

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

In the Matter of)
The ARRL's)
"REQUEST FOR DECLARTORY RULING) RM-9259
Titled "Compliance With Applicable Voluntary)
Band Plans in the Amateur Radio Service)

April 30, 1998

To: The Chief, Public Safety and Private Wireless Division
Wireless Telecommunications Bureau

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OBJECTION TO

REQUEST FOR ARRL'S REQUEST FOR DECLARATORY RULING

I am writing in opposition to the ARRL's proposal to establish that voluntary band plans should become mandatory band plans and enforced as federal law. As I will show in my comments, this proposal is bad policy for the Amateur service. Further, the ARRL has not provided substantive evidence as to why a longstanding tradition of voluntary band plans should be summarily converted to mandatory band plans.

I have been a licensed Amateur Radio operator for 26 years since first licensed at the age of 13. I have been involved in most all aspects of Amateur Radio including but not limited to satellite communications, HF operation, ATV, FM repeaters (including assisting in the construction of such systems), digital packet radio operation and especially in emergency communications and public service. Since 1995, I am the publisher of Ham Radio Online, the world's leading independent online web site devoted to Amateur Radio and telecommunications topics. Ham Radio Online is found on the Internet at <http://hamradio-online.com> and is currently read in 86 countries. Professionally, I have spent the last five years at an internationally respected personal computer company where I have been extensively involved in advising the company in regards to wireless communications opportunities. These opportunities include wireless data communications including short range unlicensed PC peripheral radio devices through

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broadband, high speed wireless Internet access using MMDS, LMDS and 38 GHz millimeter wave technologies.

1. The ARRL Fails To Justify the Need for a Mandatory Band Plan

The ARRL has requested that the Commission issue a declaratory ruling saying that Amateur operation not in adherence with existing voluntary band plans violates the Commission's rules for Amateur operations to adhere to "good amateur practices".

The ARRL's approach to this request would have avoided the public comment that this proposal deserves. The Commission is to be commended for recognizing that this issue deserves wider public discussion and for turning this request into a rule making proposal.

The ARRL's letter to the Commission provides little or no justification for why the voluntary band plans should become mandatory. In section (16) of the ARRL's proposal, the ARRL writes that "A committee of the League's Board of Directors has recently reviewed the level of voluntary compliance with band plans in various amateur allocations and ... concluded that there has been some notable deterioration in adherence to the plans....". However, the ARRL's written request provides no quantitative data in to support this assertion. With no hard data regarding the alleged problems with voluntary compliance, there is no argument for establishing new laws.

Next, the ARRL states that "a Commission ruling to adhere to them [band plans] would promote greater awareness of and compliance with those band plans....", but does not explain how converting the voluntary band plans to mandatory will solve the alleged problem.

The ARRL's request does not explore possible reasons that Amateurs are alleged not to adhere to voluntary band plans:

- Is it because the voluntary band plans are out of date with contemporary Amateur operations?
- Is it because the voluntary band plans are not sufficiently communicated to all Amateurs, particularly with regards to local and regional variances to national plans?
- Is it because the voluntary band plans do not accommodate new modes of communication? (This is a significant problem with the existing band plans and is a point I will describe in detail in "6. The ARRL Proposal Will Stifle Innovation in the Amateur Service")

- Is it because existing (and flawed) policy has created large tracts of “privatized” Amateur Radio spectrum, where the Amateur bands are no longer available for general use by licensed Amateurs? (see “7. Existing Band Plans and Rules Have Been Used To “Privatize” Amateur Radio”)
- Since other existing Commission rules are broken today by a variety of licensees (both Amateur and non-Amateur), there is no evidence provided that codifying band plans into federal law will solve the alleged problem.

Merely converting the voluntary band plan concept to mandatory will not resolve the other possible causes for an alleged problem with voluntary band plans.

2. Problems With Implementation of the ARRL’s Proposal

The ARRL notes that there are many band plans in the “multi-tiered approach to band planning” including those recommended by the IARU on the international level, the ARRL on a national level, and by regional “recognized groups”, especially at VHF and UHF. Through an unspecified mechanism, the ARRL states that local variances from national plans are permitted when issued by “recognized coordination bodies”. This begs two questions:

- (1) How is a coordinating body recognized as legitimate?, and
- (2) By what rules are variances permitted?

