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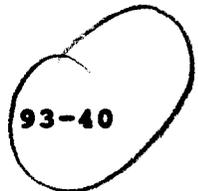
JUL 15 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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

In the Matter of)
)
Allocation of the)
219-220 MHz Band for Use by)
the Amateur Radio Service)

ET Docket No. 93-40



To: The Commission

REPLY COMMENTS OF
THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED

THE AMERICAN RADIO RELAY
LEAGUE, INCORPORATED
225 Main Street
Newington, CT 06111

Christopher D. Inlay
BOOTH, FRERET & INLAY
1233 20th Street, N. W.
Suite 204
Washington, D. C. 20036

July 15, 1993

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SUMMARY

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, submits its reply comments in the captioned proceeding, pursuant to the Notice of Proposed Rule Making, FCC 93-119, 8 FCC Rcd. 2352, released March 22, 1993 (the Notice). The Notice proposes to allocate the 219-220 MHz band to the Amateur Radio Service on a secondary basis, nationwide, for amateur fixed auxiliary stations.

The Commission's files show that eleven parties submitted comments in response to the Notice. Of those eleven, six were amateur radio entities. It is apparent that this proceeding is not a matter of great debate in the communications industry. Those comments filed by non-amateur entities are generally in support of the Notice proposal. There are two comments which seek to impose additional burdens on amateur use of the 219-220 MHz band in order to protect in-band and adjacent-band users. No commenter opposed the allocation outright, though one suggested that the narrow range within which amateurs would be able to conduct interference-free operation was so narrow that there is no real benefit to the allocation. These comments, however, offer a technically flawed analysis, inconsistent with that provided by the League's engineering consultants and with the Commission's own analysis.

While, as the League and Waterway Communications System, Inc. ("Watercom") concluded, there are a few "fine tuning" matters for consideration in connection with this allocation, there is no reason expressed in the comments which should delay the implementation of the allocation at the earliest possible date. The League continues to support the allocation and urges prompt implementation of it.

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

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, by counsel and pursuant to §1.415(b) of the Commission's Rules (47 C.F.R. §1.415(b)), hereby respectfully submits its reply comments in the captioned proceeding, pursuant to the Notice of Proposed Rule Making, FCC 93-119, 8 FCC Rcd. 2352, released March 22, 1993 (the Notice). The Notice proposes to allocate the 219-220 MHz band to the Amateur Radio Service on a secondary basis, nationwide, for amateur fixed auxiliary stations. In response to those comments filed in response to the Notice to date, the League states as follows:

I. Introduction

1. In addition to the comments of the League in this proceeding, the Commission's files show that eleven parties submitted comments in response to the Notice. Of those eleven, six were amateur radio entities. It is apparent that this proceeding is not a matter of great debate in the communications industry. Those

comments filed by non-amateur entities are generally in support of the Notice proposal. There are two comments which seek to impose additional burdens on amateur use of the 219-220 MHz band in order to protect in-band and adjacent-band users. No commenter opposed the allocation outright. While, as the League and Waterway Communications System, Inc. ("Watercom") concluded, there are a few "fine tuning" matters for consideration in connection with this allocation, there is no reason expressed in the comments which should delay the implementation of the allocation at the earliest possible date.

3. Watercom concurs with the Notice proposal, and with the conditions set forth therein for amateur use of the band, but requests that the proposed notification zone size and the timing of notification of AMTS operators in advance of operation be modified somewhat^{1 2}. As the League noted in its comments, this is agreeable for the reasons noted by Watercom. Watercom also suggests that the League be notified by the amateur planning to commence operation in the band as well as the AMTS operator. This is useful in several respects. First, it would insure that the League's database is complete. Second, it would allow the League to flag, for the amateur user of the band, any AMTS facilities that might have been missed in the amateur's calculation of the location of AMTS operators, thus to avoid interference at the outset.³

¹ Specifically, Watercom suggests that the notification zone, within which a prospective amateur user would have to notify the AMTS operators within the notification zone prior to commencement of operation, be expanded from the proposed 250 km to 640 km. Such

4. The immediate need for this allocation for the Amateur Radio Service is underscored by the comments of the Valley Emergency Radio Association, a southern California amateur group. Those comments note the use of intercity packet relay operation, and the use of this technology in disaster relief efforts. Southern California is an area in which the 222-225 MHz band is severely overcrowded, and the need for some available space for digital fixed operation is acute. Because of similar crowding in lower-frequency VHF amateur bands, the 219-220 MHz segment provides the only good opportunity for long-haul digital communications. The Valley Emergency Radio Association also notes the proper role for local amateur frequency coordinating groups in establishing local amateur band plans for the segment, to take into account the interference avoidance obligation of amateurs in the band. The Portland Amateur Radio Club comments also address the amateur frequency coordination issue, noting that the League has established a telephone bulletin board system for frequency coordinator use, and permits rapid notification opportunities from the coordinators to the League for database maintenance.

