

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Revisions to Rules Authorizing the Operation of Low Power Auxiliary Stations in the 698-806 MHz Band)	WT Docket No. 08-166
)	
Public Interest Spectrum Coalition Petition for Rulemaking Regarding Low Power Auxiliary Stations Including Wireless Microphones and the Digital Television Transition)	WT Docket No. 08-167
)	
Amendment of Parts 15, 74 and 90 of the Commission’s Rules Regarding Low Power Auxiliary Stations, Including Wireless Microphones)	ET Docket No. 10-24
)	

**COMMENTS OF
THE COALITION OF WIRELESS MICROPHONE USERS**

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SUMMARY

The Coalition of Wireless Microphone Users (“CWMU”) is composed of organizations that provide services to the public incorporating the use of wireless microphones and wireless two-way communications devices. The advent of unlicensed TV Band Devices (“TVBDs”) operating in the “White Spaces” between active broadcast television signals could totally disrupt these services and destroy a wide variety of public benefits. To prevent this, CWMU members seek licenses under Part 74 of the Commission’s rules and the ability to register their uses in the proposed TV Band Device database.

CWMU agrees with the Commission’s tentative conclusion that not all current wireless microphone uses should be eligible for Part 74 licensing. The use of some wireless microphones and two-way devices could continue on an unlicensed basis under Part 15 rules as “Wireless Audio Devices” (“WADs”). However, the Commission should set aside two “safe harbor” channels in every television market in the country where WADs could operate without interference from TVBDs. The use of WADs should be limited to these channels. A third safe harbor channel should be reserved for itinerant licensed users, such as electronic news gathering crews. WADs must be narrowly defined and power-limited.

Other uses need the protection of a Part 74 license. In determining which entities should be eligible for Part 74 licensing, the Commission should examine four criteria: (a) service to the public, (b) the number of wireless units used, (c) the size of the potential audience, and (d) the need for mobility. Commission rules should also permit FCC staff to grant waivers and Special Temporary Authority where appropriate.

The application for Part 74 licenses should permit requests for all available channels and should be flexible with regard to geographic territory and numbers of units.

Additionally, CWMU members welcome advances in spectrum efficiency that do not sacrifice quality.

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**COMMENTS OF
THE COALITION OF WIRELESS MICROPHONE USERS**

The Coalition of Wireless Microphone Users (“CWMU”) files these comments pursuant to the Commission’s “Report and Order and Further Notice of Proposed Rulemaking” in the above-cited dockets.¹ CWMU members have used wireless microphones within the TV Bands for years in a variety of applications that have provided enrichment, enlightenment, and entertainment to the public.

¹ FCC 10-16, released January 15, 2010 (“Order” or “Further Notice”).

1. The Coalition of Wireless Microphone Users.

Members of CWMU include The Broadway League; The Shubert Organization; Theatre Communications Group, Inc.; The Alliance of Resident Theatres/New York, Inc.; The Educational Theatre Association; League of Off-Broadway Theaters and Producers, Inc.; League of Resident Theatres; the John F. Kennedy Center for the Performing Arts; the African Methodist Episcopal Church; Sports Video Group, LLC; National Football League (the “NFL”); National Hockey League (the “NHL”); Major League Baseball; ESPN, Inc.; and News Corporation.

Some of the CWMU members represent a multitude of entities, each of which uses wireless microphones:

- The Broadway League is the national trade association for the Broadway Industry with over 600 members in New York City and more than 250 other cities.
- Theatre Communications Group is the national organization for professional, not-for-profit American theatre, with 473 member theatres.
- The Alliance of Resident Theatres/New York is the service and advocacy organization for New York City’s 280 not-for-profit theatres – operating in all five boroughs.
- The Educational Theatre Association is the professional service organization for middle and secondary theatre education, with nearly 5,000 adult members and 75,000 students throughout the United States.
- The League of Resident Theatres has 76 member theatres which are located in every major market in the U.S., including 29 states and the District of Columbia.
- The African Methodist Episcopal Church has 4,078 churches in the continental United States.
- The NFL’s 32 teams drew 17,952,000 persons during their 2009 regular season.

- In 2008-2009, the NHL hosted 21,475,000 regular-season attendees at games of its 30 teams (24 in the U.S.).
- 73,418,000 fans attended the regular season games of Major League Baseball's 30 teams (29 in the U.S.) in 2009.
- The 119 major college football programs attracted 48,800,000 fans in the 2009 regular season and the 320 major college basketball programs attracted 25,793,000 in the 2008-2009 regular season.

Rather than inundate the Commission with a massive number of similar filings, CWMU members provide these comments which embody the collective input of thousands of American wireless microphone users.

