

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

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FEDERAL COMMUNICATIONS COMMISSION  
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In the Matter of

Amendment of Section 2.106 of )  
the Commission's Rules to )  
Allocate Spectrum for )  
Wind Profiler Radar Systems )

ET Docket No. 93-59

To: The Commission

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

The American Radio Relay League, Incorporated (the League), the national association of amateur radio operators in the United States, by counsel and pursuant to §1.415(c) of the Commission's Rules (47 C.F.R. §1.415(c)), hereby respectfully submits its reply comments in connection with the Notice of Proposed Rule Making and Notice of Inquiry, FCC No. 93-136, 8 FCC Rcd. 2046, released April 1, 1993 (the Notice). In response to certain of the comments filed in this proceeding in response to the Notice proposals and issues, the League states as follows:

**I. Introduction**

1. The League's review of the available comments in the Commission's public reference room reveals a number of comments filed by Part 15 device manufacturers expressing concern about profiler radars at 915 MHz. Entities interested in Automatic Vehicle Monitoring (AVM) operation at 902-928 MHz, and broadcasting entities concerned with interference to remote pickup operation at

450 MHz were also significantly represented in the comments. There are a few general conclusions that can be drawn from the comments in this proceeding, notwithstanding the variety of the sources of comments, and the dual nature of the Notice, relative to 449 MHz and 915 MHz wind profiler radars. The first general conclusion is that detailed regulatory requirements are necessary relative to the location of wind profiler radars at 449 MHz, in order to avoid interference to existing broadcast auxiliary operation at and above 450 MHz, and to amateur radio operations at 447-450 MHz. Another conclusion easily drawn is that there is absolutely no support found in the comments for operation of non-government wind profilers at 449 MHz, and negligible support for such at 915 MHz. No potential user of non-government profilers has appeared in the comments whatsoever. Third, the inquiry concerning allocation of 915 MHz for wind profiler radars should not be pursued further at this time, due to an inadequate record of operational characteristics of such profilers, and the inchoate allocation status of the 902-928 MHz band.

## **II. Location of Wind Profiler Radar Systems**

2. Several commenters indicated skepticism that wind profiler radars would be located away from metropolitan areas and recommended that the footnote limit them only to rural areas. The League endorses this modification. It appears that an objective means of avoiding interference to amateur radio repeaters on the same frequencies, and to other users above 450 MHz would be to

prohibit wind profilers within metropolitan areas. The comments of EnScan, Inc. noted that one of the principal applications of wind profilers is at airport locations. This would place the profiler radars in metropolitan areas, where interference to amateur radio repeater systems would be difficult to avoid. The League supports a requirement that wind profiler radars at locations can be located only outside any designated Standard Metropolitan Statistical Area (SMSA). Those geographical limitations can be easily determined, and are sufficiently large as to preclude location of profiler radars away from co-channel and adjacent channel facilities in other services.

3. The League's comments noted that it is confident that coordination between amateurs and government entities which operate wind profilers relative to necessary geographical separations between profilers and amateur stations would be workable. This, however, was with reference only to the interaction between amateur radio and wind profilers, and is based on the existence of a Memorandum of Understanding between the League and the National Weather Service, which would be conducting the site selection for 449 MHz wind profilers. There is no such coordination plan between broadcasters and the National Weather Service, nor between land mobile users above 450 MHz. A more objective means of avoiding interaction by geographical separation would be to prohibit wind profilers within designated SMSAs.

4. In any case, however, non-government wind profilers should not be permitted at 449 MHz, and there should be required a

specific advance notification requirement so that the League would be notified significantly in advance of either site acquisition for, or installation of wind profilers, their technical characteristics and specific location, so that interference avoidance arrangements can be determined and implemented. The League's comments requested a 180 day advance notification timetable, which is eminently reasonable. Finally, wind profilers should, by rule, bear the burden and cost of minimizing interference to existing amateur radio stations through adjustment of antenna orientation, installation of berms and screening, and selection of alternate sites.

### III. 449 MHz

5. The League recognizes that IRAC has already allocated 449 MHz to government wind profiler radars. The question before the Commission in the Notice relative to 449 MHz is whether simply to record that fact in Part 2 of its Rules (with appropriate conditions for interference avoidance to Commission licensees on the same or adjacent frequencies), or to broaden it to permit non-government wind profiler radars at 449 MHz. With the exception of the United States Environmental Protection Agency (which of course is a government agency), none of the commenters supported any authorization for non-government wind profiler radars at this frequency. There were no comments from potential non-government wind profiler operators, nor any which even predicted a future requirement for non-government profiler operation. This alone

should be determinative to the Commission. On the other hand, and most significantly, the comments of the National Oceanic and Atmospheric Administration were quite explicit in stating that non-government wind profiler radars operating at 449 MHz are unnecessary, as data will be readily available to non-government sources from the NOAA wind profiler network.