5. The comments of the Office of the Manager of the National Communications System (NCS) also support the proposed allocation. NCS notes that its continued support of the Amateur Radio Service has been based on the contributions of the Amateur Radio Service to

for notification of the League in the instant context, inasmuch as no FCC Form 610 is required prior to initiation of fixed amateur auxiliary operation, so there is no other source of the information than the individual amateur.

the development of radio technology and at the same time fulfilling communications requirements during times of emergency. NCS opposed the reallocation of the 220-222 MHz band because that action threatened the national security/emergency preparedness

certainly is no basis for the coordination or notification procedures for adjacent band users suggested by UTC.⁴ It is apparently not enough for UTC that amateurs should be deprived of valuable spectrum at 220-222 MHz. In addition, it seeks to restrict amateur use of the replacement spectrum that amateurs require in order to conduct point-to-point operations. Land mobile has no basis for asserting, speculatively and irresponsibly, that amateur operators should be required to give special protection to the land mobile service in an adjacent band. There is absolutely nothing offered by UTC as a technical basis for the coordination/notification restrictions proposed⁵, and the League

⁴ UTC misrepresents the League's position substantially. It suggests that the League supports a coordination requirement for amateur operation in the 219-220 MHz band. What it fails to mention, however, is that the coordination requirement supported by the League is relative only to AMTS licensees: users of the same band. The League has never supported spectrum allocation by receiver deficiency, a particularly abhorrent and wasteful practice which encourages the type of unnecessary hoops through which UTC would have amateurs jump.

⁵ Neither does UTC appear to understand the allocation and protection status of adjacent band users. UTC states at pages 3 and 4 of its comments that:

Simply stating that amateur stations are licensed on a 'secondary' or non-interference basis does nothing to minimize the risk of interference. Without adequate safeguards, authorization of a service on a secondary basis, and without a frequency coordination requirement on the secondary licensee, shifts the burden of identifying and proving interference (after the fact) to the primary licensee.

What is omitted from this analysis is the fact that the land mobile service is not entitled to protection from adjacent band users by virtue of primary allocation status in the 220-222 MHz band. The Amateur Radio Service is not secondary to land mobile in that band, and the establishment of a coordination requirement would be absolutely unique in this context.

opposes any such requirements in the strongest possible terms. If any actual interference problem should arise between an amateur fixed operation at 219-220 MHz and an adjacent band land mobile user at 220-222 MHz, the League would be pleased to assist in the resolution of it. There need be no anticipatory fear of interference, however, nor has UTC any entitlement to any notification or coordination requirement.

7. The only other comments which seek to impose additional restrictions on amateur use of the 219-220 MHz band (beyond what have been agreed upon between the League and Watercom), are those of Fred W. Daniel, d/b/a Orion Telecom (Daniel). Daniel is the licensee of an AMTS facility in the Pacific coast area. He asserts

the Amateur Radio Service. In RM-7747, the League submitted extensive engineering studies relative to co-channel and adjacent channel interference, which revealed that:

Using the worst-case assumptions, amateur repeater and packet transmitters can operate co-channel with AMTS systems with distance separations of less than 92 km. Considering again the co-channel sharing situation, the required distance separation would be less than 50 km in typical cases where 12 dB of discrimination is available relative to the worst-case (e.g. 12 dB discrimination from the polarization or non-mainbeam coupling of the amateur station antenna).⁶

A graphic illustration of the worst-case sharing constraints for amateur packet operation and AMTS users was included in that engineering study, and a copy is attached hereto as Exhibit A. The Commission, at paragraph 26 of the Notice, proposed the instant limitation of amateur operation within 80 km of AMTS stations based on a realistic analysis of the interference potential:

We believe that most amateur operations located at distances between 80 km and 240 km from AMTS operating areas generally would not cause interference to AMTS service. The notification requirement would alert AMTS licensees of the potential source of any interference they might experience. We believe 240 km is an appropriate maximum distance for the notification requirement in view of our proposals for limiting the power levels used by these stations. The 480 km distance...is unnecessary. At distances closer than 80 km to individual AMTS stations, we believe that, although acceptable amateur operations remain possible, the risk of interference to AMTS increases substantially. We therefore believe it appropriate to provide AMTS licensees the maximum, but still flexible, protection afforded by the option of rejecting an amateur operation closer than this distance.

