

BOOKLET FILE COPY ORIGINAL RECEIVED

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

MAY 7 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Allocation of the) ET Docket No. 93-40
219-220 MHz Band for Use by)
the Amateur Radio Service)

To: The Commission

OPPOSITION TO PETITION FOR RECONSIDERATION

THE AMERICAN RADIO RELAY
LEAGUE, INCORPORATED

Christopher D. Imlay
BOOTH FRERET & IMLAY
1233 20th Street, N. W.
Suite 204
Washington, D. C. 20036
(202) 296-9100

May 17, 1995

No. of Copies rec'd _____
List ABCDE _____

TABLE OF CONTENTS

	<u>Page</u>
Summary	i
Opposition	1
Exhibits A-C	
Certificate of Service	

SUMMARY

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, submits its opposition to the Petition for Reconsideration filed on or about April 17, 1995 by Fred Daniel d/b/a Orion Telecom (Orion). The Orion petition seeks, apparently, not to preclude amateur use of the 219-220 MHz segment, but rather to severely restrict such amateur use, thus to modify the Commission's Report and Order, FCC 95-113, 60 Fed. Reg. 15686, released March 17, 1995.

The Orion petition is devoid of any reasoned support for the restrictions that it seeks to impose on the Amateur community. The suggestion of an increased notification zone is without any technical merit or even an attempt at justification. It is a position that was rejected by the Commission in the Report and Order, and Orion has not tried to justify it further in its petition.

The suggestion that there are large geographic areas that cannot accommodate amateur operation at 219-220 MHz is not established by Orion, as Orion does not account for frequency separations in those coastal and inland waterway areas in which there might be geographic proximity between certain AMTS and amateur stations. Furthermore, even if there is some geographic preclusion, it is not a justification for reconsideration of the Report and Order, which provides for compatible sharing and efficient use of the spectrum.

The existing rules are ample to protect AMTS and provide for amateur use of the band at the same time, and the League has more than sufficient notification data dissemination facilities and database management capability in order to facilitate compatible sharing.

The Orion petition is wholly without merit and must be dismissed.

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

In the Matter of)
)
Allocation of the) ET Docket No. 93-40
219-220 MHz Band for Use by)
the Amateur Radio Service)

To: The Commission

OPPOSITION TO PETITION FOR RECONSIDERATION

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, by counsel and pursuant to §1.429(f) of the Commission's Rules (47 C.F.R. §1.429(f)), hereby respectfully submits its opposition to the Petition for Reconsideration filed on or about April 17, 1995 in the captioned proceeding by Fred Daniel d/b/a Orion Telecom (Orion). Public notice of the filing of the Petition was given May 2, 1995, by Public Notice, Report No. 2069; hence, this Opposition is timely filed. The Orion petition seeks, apparently, not to preclude amateur use of the 219-220 MHz segment¹, but rather to severely restrict such amateur use, thus to modify the Commission's Report and Order, FCC 95-113, 60 Fed. Reg. 15686, released March 17, 1995.

1. Orion, an incumbent AMTS licensee, suggests first that the geographic separation provided in the Report and Order is

¹ Indeed, at page two of its petition, Orion acknowledges that spectrum shortages exist for the Amateur Service. It suggests, however, that these spectrum shortages exist in major metropolitan areas, where AMTS operations exist.

insufficient to prevent "harmful interference". Orion contends that because amateur use of the band is to be permitted on a secondary basis to AMTS operations, the geographic separation should be greater than as adopted. The Report and Order provides that amateurs must notify AMTS licensees 30 days before commencement of operations if the amateur operation is within 640 kilometers of an AMTS base station. In addition, amateurs must obtain written approval from the AMTS licensee prior to operation at 219-220 MHz, if such operation is within 80 kilometers of an AMTS base station. Furthermore, the League, as another of the conditions of amateur operation in the band, is to maintain a database of all amateur and AMTS operation.²

2. Orion's reconsideration petition offers no justification for any increased geographic separation standard, and certainly not anything like the 575 miles requested by Orion and rejected by the Commission. Orion proposed this separation in its comments in this proceeding. Of this, the Report and Order stated:

We also find that amateur operations can utilize the 219-220 MHz segment on a secondary basis without causing interference to other services if their operations are properly engineered and appropriate regulatory safeguards are applied. Specifically, we conclude that amateur services can share spectrum with the primary AMTS. Contrary to Orion's assertion, we believe that with careful attention to frequency and distance separation, amateur stations will be able to share this band with AMTS ship stations. In this regard to insure that interference is not caused to AMTS operations, we are adopting rules that prevent amateur 219-220 MHz operations within 80 kilometers (km) of AMTS stations

² As discussed in detail infra, the League is well along in its notification efforts and database management.

without the AMTS licensee's approval and that require that AMTS licensees be notified of all amateur 219-220 MHz operations within 640 km. We believe that by using directional antennas, frequency separation, cross polarization of signals, and other interference avoidance techniques, amateurs will be able to establish interference free operations. We note that Watercom, the principal AMTS provider, supports the allocation and concurs with most of these conditions or operation for the amateur service.

Report and Order, supra, at ¶12.

Nowhere in the above can the League find what Orion refers to as an acknowledgement by the Commission "that there were known circumstances under which a lesser separation (than that requested by Orion) would result in interference between amateur and AMTS operations." Indeed, the exact opposite is stated, twice, by the Commission. Orion offers no more than a bare, alarmist allegation in order to impose an absurd distance separation that cannot be justified by any technical showing in the record.

3. Indeed, the Commission noted, at ¶30 of the Report and Order, that Orion offered no studies in this proceeding at all to justify its proposed separation distance. Certainly enough, instances of tropospheric ducting could cause signals of any type to propagate over long distances. To account for such, the League concurred with Watercom that increased geographic separation beyond that called for in the Atlantic Research study³ submitted by the

³ "Compatibility Assessment of the Amateur Service in the 216-220 MHz band," 10 April, 1991, prepared by ARC Professional Services Group, Atlantic Research Corporation. This was submitted together with the League's Petition for Rule Making, RM-7747, June 4, 1991.

League in this proceeding was acceptable, and the Commission agreed:

In the interest of maintaining simple but effective regulations, we will require amateur operators in the 219-220 MHz band to notify AMTS licensees of any operation within a 640 km (approximately 400 miles) radius. We believe that this requirement will not significantly burden amateurs and will assist AMTS licensees more easily to identify the source of any interference if, in the unlikely event, such interference occurs. We believe that Orion's...proposed notification distance of 575 miles is excessive and unnecessary. We note that Orion and Paging Systems have not provided any studies to support such a requirement, while technical studies in the record indicate that less separation will prevent interference under all but rare propagation circumstances.

Report and Order, supra, at ¶30.

Indeed, the Notice of Proposed Rule Making (NPRM) in this proceeding had specified a much smaller notification distance than what was finally adopted pursuant to Watercom's suggestion:

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.

Notice of Proposed Rule Making, 8 FCC Rcd. 2352 (1993), at ¶26.

The Atlantic Research study showed that, under worst-case conditions, a 120 km separation distance should prevent co-channel interference and in a typical case the necessary separation is only 70 km. The Commission stated that "under some circumstances interference could be caused at a greater distance, and therefore

are proposing a notification requirement for amateur operations within 240 km of areas served by AMTS." NPRM, at ¶26, fn. 21. Then, at the suggestion of Watercom, the separation distance for notification purposes was increased, with the League's concurrence, to 640 km. This represents a "safety factor" of 520 km over what the Atlantic Research study suggested as a reasonable separation distance, and a 400 km "safety factor" over what the Commission initially proposed as reasonable. The Commission's initial recommended notification zone was twice the separation recommended in the Atlantic Research study. Further separation, as called for by Orion, is not only completely specious, but is completely unreasonable.⁴

4. Orion next argues that because of the presence of AMTS stations in major metropolitan areas, amateurs will not be able to have their spectrum needs accommodated by the 219-220 MHz allocation. Perhaps that is so in a few metropolitan areas, perhaps not. Orion's argument fails to account for frequency shifts within the band to accommodate AMTS stations in a particular location. In