The lack of definition for these two issues creates a loophole rendering the ARRL’s proposal moot. A group of amateurs can establish a coordinating body for their area and establish variances from national band plans, effectively recreating the flexibility of today’s voluntary band plans, but on a local basis.

Later in these comments (see “6. The ARRL’s Proposal Will Stifle Innovation in the Amateur Service”), I describe how the ARRL’s proposal would stifle, if not eliminate, Amateur experimentation and technical innovation within many Amateur bands. Today’s voluntary band plans (and under the ARRL’s proposal, tomorrow’s mandatory band plans) generally do not set aside any frequencies for experimentation and the development of new technologies. Under today’s voluntary band plans, Amateurs have the flexibility to identify unused frequencies within the Amateur bands in order to conduct experiments. Under the ARRL’s proposal, adopting today’s existing voluntary band plans which have no set aside for

experimentation, future experimentation will come to a halt in many Amateur bands. Unless of course, the ARRL presumes that new band plans will be established that set aside areas for voluntary self assignment and experimentation – in other words, a re-creation of today’s voluntary band plan concept.

The concept of mandatory band plans, potentially modified on a regional level throughout the country, creates a situation where traveling Amateurs will find themselves in violation of federal law, merely because they may not know about local variances to band plans. As I travel around the western U.S., my operation must conform to numerous band plans including those here in Western Washington, Eastern Washington (which are not identical in all respects), Oregon and California. In some areas of the country, simplex VHF/UHF FM channels are spaced every 15 kHz, or 20 kHz, or 25 kHz or 30 kHz. Currently, if the band is quiet and I inadvertently fail to adhere to the 20 kHz scheme, no harm is done. Under the ARRL’s proposal, I would be violating federal law, in the form of Part 97. In some areas, channels are set aside for temporary cross-band repeater operations (such as for emergency communications or public service events), while in others, no such allocations are made today.

The ARRL proposal does not impose any requirements on “recognized coordinating bodies” as to how their local band plans will be publicized to both local and traveling Amateurs. This creates a situation where routine Amateur radio operation will become illegal – even though, according to our customary “listen before talk” protocols, no interference is occurring to anyone.

3. The ARRL’s Proposal Does Not Accommodate Overlapping Band Plans

Under the ARRL’s scheme, a fuzzy collection of band plans and an unspecified multi-tiered hierarchy of plans would be applied to all Amateurs in all locations. In any given locale, the Amateur may, in fact, be subject to several layers of band plans, which may further be in conflict with one another. This is especially a problem for Amateur bands where propagation carries radio signals across regional boundaries. The ARRL proposal provides no mechanism to determine which band plans, when plans overlap, will have precedence. Today, little harm is done under our policy of “listen before talking” to ensure that harmful interference is avoided. Under the ARRL proposal, operation outside of the scope of a band plan where no harm is intended or caused, could be illegal. The result would be that sections of many bands will lie fallow, because the Amateurs in a given area may not make the same use of a band as elsewhere. For

example, there are probably more digital communications enthusiasts in Silicon Valley, than elsewhere. But somewhere else, there may be more balloon launched ATV enthusiasts than digital enthusiasts. A populated metro area may choose to allocate most of a band (e.g. UHF) to FM voice repeaters. In a rural area, local policy may allow that bandwidth to be used for ATV (because there are no UHF voice repeaters.) The existing voluntary band plans enable Amateurs to intelligently make the best choices for their operation at the time of their operation.

4. The ARRL's Proposal Harms Amateurs Ability to Provide Emergency Communications

A classic example of this flexibility occurs during times of emergency communications and at public service events. At such events, and with permission of various repeater owners, we have used repeater output frequencies as simplex frequencies. We have used voice repeaters for packet radio operation. We have conducted cross-band links using simplex or repeater frequencies (with permission of the repeater trustees). Since the existing voluntary band plans do not accommodate these types of operation, our ability to serve the public in time of emergency is harmed if these band plans become law. Specifically, 97.1 (a) states that a primary goal of the Amateur service is "Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications." The ARRL's proposal, as presently stated, would reduce the flexibility that Amateurs have today to creatively solve a communications problem during a public emergency. This impact is contrary to the goals of 97.1(a).