⁶ See, the "Compatibility Assessment of the Amateur Service in the 216-220 MHz Band", 10 April, 1991, prepared by ARC Professional Services Group, Atlantic Research Corporation, at pages 8-9. This study was submitted together with the League's Petition for Rule Making, RM-7747, June 4, 1991.

This Commission analysis, which is essentially twice the recommended separation from the Atlantic Research study, reveals that Daniel's proposed protection criteria are indeed specious and should be rejected. Amateur stations are far less likely to interfere with AMTS stations than AMTS stations are likely to interfere with themselves. AMTS stations use the same bandwidth and antenna polarization, whereas amateur stations in this band will be using a wider bandwidth (approaching 100 kHz) and polarization orthogonal to that used by AMTS. The effect of bandwidth mismatch in decibels can be calculated at $10 \log B1/B2$. Thus, if $B1=16$ (kHz) and $B2=96$ (kHz), there would be a loss of 7.8 dB for bandwidth mismatch. According to the Atlantic Research study, polarization discrimination should afford at least another 12 dB of attenuation. Furthermore, care will be taken to use directional antennas that provide additional attenuation toward the AMTS stations. The proposed Watercom notification distance expansion is, as mentioned above, agreeable to the League, but Watercom did not propose expansion of the 80 km approval zone, nor does it appear necessary.

IV. Conclusions

9. The comments in this proceeding, with but one exception, do not oppose the proposed amateur secondary allocation. The Commission has creatively constructed a flexible approval/notification process which will provide a good basis for cooperative sharing arrangements on a non-interference basis. The Amateur Radio Service will be able to make good use of the 219-220 MHz segment, and can do so confidently, without interference concerns. One essential ingredient of this process is that the League should be notified by amateurs intending to establish operations in the band, so that the database is complete. With the modifications suggested by Watercom, the League requests that the Commission implement the proposed rules in this proceeding at the earliest possible opportunity.

Therefore, the foregoing considered, the American Radio Relay League, Incorporated respectfully requests that the Commission adopt the Notice proposals as amended.

Respectfully submitted,

**THE AMERICAN RADIO RELAY
LEAGUE, INCORPORATED**

225 Main Street
Newington, CT 06111

By


Christopher D. Imlav

CERTIFICATE OF SERVICE

I, Margaret A. Ford, Office Manager of the law firm of Booth, Freret & Imlay, do certify that copies of the foregoing REPLY COMMENTS OF THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED were mailed via U. S. Mail, postage prepaid, first class, this 15th day of July, 1993, to the offices of the following:

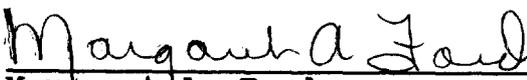
Martin W. Bercovici, Esquire
Keller and Heckman
1001 G Street, N. W.
Suite 500 West
Washington, D. C. 20001
Counsel for Waterway Communications System

Mr. James T. Fortney, President
Valley Emergency Radio Assn.
Post Office Box 4357
Chatsworth, CA 91313-4357

Carl Wayne Smith
Chief Regulatory Counsel
Telecommunications (DOD)
Code AR
Defense Information Systems Agency
701 S. Courthouse Road
Arlington, VA 22204

Jeffrey L. Sheldon
General Counsel
Utilities Telecommunications Council
1140 Connecticut Avenue, N. W.
Suite 1140
Washington, D. C. 20036

Dennis C. Brown, Esquire
Brown and Schwaninger
1835 K Street, N. W.
Suite 650
Washington, D. C. 20006
Counsel for Fred W. Daniel d/b/a Orion Telecom


Margaret A. Ford

* No address was provided by Portland Amateur Radio Club.