⁴ As noted in the Reply Comments in this proceeding, Amateur stations are far less likely to interfere with AMTS stations than AMTS stations are likely to interfere with other AMTS stations. AMTS stations use the same bandwidth and antenna polarizations, 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 (conservatively stated). Furthermore, use of directional antennas with attenuation toward the AMTS stations will provide ample protection against interference.

any case, it is certainly not a justification for rescinding the shared allocation. If compatible sharing can occur in the band generally, what difference could it make to Orion that AMTS operation in some areas will preclude amateur operation within 80 km of the base stations? The League intends to foster, as the Commission has noted, the development of regional and nationwide data message forwarding systems. Where possible, the 219-220 MHz band will be used. Where it would not, due to proximate AMTS operation, some other band will have to be used. The sharing plan of the Commission for 219-220 MHz is not shown by Orion to be in any sense flawed. Rather, the Commission's meticulous attention to flexible, yet efficient use of the spectrum is exactly that called for by the circumstances in the 216-220 MHz band. The League looks forward to successful coordination with all AMTS users in the 219-220 MHz band, and hopes that Orion will approach the process with greater flexibility and cooperation than its pleadings indicate.⁵

5. Orion faults the Part 97 rules, as stated in the Report and Order, as being insufficient to protect AMTS stations. Orion suggests that the rules do not reflect the obligations contained in the Report and Order. The specific rules suggested by Orion, however, are hardly necessary in order to effectuate the obligation

⁵ Orion asks that its remote base receivers be protected; such is provided for in the Report and Order, and no modifications to the rules are either suggested by Orion to accommodate this, nor are any required. If, however, these are not shown in the Commission's Master Frequency database, it would be incumbent on Orion to notify the League of the location of such receivers, so that amateurs are not required to learn of their location by osmosis.

of amateurs to protect AMTS stations from interference. There is and, as Orion well knows, always has been a great deal of flexibility in the amateur rules, given the nature of the service. It would be wholly out of character to specify levels of directionality of antennas, frequency separation, cross-polarization of signals, and other interference avoidance techniques as suggested. Nor would such additional regulation produce any benefit at all. Attached hereto as Exhibit A is a sample of the registration form devised by the League for database management and for notification purposes. As can be seen from that document, it contains a virtually exhaustive list of amateur transmitter operating parameters, all of which information is available to any AMTS operator. It is available in any form the AMTS operator would like, data or printout, or by copies of the actual forms submitted by amateurs to the League. If there is any concern about interference on the part of the AMTS operator, notification to the League by that AMTS operator after receipt of notification of a proposed amateur operation will, if required, should result in a change in proposed operating parameters sufficient to avoid interference in advance of commencement of that amateur operation. Furthermore, the signed declaration attached as Exhibit B is required of each amateur who notifies the League of an intention to operate in the 219-220 MHz band, confirming that the amateur understands and agrees to the conditions of operation contained in the Rules. A cover letter accompanying those forms, and a copy of the ARRL band plan for the band (Exhibit C), are sent

as a package to those who inquire about the notification procedure. The cover letter explains in detail the procedure for notification and frequency selection, and warns the inquirer not to commence operation until all conditions are complied with, and the person submitting the form has been notified in writing of the result of the notification procedure. These steps are ample as a substitute for detailed regulations called for by Orion.

6. Perhaps most frivolous of all of Orion's suggestions is that amateurs should have to use type accepted equipment in this band. There has never been any indication at any time that amateur equipment, for data communications or otherwise, is inherently unstable, or that it necessitates the expense of type acceptance. There is not a shred of evidence that a type acceptance requirement would protect AMTS or other services in the 219-220 MHz band any better than the existing rules do. Furthermore, the suggestion that a type acceptance requirement could be done "without imposing any undue limitation on the Amateur community" is foolish: the cost of such equipment would become prohibitive for a radio service which conducts public service and emergency communications using systems constructed using post-tax dollars on a completely non-commercial basis.