5. The ARRL's Proposal Could Result In Amateur Bands Being Unused

Regional band plans, particularly at VHF and UHF are most appropriate in crowded metropolitan areas and in some instances, for high level repeaters in less crowded areas. To force a regional band plan that makes sense in crowded Los Angeles on to Amateurs located, say 150 miles distant in a rural area, could result in Amateur allocations not being used in rural areas. (It is not practical to subdivide regions into small, localized variances since, as noted earlier, it would be difficult to keep track of so many band plans.) The impact of applying metropolitan band plans to Amateurs living in less populated areas would

likely result in less use of Amateur frequencies outside the metropolitan areas (e.g. allocating most of a band to FM repeaters when local usage might prefer using the bandwidth for ATV or high speed data). Metropolitan areas account for about 10% of the U.S. land mass – so inflexible, federally mandated band plans, produced primarily by a vote of Amateurs living in metropolitan areas, vastly outnumbering those in rural America, could have devastating impacts on Amateur operations outside major cities.

The loss of flexibility to Amateurs living in “the other 90%” of the U.S. would likely result in less effective use and occupation of Amateur allocations. This, in turn, would result in pressure to re-allocate Amateur allocations to other radio services. That, quite bluntly, is completely contrary to all of the goals stated in 97.1.

6. The ARRL’s Proposal Will Stifle Innovation in the Amateur Service

A unique aspect of the Amateur Radio Service, compared to almost all other radio services, is that Amateurs are not assigned specific radio channels but are given access to segments of spectrum to use as they find necessary. This enables Amateurs to experiment and to engage in new forms of communication that may not fit under an existing band plan. For example, packet radio originally took hold on Amateur simplex frequencies located between 144.9 and 145.1 MHz. Under the existing voluntary band plan in use at that time, these frequencies were originally allocated for voice simplex communication. Similarly, at HF, packet radio occupied frequencies voluntarily set aside for RTTY and CW communications. If federal law had enforced the band plan as the ARRL is requesting, the remarkable invention of packet radio technology might have been delayed for years as band plan committees sorted out which frequency or frequencies should be used. (In fact, under the ARRL’s proposal, it might require not merely consensus of the members of a single band plan committee, but consensus between multiple, overlapping band plans committees.)

Instead, the flexibility of Amateur Radio enabled enterprising Amateurs to freely experiment and set up packet radio stations on frequencies that were largely unused. The rest is history – today packet radio has become not only an important Amateur Radio communication mode, but the same equipment and protocols are used widely in commercial systems, helping to boost the nation’s productivity and economic well being. Even non-AX.25 commercial packet networks such as Cellular Digital Packet Data (CDPD)

and Metricom's Ricochet network evolved from the heritage of wide area packet radio networks pioneered by Amateur Radio operators.

Today, many Amateurs wish to experiment with a variety of digital communications technologies. These include broad bandwidth (high-speed) packet radio: frequency hopping spread spectrum, direct sequence spread spectrum, and narrowband digital voice communications. Under the ARRL's proposal, since these new uses do not correspond to an existing band plan (as any new invention will not fall into an existing band plan), the ARRL's proposal to convert voluntary band plans into mandatory plans effectively halts Amateur experimentation. This is contrary to 97.1(b), which states that the purposes of Amateur Radio are "Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art". And according to 97.1(c) the Amateur service exists for the "Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communications and technical phases of the art".

In fact, the written history of the ARRL's proposal, as provided by the Minutes of the 1998 Annual Meeting of the ARRL Board of Directors, held January 16 and 17, suggests that their proposal may be intended to prohibit the use of new and innovating technology within existing VHF and UHF bands:

Minute #72:

NOW, THEREFORE, BE IT RESOLVED, that staff and the General Counsel are directed, without delay, to seek a declaratory ruling from the Commission, pursuant to 1.2 of the Commission's Rules, affirming that operation on frequencies, *or with emissions [emphasis added]*, in conflict with established, voluntary band plans, to the extent that such operation causes interference or other adverse effect relative to other users operating in accordance with applicable band plans, is not good amateur practice, and thus is not in compliance with 97.101(a) of the Commission's Rules.

