest valued use. ARRL is of the view that unlicensed devices cannot be authorized by the Commission unless the Commission finds that the devices do not have a significant interference potential to licensed radio services. This is because Section 301 of the Communications Act, which requires licensing, does not allow of any exceptions, and Section 307(e), which does create exceptions to individual licensing requirements, does not exempt RF devices generally. Therefore, notwithstanding the general enabling provision of Section 302(a) of the Communications Act, which gives the Commission the authority to make reasonable regulations governing the marketing and use of RF devices, the Commission does not possess the jurisdiction to authorize RF devices for communications purposes without licenses. Because the purpose of Section 301 of the Communications Act is to avoid interference, the Commission could permit unlicensed devices which operate under certain conditions, such as low duty cycles, or low field strengths, such that they do not create a significant risk of interference to licensed radio services. Therefore, the “commons” issue should not be a problem. If the Commission has created a “tragedy of the commons” problem in Part 15 band segments, then the devices permitted on an unlicensed basis in that band are operated at too high a power level, duty cycle, or are otherwise improperly configured. If additional spectrum is permitted for unlicensed devices, it should be planned such that the authorized devices do not create a “tragedy of

the commons” problem. The Commission has pushed the Part 15 concept beyond the point that it works; no unlicensed device should be permitted to substitute for licensed fixed or mobile radio services. Part 15 devices should be ancillary to those services, and should be used where, individually or in the aggregate, the devices do not preclude licensed, or other unlicensed devices, and operating parameters should be configured to achieve the same result.

### **III. Interference Protection**

12. Are new definitions of “interference” and “harmful interference” needed, in view of increasing incidents of spectrum congestion? ARRL is satisfied with the standard definition of harmful interference, taken from the ITU Radio Regulations, which distinguishes between interference to safety services and non-safety services. The Amateur Service has the ability to tolerate interference in some respects better than do other services, and the flexibility built into the ITU definition of harmful interference regarding “repeated disruption” of communications works well as a practical matter in allocations decisionmaking.

13. Several of the questions in the Notice in this category ask whether there should be more explicit protections for incumbent licensees from harmful interference. There are two points ARRL would make in response to this inquiry. First, in a situation in which unlicensed devices are permitted to operate in a band which is occupied by a licensed user with an allocation in that band, the licensed user should never have to protect the newcomer from interference, and the newcomer should have to protect the incumbent against harmful interference without exception. That has not always been the

case. When the Commission created the u-NII band at 5725-5825 MHz, it stated as follows:

With regard to sharing this band with Amateur operations, we believe that U-NII devices will cause little interference to amateur operations because of the relatively low power with which U-NII devices will operate. Further, we note that the amateur service has access to all spectrum within the 5.65-5.925 GHz range. We therefore believe that amateur operation will be able to avoid using frequencies within the 5.725-5.825 GHz band that are available to U-NII devices, in those rare cases where such avoidance may be necessary.

This policy is incorrect, because it presumes that fixed stations in allocated services should have to move in order to avoid interference from unallocated, unlicensed devices. Also, it does not address aggregate interference characteristics, and presumes incorrectly that all interference to incumbents is from point-source radiators.

14. The second point to make in response to the question of increased interference protection for incumbents is that aftermarket deployment of devices, whether licensed or unlicensed, is an enforcement problem which may or may not be adequately addressed as an enforcement matter regardless of the explicitness of interference protection criteria in the regulations. The Commission's Part 15 regulations are extremely specific right now regarding interference from unlicensed devices to licensed radio services: unlicensed Part 15 devices must accept all interference received from licensed stations or other unlicensed RF devices, and must cease operation if interference to licensed services cannot be remedied. 47 C.F.R. §15.5. However, as a practical matter, this provides no protection to incumbent licensees at all. Many, if not all, of the unlicensed devices are difficult to locate, and the unlicensed operator of the device has no idea of the regulatory obligations imposed by the Commission. The level of cooperation from unlicensed device users is therefore negligible, and the interference problems are unaddressed. The

Commission's Enforcement Bureau is not equipped to deal with this phenomenon, and therefore the only means of interference avoidance from unlicensed devices to licensed services is at the time the devices are marketed to the public, by rules applicable to the manufacturers of the devices.

15. The Commission next asks whether defining power limits, in-band and at service area boundaries, and coordination procedures provide sufficient control over interference, and what other measures are needed. This is an overly narrow view of the proper regulatory scheme for service rules. Interference potential is defined by more than just power levels and coordination procedures, though both are important. The Amateur Service rules strongly encourage voluntary coordination, and provide that Amateurs utilize the least power necessary to maintain communications. Those rules incorporate the proper flexibility for an essentially experimental radio service, and at the same time recognize the historically high compliance characteristics of the Amateur Service. The result is a healthy voluntary coordination procedure for fixed amateur station operation, and minimal incidents of excessive power. Other services are somewhat different, but the characteristics examined must include specification of duty cycle, emission mask, bandwidth, antenna gain and directionality, and other technical considerations. For unlicensed devices, it is especially critical to consider more than just power limits and coordination procedures.