7. Orion's final point, that the rules are not sufficient in terms of the notification information required, is adequately rebutted by the fact that the League requires ample information on the forms attached hereto as exhibits. If Orion knows of some necessary, additional information not presently included, the

League will be pleased to obtain it in a revised form. To require additional rules mandating the provision of this information is completely unnecessary under the circumstances. The League would have been pleased to inform Orion of the information it intends to collect, had Orion merely asked.

8. In summary, the Orion petition is devoid of any reasoned support for the restrictions that it seeks to impose on the Amateur community. The suggestion of an increased notification zone is without any technical merit or even an attempt at justification. It is a position that was rejected by the Commission in the Report and Order, and Orion has not tried to justify it further in its petition. The suggestion that there are large geographic areas that cannot accommodate amateur operation at 219-220 MHz, is not established by Orion, as it does not account for frequency separations in those coastal and inland waterway areas in which there might be geographic proximity between AMTS and amateur stations. Furthermore, even if there is some geographic preclusion, it is not a justification for reconsideration of the Report and Order, which provides for compatible sharing and efficient use of the spectrum. The existing rules are ample to protect AMTS and provide for amateur use of the band at the same time, and the League has more than sufficient notification data dissemination facilities and database management in order to facilitate compatible sharing. The Orion petition is wholly without merit and must be dismissed. Therefore, the foregoing considered, the American Radio Relay League, Incorporated respectfully requests

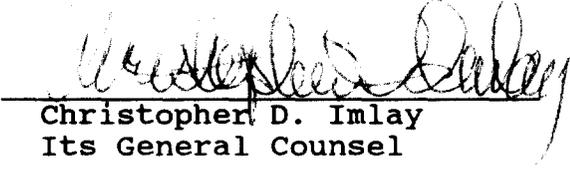
that the Commission dismiss the petition for reconsideration without delay.

Respectfully submitted,

**THE AMERICAN RADIO RELAY
LEAGUE, INCORPORATED**

225 Main Street
Newington, CT 06111

By


Christopher D. Imlay
Its General Counsel

BOOTH, FRERET & IMLAY
1233 20th Street, N. W.
Suite 204
Washington, D. C. 20036
(202) 296-9100

May 17, 1995

NOTIFICATION FORM
Amateur Radio Service 219-220 MHz
Point-to-Point Fixed Digital Message Forwarding Station

**Note: A separate form must be completed for each transmitter. Return to:
 American Radio Relay League, 225 Main St., Newington, CT 06111-1494**

Licensee information: Name (last, first, middle initial) (example: Doe, John H.)
Primary amateur station call sign (example: WB4ABC)
Postal address (example: 12345 Main Street)
City, State, ZIP (example: Anytown, NC 24095)
Telephone (day) (example: 407-234-5678)
Telephone (night)
Facsimile (day)
Facsimile (night)
E-mail address (example: jdoe@aol.com)

Transmitter site characteristics: XSC—Transmitter state (two-letter designator)
XLA—Transmitter antenna latitude (7 characters—deg/min/sec N) (example: 414538N)
XLG—Transmitter antenna longitude (8 characters—deg/min/sec W) (example: 0722625W)
XAD—Height above mean sea level (MSL) (meters)
XCL—Transmitter call sign (to be used at site) (up to 13 characters)
<input type="checkbox"/> Transmit and receive? <input type="checkbox"/> Transmit only? (in 219-220 MHz band)

Transmitter characteristics: FRQ—Center frequency (in MHz) (example: 219:050)
EMS—Emission designator (typically: 70KF1D, where 70K = 70 kHz bandwidth, F1D=frequency modulation, single channel digitized without use of a modulating subcarrier, data transmission)
PWR—Transmitter PEP output power (maximum 50 W)

Antenna characteristics: XAP—Transmitter antenna polarization (H or V)
XAZ—Transmitter antenna orientation (degrees in 3 characters: eg 000=North, 090=east)
XAG—Transmitter antenna gain (dBi) (examples: 08G=8 dBi gain; 12G=12 dBi gain)
XAN—Name of antenna type (Yagi, etc. up to 10 characters)
XAH—Mean height above ground (meters)