[Note: The text of the ARRL's proposal to the Commission does not use the same wording as presented in Minute #72. In the Minutes of the Board meeting, the ARRL suggests that Amateurs could continue to select any frequency they wish, provided that it does not cause interference; however, this is not what the Request for Declaratory Ruling has proposed. In the Request for Declaratory Ruling, the ARRL in (14) cites use of the band plan as additional evidence in determining if a given Amateur operation is causing "interference". Merely using a frequency for an operation or an emission type that does not conform to the band plan could be grounds for declaration of causing "interference", which is a violation of Part 97.]

The ARRL's response has been that new modes of communication should be done at UHF frequencies such as:

- the 902-928 MHz band which is shared with several higher precedence non-Amateur users and who have used their primary status in the allocation hierarchy to evict Amateur operations;
- the 1.2 GHz band, a significant portion of which stands to be re-allocated to GPS Phase II;
- the 2.4 GHz band which will soon become the default band for consumer cordless home computer networking (See the work of the Home RF Working Group, at <http://www.homerf.org>), posing severe challenges for Amateur to consumer interference scenarios;
- Or higher frequency amateur allocations with propagation characteristics inappropriate for many general-purpose Amateur applications.

I wonder where packet radio would be today if in 1984, this new mode of digital operation had been restricted to 1.2 GHz or other microwave band? Under the ARRL's proposal, Amateur Radio's contribution to the state-of-the-art in packet radio communications would likely not have ever happened.

As I have written in editorials at Ham Radio Online, the existing process by which voluntary band plans were established and continue to be established has the side affect of locking Amateurs into legacy technologies forever. There is no policy mechanism established to, for example, slowly convert paired 30 kHz Amateur FM repeater channels to digital voice communications technologies. Instead, today's voluntary band plans perpetuate the status quo and cause Amateur innovation to stagnate. This policy problem must be addressed in advance of establishing voluntary band plans as law. An Amateur Radio Service that is stuck with legacy technology is not fulfilling its Part 97.1 goal of advancing the radio art. The ARRL's proposal will eliminate the flexibility that enables Amateurs to invent new technologies and applications of radio technology, like packet radio or the Automatic Packet Reporting System.

The existing voluntary band plans process is heavily politicized, rather than inspired by creative vision, technological leadership, and the need to move the Amateur service forward in to the 21st century. The result is that today's most popular operating mode "wins". The result is vast tracts of Amateur VHF and UHF spectrum allocated exclusively to FM repeater operation, many of which are not heavily used. These policies have harmed the expansion of non-FM voice modes of operation including Amateur Television, narrowband and broadband digital data links, and new technologies like spread spectrum

communications. Indeed, in 1996, the Tucson Amateur Packet Radio group requested a Special Temporary Authority to operate direct sequence spread spectrum in the Amateur bands. The ARRL opposed most all details of TAPR's proposal, partially on the grounds that it could hypothetically cause interference to operations conducted under the existing voluntary band plans.

7. Existing Band Plans and Rules Have Been Used To "Privatize" Amateur Radio

A related problem is that the voluntary band plan and frequency coordination process has been used to "privatize" the Amateur Radio service. Specifically, anyone who establishes a coordinated repeater may choose to declare their repeater as a private system, not open to the public. Under FCC policy, which gives precedence to a coordinated repeater, such frequencies have become de facto "private radio systems". In effect, the construction of a repeater entitles a licensed Amateur radio operator to literally own a public radio frequency. Some private repeater owners have limited their systems' usage to family members only, or to tightly restricted groups which other Amateurs cannot join. Attempts to use the repeater output frequency when the repeater was not in use have resulted in claims that such operation does not correspond to band plans and is "interfering". In (14) of the ARRL's proposal, the ARRL cites examples of persons attempting to use a repeater input frequency for functions other than those contemplated by the voluntary band plan. (Depending upon where you live in the U.S., your repeater input may already be subject to non-Amateur interference from primary licensees in shared VHF and UHF bands. These interference sources include PAVE/PAWS military radar and NOAA/FAA wind shear doppler radar systems. Regardless of any Amateur band plans, interference from non-Amateur sources must be dealt with anyway.)