16. Finally on this topic, ARRL strongly disagrees with proponents of rules for interference based on economic models rather than technical characteristics. Efficient interference management cannot be based on economic balancing between the parties using the spectrum, because, from the perspective of the Amateur Service, any economic

model for interference resolution would effectively place it, and other non-commercial services, at the mercy of any commercial device manufacturer or industry group. It also ignores the fact that many interference problems are resolved using technical solutions to the extent of accommodating both parties. The economic model presumes that interference resolution necessitates a preference for one service over another, and an uneven burden, which may not be necessary.

#### IV. Spectrum Efficiency

17. In 1990, the ITU adopted a Report proposing a general definition of spectrum efficiency, as follows:

$$\frac{\text{information transferred over a distance}}{\text{spectrum space used}} \quad \text{or} \quad \frac{\text{communications achieved}}{(\text{bandwidth}) \cdot (\text{space}) \cdot (\text{time})}$$

where the measure of “spectrum use” is defined as the product of bandwidth, space and time.<sup>4</sup> Additional study of spectrum efficiency was conducted by NTIA.<sup>5</sup> ITU Study Group 1 continues its work on this and related subjects and one document captures some other technical considerations applicable to commercial radio systems.<sup>6</sup> Unfortunately, the subject is even more complex than these texts suggest.

18. The Commission assumes, probably correctly, that increased spectrum efficiency will be necessary in the future in order to accommodate increasing demand. This is difficult to address, however, because different technologies offer different approaches to spectral efficiency. Narrowband technologies are still looked upon by the land mobile industry, for example, as the preferred means of increasing the number of

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<sup>4</sup> International Telecommunication Union, *Definition of Spectrum Use and Efficiency*, CCIR Report 662-3, 1990.

<sup>5</sup> Matheson, R.J., *A Survey of Relative Spectrum Efficiency of Mobile Voice Communication Systems*, NTIA Report 94-311, July 1994.

individual channels without decreasing information throughput. Spread Spectrum and Ultra-Wideband technologies offer some potential for overlays upon narrowband incumbent uses. At the same time, revolutionary levels of spectral efficiency can be envisioned by software-defined radios using adaptive frequency selection. Given these various, radically different and in some cases mutually exclusive methods of achieving increased spectral efficiency, it is difficult to map out one that suits all circumstances.

19. Furthermore, some radio services have imposed their own, private-sector efficiency methods, necessitated by the practical obligation to maximize use of already scarce spectrum. The private-sector coordination efforts in the Amateur Service, and in the Broadcast Auxiliary service, are good examples of voluntary, successful coordination plans, which tend to permit the maximum use of a given frequency segment at a given time. Private sector, voluntary coordination tends to work better for scarce spectrum deployment than does mandatory coordination such as that in Part 90 or Part 101 rules, because the regulatory specification of coordination requirements tends to bind the coordinator's flexibility, and dictates, in most cases, less efficient frequency re-use. If a private-sector coordinator can make a fixed microwave path work by changing antenna polarization, or using other customized technical solutions, the freedom to implement those solutions works better than does coordination using less-flexible techniques specified in the Commission's rules. The other benefit of localized, voluntary coordination efforts is that it of necessity takes into account local conditions. Coordination policies for amateur radio repeaters or control link channels in Wyoming, for example, may be far different than those applicable to New York City.

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<sup>6</sup> Thales, *Spectrum Efficiency*, ITU Document 1B/17, August 8, 2001.

20. Overall, ARRL is of the view that spectral efficiency must be evaluated in light of historical developments in individual radio services. It is not possible to generalize, in view of the different needs and different operational characteristics of the various services. In the Private Wireless services, for example, the Commission is considering mandatory conversion deadlines for narrowband emissions, and has already encouraged such through equipment authorization rules. Those same policies would be inappropriate for the Amateur Service, due to the broad array of types of communications conducted and the vastly different operating parameters utilized. At the same time, the Commission has encouraged the use of software-defined radios in the Amateur Service, and development of systems is now ongoing. Mandatory spectrum efficiency standards may be appropriate in some radio services, but not in others, and no change in Amateur Radio Service rules is appropriate in this respect.

21. Most studies of spectrum efficiency have focused on the results achieved from a transmission versus the amount of (bandwidth, space, time) used. Receivers are often overlooked. For example, an emergency channel may be spectrally efficient if no transmissions are made. In other words, it met its objective, which was for a receiver to monitor a channel in case an emergency transmission is made. Another case where receivers are important is their susceptibility to signals not intended for it to receive. An example would be a poorly designed consumer device capable of intercepting, or being overloaded by, signals in adjacent bands. Curiously and with few exceptions, the Commission has refused to consider receiver characteristics in its rules.