The wireless microphone uses of CWMU members have been carefully and extensively coordinated with other occupants of TV Band frequencies and have neither caused nor experienced harmful interference. The advent of new, unlicensed TV Band Devices ("TVBDs"), however, presents the opportunity for interference to these wireless operations in a way that has never before been experienced. Therefore, to protect their operations and continue to provide the public with the quality of services to which it has become accustomed, CWMU members are seeking eligibility for licenses for Low Power Auxiliary Services ("LPAS") under Part 74 of the Commission's rules and the ability to register in the TV Band Device database.²

CWMU understands that the Commission anticipates benefits to the public from the proposed TVBDs and CWMU appreciates the difficult judgments that the Commission must make in reconciling the continuation of longstanding service to the public with the promise of new, untested technology. With that in mind, CWMU provides these recommendations for regulation that would permit the coexistence of these services.

² CWMU supports the Commission's decision in the Order with regard to the termination of wireless microphone use in the 700 MHz band and CWMU's members understand the need to vacate that spectrum, notwithstanding the significant costs and difficulties involved in making the necessary changes.

2. Unlicensed Wireless Audio Devices.

In the Further Notice, the Commission stated that many users may need only a single or small number of wireless microphones operating simultaneously and that one or two vacant TV channels may be sufficient for these.³ The Commission has proposed that such uses could be accommodated on an unlicensed basis under Part 15 of its rules.⁴ CWMU agrees that two vacant “Safe Harbor” channels could be home to a large percent of the hundreds of thousands of wireless microphones and cue and control devices that have previously been used in the TV Bands without authorization. However, to make this work, the Commission needs to take several significant steps.

First, the Commission must guarantee that two vacant TV channels will be available for Part 15 devices in every television market in the U.S. by prohibiting the use of new TVBDs in those channels. Currently, there are two vacant channels available in only the 13 large metropolitan areas where Private Land Mobile and Commercial Mobile Radio Services operate on TV channels 14-20. The Further Notice points out that only fixed TV Band Devices may operate on channels below 21 and that they may not operate adjacent to occupied TV channels. This does not, however, provide any guaranteed Safe Harbor channels in TV markets without full-power TV stations authorized below Channel 21. Assuming that there are two Safe Harbor channels in every market, as many as 10 Wireless Audio Devices (“WADs”)⁵ could be used in a given location at one time without licenses and without interference from TVBDs.

³ Further Notice, ¶ 111.

⁴ Further Notice, ¶¶ 109-123.

⁵ The term adopted by the Commission in the Further Notice, ¶ 112.

Second, because WADs are not entitled to any interference protection under Part 15 of the Commission's rules, they would be used in large part by amateur and casual users for whom occasional interference would not be disruptive. Frequency coordination is not standard practice among such users and they would pose a significant threat to each other with a daily trial-and-error search for available frequencies. This would also cause interference to other users of those TV band channels. Accordingly, the Commission should place restrictions on WADs:

(a) WADs should be defined to include only wireless microphones and two-way communications devices used in conjunction with a performance or presentation. A broader definition would encourage manufacturers to come up with an array of new devices that would easily crowd out the frequencies and make the operation of wireless microphones in the Safe Harbor channels impractical.

(b) WAD use should be restricted to the two Safe Harbor channels, thus leaving the remainder of the TV bands available for licensed Part 74 users and new TVBDs.

(c) WAD power should be limited at 50 milliwatts and WADs should conform to the same channelization, frequency stability, and bandwidth requirements as currently permitted for wireless microphones under Part 74 rules.

Third, in addition to the two Safe Harbor channels for WADs, CWMU continues to recommend a third Safe Harbor channel⁶ in each television market for licensed itinerant wireless microphone users, such as Electronic News Gathering crews, for which advance registration in the TV Band database is impossible.

⁶ In which TVBDs would not operate.

3. **Expansion of Eligibility for Part 74 Licenses.**

CWMU has advocated for the protection of wireless microphones and two-way cue and control communication devices when used by producers of live performing arts (*e.g.*, theater, opera, symphonies), educational theatre training programs, cultural presentations (including religious presentations), and professional or college sporting events.⁷ These presentations provide demonstrable public services and make significant contributions to the national economy. They also cannot tolerate interruptive interference and there is no high-quality alternative equipment available for use in any other spectrum. Consequently these operations require protection which can only be provided through a license, frequency coordination, and listing in the TV Band Device database.

The Commission's challenge is to draw the line between entities that should be eligible for licensing and those which can operate effectively with WADs. It is not difficult to understand the difference between a high school musical and a high school garage band performing for friends; or between an opera company and a karaoke bar. It is, however, more difficult to structure rules that recognize the difference. CWMU recommends that eligibility for Part 74 licensing should require the satisfaction of four criteria: (a) service to the public; (b) a minimum number of devices required; (c) the size of the audience; and (d) the need for mobility.