6. The comments of several amateur radio entities<sup>1</sup> were opposed to a wind profiler radar allocation at 449 MHz. Assuming that the allocation is to be made, however, they agreed with the League's recommendation that the ARRL Repeater Directory not be used as the database for coordination of site locations. The League urges that the ARRL National Repeater Database be used instead, as it is kept current (as opposed to the annually compiled Repeater Directory), and is intended to serve the coordination purpose. Furthermore, because there are some repeaters that are not listed in the Database, a second step is to consult the amateur radio local area frequency coordinator to ascertain whether there are any unlisted repeaters in the vicinity of a proposed wind profiler radar site. The details of these procedures are being developed in meetings between and among the League, NTIA and NOAA, and should be implemented as agreed upon.

7. The League notes that the IRAC technical standard for wind profiler radars at 449 MHz was made part of the public record, as

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<sup>1</sup> Oregon Packet Experimenters Network, Oregon Region Relay Council, Portland Amateur Radio Club and TEchnology (sic) Radio Amateur Club.

requested in the League's comments. There is justification for a further opportunity for comment on these standards, since that material was not, but should have been, made available prior to the issuance of the Notice proposal.

#### IV. 915 MHz

8. While there is barely negligible support for non-government wind profiler radars at 915 MHz, most commenters are either opposed to an allocation entirely or note, as did the League, that they need considerably more technical data than exists in the record before they can determine the interference potential to other users at 902-928 MHz. What was confusing in the background to this proceeding was Radian Corporation's provision of incorrect technical data, particularly concerning bandwidth, which was later revised. No sufficient record exists now for technical characteristics or sharing potential. Clearly, AVM, amateur and Part 15 users are reasonably apprehensive about sharing with a system that has incomplete, or unknown, technical characteristics, unknown service rules and sites not yet defined. Radian Corporation has provided some supplemental data in this proceeding, but it would be useful to publish complete technical characteristics before moving to the Notice of Proposed Rule Making stage. The data should include results of interference tests between wind profiler radars and other systems already in the 902-928 MHz band. The League, for one, would be willing to participate in such field testing. It would also be useful for Radian to

provide some meaningful results of its experimental license applications.

9. A continuing basic question, and one completely unaddressed in the Inquiry portion of the Notice, is whether the Commission has investigated any alternatives to 915 MHz, and which alternatives are reasonably available. The comments of Metricom, Inc. suggested the use of fixed service spectrum as an alternative. Through participation in CCIR Task Group 8/2, which has studied wind profiler radar allocations in detail, the League has determined that the upper usable frequency limit for wind profiler radars appears to be as high as 1400 MHz. The band 1350-1400 MHz, for example, is already allocated to the radiolocation service, and merits serious investigation as a wind profiler radar allocation as an alternative to the 915 MHz allocation.

#### V. Conclusions

10. As NTIA had decided, without any public participation, on the 440-450 MHz segment as the spectrum within which to replace the present 404.37 MHz experimental frequency for government wind profiler radars, the League would have at least preferred the opportunity to explore options other than 449 MHz. This is, as noted in the League's comments, a uniquely poor choice from the point of view of other users, and it provides a fait accompli for amateurs who have made good shared use of the band to date. They have deployed extensive resources from private, post-tax sources in development of a comprehensive network of repeaters for public

service and emergency communications. It is still possible to provide some frequency flexibility as wind profiler radars designed for a center frequency of 445 MHz could operate on different center frequencies up to  $\pm 4.45$  MHz (1%).

11. The League suggests that the Commission conduct some further discussions with NTIA to determine whether a less intrusive frequency choice than 449 MHz is available. Such an effort would obviate much of the concern about repeater interference, and

profiler radar secondary allocation at 915 MHz, there is considerable opposition from the other users of the 902-928 MHz band, including amateur, AVM and Part 15 users. The allocation status of that band is such that adding additional layers of users on an unplanned basis is to reduce the utility of the band for all concerned. Non-government wind profiler radars will be feasible at 915 MHz only with prior coordination with AVM and amateur users on site selection. Consideration of a wind profiler radar allocation at 915 MHz should not proceed any further unless and until the technical characteristics of profilers have been published and interference tests conducted with affected users of the 902-928 MHz band.

Therefore, the foregoing considered, the American Radio Relay League, Incorporated, respectfully requests that the Commission's proposals in the notice be amended in accordance with the foregoing reply comments, and in accordance with the League's comments previously submitted in this proceeding.

Respectfully submitted,

**THE AMERICAN RADIO RELAY  
LEAGUE, INCORPORATED**

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**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:

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