22. The traditional administrative procedure used by the Commission and other regulatory agencies is adversarial and sometimes does not result in the best outcome. In

several cases, the Commission has used the Negotiated Regulations rule-making procedure (“Neg-Reg”) with some success.<sup>7,8</sup> Neg-Reg involves the stakeholders in the decision-making process. This method is recommended as a way of considering new applications in already shared frequency bands.

23. Finally, it is difficult to conceive how optimal spectrum efficiency can be achieved with the bifurcated spectrum management system in the United States, i.e., where the NTIA is responsible for Federal Government spectrum and the FCC all other users. The problem is manifested in several ways, including long delays in moving blocks of spectrum between agencies and difficult sharing situations.

## **V. International Issues**

24. It is interesting to note that the Commission has chosen to use a negotiated approach to preparation for World Radiocommunication Conferences, i.e., the WRC Advisory Committee (WAC) and its Informal Working Groups (IWGs). Generally, this process has been an improvement over the traditional notice-and-comment rulemaking process. Stakeholders are given the opportunity to draft proposals and participate in the debates in the IWGs and the WAC. There is a parallel process for Federal agencies taking place in the Radio Conference Subcommittee (RCS) of the Interdepartment Radio Advisory Committee (IRAC). The FCC, NTIA and the Department of State have the final word but the inputs of the stakeholders are taken into account and satisfied to the extent possible in the formation of national proposals to international conferences. Much of the preparation for ITU radio conferences takes place in ITU-R Working Groups and Task

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<sup>7</sup> Pritzker, David M. and Dalton, Deborah S., *Sourcebook on Negotiated Rulemaking*, Administrative Conference of the United States, U.S. Government Printing Office, Washington, DC, ISBN 0-16-048222-4.

Forces. The U.S. preparation mirrors these groups and there is a National Committee review to ensure that consensus is reached. This process works fairly well considering the many complex issues and time pressures. On the other hand, continuous participation is a necessity, and small entities without Washington, D.C.-based staff may find that participating in this process is a substantial burden.

25. The international frequency tables are divided into Regions and these Regions were once considered greatly separated geographically. In the early part of the 20<sup>th</sup> Century, allocations in one Region had little to do with those in other Regions. The advent of satellite allocations, which by nature should be global, had a ripple effect on the allocation table. Mobile allocations were once considered purely domestic became an international issue when such equipment became portable and personal, such as cellular telephones. Unfortunately, the United States often ends up out of step with the rest of the world. This stems from the regional differences in the allocation table and the United States being first to introduce certain new telecommunications technologies.

26. International spectrum management could be improved by the United States taking less of a confrontational approach and working more cooperatively with other countries, particularly those in Europe and Japan. The typical pattern of the Commission's first adopting a domestic rule making then trying to sell it internationally is a cause for concern. The recent UWB First Report and Order is an example of the United States being out front and the other countries scrambling to keep up. ITU studies of interactions between UWB devices and existing radio services are only beginning.

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<sup>8</sup> Luther, William A., Dalton, Deborah S., *A New Approach to Compatibility – Negotiated Regulations in Telecommunications Governing*, International Wrocław Symposium and Exhibition on Electromagnetic Compatibility (EMC 2002), June 2002.

27. The United States could benefit from consultations with other countries prior to adopting domestic rules having international implications. There has been some movement in this direction through greater participation in the Inter-American Telecommunication Commission (CITEL) and observer status at some meetings of the European Conference of Post and Telecommunications Administrations (CEPT).

#### **VI. Conclusions**

28. ARRL is grateful for the opportunity to express the foregoing views, and looks forward to supplementing the record in this proceeding in reply comments. ARRL urges the Commission to provide a more thorough opportunity for parties to submit comments on the spectrum allocations process.

Respectfully submitted,

**ARRL, the National Association For Amateur Radio**

225 Main Street  
Newington, CT 06111-1494

By: Christopher Imlay  
Christopher D. Imlay NSQ  
Its General Counsel

Booth, Freret, Imlay & Tepper, P.C.  
14356 Cape May Road  
Silver Spring, MD 20904-6011  
(301) 384-5525

July 8, 2002

## CERTIFICATE OF SERVICE

I, Niels Quist, hereby certify that I have this 8th day of July, 2002, caused a copy of the foregoing "Comments Of ARRL, The National Association For Amateur Radio" to be sent, via First Class, United States Mail, prepaid to each of the following:

Qualex International  
445 12<sup>th</sup> St., SW  
Room CY-B402  
Washington, DC 20554

Office of Media Relations  
Reference Operations Division  
445 12<sup>th</sup> St., SW  
Room CY-A257  
Washington, DC 20554

Lauren M. Van Wazer, Esq.  
Special Counsel  
Office of Engineering and Technology  
445 12<sup>th</sup> St., SW  
Room 7-C257  
Washington, DC 20554

  
Niels Quist