ARRL Form 219A (Interim), April 1995, page 2

Signed declaration. I understand and agree that:

1. Use of the 219-220 MHz segment is limited to amateur stations participating, as forwarding stations, in point-to-point fixed digital message forwarding systems, including intercity packet backbone networks. It is not available for other purposes.
2. No amateur station transmitting in the 219-220 MHz segment shall cause harmful interference to, nor is protected from interference due to operation of Automated Maritime Telecommunications Systems (AMTS), television broadcasting on channels 11 and 13, Interactive Video and Data Service systems, Land Mobile Services systems, or any other service having a primary allocation in or adjacent to the band. I will make any station modification, including cessation of operation if necessary, that may be required to resolve a complaint of harmful interference to a radiocommunication service listed herein.
3. No amateur station may transmit in the 219-220 MHz segment unless the licensee has given written notification to the American Radio Relay League, Inc. (ARRL) at least 30 days prior to making such transmissions, in accordance with Section 97.303(e)(3) of the FCC Rules.
4. No amateur station may transmit in the 219-220 MHz segment from a location that is within 640 km of an AMTS Coast Station unless the amateur station licensee has given written notification to the AMTS licensee at least 30 days prior to making such transmissions, in accordance with Section 97.303(e)(4) of the FCC Rules.
5. No amateur station may transmit in the 219-220 MHz segment from a location that is within 80 km of an AMTS Coast Station unless the amateur station licensee holds written approval from the AMTS licensee, in accordance with Section 97.303(e)(5) of the FCC Rules.
6. The ARRL is designated by the Federal Communications Commission as the national contact point for all amateur operations in the 219-220 MHz band, and is responsible for maintaining a database of all amateur operations in the 219-220 MHz band.
7. The information provided on this form will be included in this database, which will be available to the public.
8. The ARRL is not a licensing authority, and no authorization to operate a radio transmitter is expressed or implied by any document issued to me by the ARRL.
9. The ARRL is not a frequency coordinator. The ARRL will cooperate with recognized local amateur coordinators or packet network groups who assist amateurs in selecting operating frequencies on a voluntary basis.
10. Any transmitter that I may operate in the 219-220 MHz band will be operated strictly in accordance with Part 97 of the FCC Rules, with particular regard to Sections 97.303, 97.305, 97.307, and 97.313, or their successors.

Signed _____ Date _____

Remarks/notes:

219-220 MHz Band Plan

Amateur operation in this band is on a secondary, non-interference basis to other users. For details, see FCC Rules, Section 97.303(e).

The ARRL Board of Directors has adopted a band plan calling for ten 100-kHz channels which are centered on the following frequencies:

CHANNEL	A	219.050
CHANNEL	B	219.150
CHANNEL	C	219.250
CHANNEL	D	219.350
CHANNEL	E	219.450
CHANNEL	F	219.550
CHANNEL	G	219.650
CHANNEL	H	219.750
CHANNEL	I	219.850
CHANNEL	J	219.950

Amateur use of the band is limited to forwarding stations in point-to-point fixed digital message forwarding systems, including intercity packet backbone networks, with a maximum transmitter output power of 50 watts PEP. Highly directional antennas and horizontal polarization are strongly recommended.

Use of channels for speeds of less than 56 kilobit/s should be discouraged.

Transmissions should be centered in the channel, even if the bandwidth of the transmission does not occupy the full 100 kHz of the channel. The long term objective for digital transmission on these channels is the highest possible data rate using any permitted modulation or encoding scheme which does not exceed the 100 kHz bandwidth channel.

ARRL Notification Form 219A shall be used to meet the notification requirement of Section 97.303(e)(3). The ARRL has been designated by the FCC as the national contact point for all amateur operations in the 219-220 MHz band and is responsible for maintaining a database of all amateur operations in the band.

April 1995

CERTIFICATE OF SERVICE

I, Margaret A. Ford, Office Manager in the law firm of Booth, Freret & Imlay, do certify that copies of the foregoing OPPOSITION TO PETITION FOR RECONSIDERATION were mailed first class, postage prepaid, this 17th day of May, 1995, to the following:

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


Margaret A. Ford