Repeater owners have legitimate needs to control the use of their systems, including who may or may not use the repeater. However, in certain areas of the country, this policy has created vast tracts of "private, off-limits" repeaters, literally privatizing what was once a public resource known as the Amateur Radio Service. Under the present voluntary band plan process, large sections of the bands have become de facto "private frequencies". The issue of private repeater systems and the privatization of Amateur Radio is a contentious issue – however, converting the flawed voluntary policies in this area to potentially mandatory only serves to further the conversion of Amateur VHF and UHF spectrum to private FM repeater use-only. There is no question that repeater operators have legitimate interests regarding the use of

their equipment; however, the reality is that existing policy is forcing the privatization of the Amateur Radio Service, particularly at UHF. Converting voluntary band plans to mandatory further erodes the flexible public use that has guided Amateur Radio over the years. Rather than confronting the failure of the existing band planning process that has fostered the creation of a privatized Amateur Radio Service, the ARRL merely proposes to create further regulation that enhances the privatization of the Amateur service.

Summary

- The ARRL's proposal to convert voluntary band plans to mandatory, federally enforced band plans is bad policy and fundamentally flawed.
- The proposal moves away from the long-standing tradition by which Amateurs generally select their own frequencies according to their need and in consideration of other operations and *voluntary* band plans. What's next-assigned channelization schemes for the Amateur bands?
- Under the ARRL's proposal, innovation and invention will be stifled. By definition, any new invention does not fall into an existing category of communication and therefore is not likely to be permitted under a mandatory band plan scheme. In fact, per the ARRL's comments regarding TAPR's 1996 request for an STA, the ARRL does not wish to encourage new uses of existing VHF and low UHF bands. The ARRL's proposal locks Amateur Radio into legacy technology. The band planning process today is flawed in that it has no mechanism to encourage the adoption of spectrum efficient technologies. The ARRL's proposal is contrary to official Commission policy for all other radio services; that is to say, to encourage the adoption and deployment of spectrum efficient technology. Under the ARRL's proposal, the Amateur VHF and low UHF bands will primarily serve as a museum of 50 year old FM communications technology, using more spectrum than is required with today's technology. Even low cost narrowband FM, like that used in the cellular telephony's Narrowband Advanced Mobile Phone System (N-AMPS) can fit three users into 30 kHz channels. Under the ARRL's proposal, such innovations cannot be introduced without getting many committees to agree on their usage.

- The ARRL proposal does not provide quantitative data to substantiate the need for this rule change.
- The ARRL proposal does not provide a mechanism to establish the precedence of band plans in the event international, national, regional or competitive local band plans overlap.
- Under the ARRL proposal, the FCC would recognize voluntary band plans established by “recognized groups” but does not define the term “recognized group”. No explanation is given for the mechanism by which a local group becomes accredited to establish policy at variance with national or other recognized band plans. According to Minute 16 of the Minutes of the July 18-19, 1997 ARRL Board Meeting (“NOW, THEREFORE, BE IT RESOLVED, that the ARRL petition the FCC to amend Part 97 of the Rules to incorporate by reference ARRL/IARU band plans”), the ARRL originally intended to propose that the ARRL’s own band plan be adopted as the standard for compliance. Therefore, regional and local variances would have been in violation of the Commission’s rules.
- A mechanism for determining which band plan takes precedence when regional and national plans overlap, is not specified in the proposal.
- Traveling Amateurs could easily find themselves in violation of the law because they have no mechanism for learning of locally approved variances to recognized band plans.
- Converting the flexibility of the existing voluntary band plan and historical Amateur operation of “listen before talking” to a mandatory allocation scheme would likely further entrench the “privatization” of Amateur Radio frequencies into private and restricted use FM-only repeater systems. Oddly enough, this appears to the goal of the ARRL, perhaps because of fear of directly confronting this contentious issue.
- The ARRL attempted to drive this proposal through the regulatory process without seeking comment from the Amateur community. The ARRL’s request for a Declaratory Ruling, rather than using a normal rule making procedure was an attempt to push this proposal through without adequate discussion. The procedure used by the ARRL has caused many Amateurs to conjecture that the ARRL has ulterior motives for this proposal that might, for example, benefit primarily the ARRL. Specifically, the FCC has listed on its 1998 agenda that it would

like to privatize aspects of Amateur Radio administration. Presumably, the ARRL would be a leading candidate to provide administrative services, under contract to the government.

- The ARRL proposal is contrary to the goals set forth in 97.1(b) and 97.1(c).

The Commission is to be commended for treating the ARRL's request as a petition for rule making and establishing a public comment period. I respectfully request that the Commission DENY the ARRL request in all respects and make no changes to the existing voluntary band plan schema.



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