(a) **Service to the Public.**

Part 74 licenses should be available to entities that provide a demonstrable service to the public in the form of education, enlightenment, entertainment, culture, and religion. Live

⁷ CWMU believes that uses of audio devices at many conventions and trade shows, classrooms (other than educational theatre training programs), corporate boardrooms, and most civic and community meetings could be accommodated by Part 15 WADs as discussed above.

theatre enriches the fabric of American cultural life. Broadway theatre is the pinnacle of live entertainment, defining and reflecting our culture, heritage, and aspirations. Touring companies bring the Broadway experience to the nation. Local theatres improve the quality of life of Americans by contributing to lifelong learning, preserving our cultural heritage, and fostering creative expression. Performing arts organizations engage the public in a diverse array of cultural and artistic endeavors. Through educational theatre programs, secondary schools, colleges, and universities stimulate students while training the next generation of professionals. Professional and college sports are a cornerstone of the American experience. The lift given to the beleaguered city of New Orleans by its Super Bowl Champion Saints demonstrates how a sports team can embellish community identity and pride. Churches and houses of worship provide moral and ethical leadership and inspire congregations to advocate for human rights and perform works of charity. Each of these institutions deserves protection for the wireless microphone uses that have become integral to its operations.

Accordingly, CWMU requests that eligibility for licenses to operate Part 74 Low Power Auxiliary Stations be expanded to include **(a) producers of live performing arts, cultural and religious presentations, professional or collegiate sporting events, or theatre or performing arts educational programs; or (b) owners of venues where such events take place; or (c) professional audio service contractors in the provision of services for such events.**

This eligibility proposal would permit any of three different entities to hold a license that would protect wireless devices for an event. In some circumstances, the owner of a venue, such as a church, theatre, entertainment complex, or sporting arena, may need a license to protect the wireless microphone uses for various productions at its facility. The two-way cue and

control devices that are licensed under Part 74 are also vital in orchestrating the production and protecting the life safety of crews that often may be under the control of venue owners. The venue itself may own wireless microphones. In other cases, such as a touring musical theatrical company, the wireless microphones may be sewn into costumes or otherwise fall under the ownership and control of the event producer who should be eligible for a Part 74 license. In a third case, a venue owner or an event producer may contract with a professional audio service provider to equip a production or event with microphones and two-way communication devices. In such circumstances, the audio service provider is in the best position to ascertain that the wireless equipment is properly authorized and operated and to register the performance in the TV Band Database. Therefore, the Commission's rules should be flexible enough to permit any of these entities to acquire a Part 74 license.

Under the Commission's rules for TVBDs, registration in the TV Band Device database is crucial to the effective, interference-free operation of wireless microphones. Similarly, in metro areas and at special events, such as the Super Bowl or the World Series, frequency coordination is essential. Consequently, the entity who becomes a Part 74 licensee is accepting a major responsibility and a potentially arduous task. The Commission should remind applicants for expanded Part 74 licenses of these obligations and should make deliberate and willful abuse of the database registration process or failure to coordinate frequency use with other licensees grounds for the termination of a Part 74 license.

The Commission has noted that some producers of live professional arts, entertainment, and sporting events *may* already be eligible for a Part 74 license.⁸ There is some ambiguity under the Commission's current rules, however. Many of these events incorporate

⁸ Further Notice, ¶ 129.

segments that are produced only for the benefit of the members of the public who are attending in person and are not intended for broadcast, such as “game-day” presentations by sports teams and leagues designed to increase the enjoyment of fans. CWMU’s proposal would clarify that wireless microphones and cue and control devices used during such segments are eligible for Part 74 protection even though they may not be used “during rehearsal and during the actual broadcast.”⁹

(b) **Number of Units.**

CWMU believes that the number of microphones and two-way communication devices that an entity uses frequently or on a regular basis can be an indicator of the complexity of its productions and presentations, which could be used as a determining factor for license eligibility.¹⁰ A producer that needs only one or two wireless devices may also be able to fill its requirements with WADs. If the Commission decides to implement number of units as an eligibility criterion, CWMU suggests that the threshold be set at ten. Ten units would also exhaust the available spectrum in the two Safe Harbor television band channels.

(c) **Size of the Audience.**

If an audience is small enough and the venue is intimate, amplification of voice and music will not be required. If no microphone is absolutely necessary, then the event does not require a wireless microphone. CWMU suggests that Part 74 licensing should not be available for events at a venue limited to a capacity of fewer than 99 audience members.

⁹ See 47 C.F.R. § 74.831.

¹⁰ See Further Notice, ¶ 131.

(d) **Need for Mobility.**

One of the major benefits of wireless microphones and wireless communications devices is the freedom of movement that they enable. Cast members and musicians are free to move about the stage; crew members can move through crowded backstage areas amid props and scenery without the fear of tripping over microphone cables. NFL or NHL referees must move around the field or ice when making calls. In contrast, a single speaker at a podium can easily use a wired microphone. Accordingly, an applicant for a Part 74 license should be required to certify that its proposed uses require the mobility of the performers and/or crew that will be using the devices.

4. The Rules Must Allow for Exceptions.

In this relatively complex eligibility scheme, there are likely to be applicants that would provide valuable services to the public even though they might not meet the criteria established under the Commission's rules. Commission staff should be able to evaluate such applications on a case-by-case basis and grant eligibility waivers when appropriate. Similarly, an otherwise ineligible applicant may have a one-time or limited-duration event that has needs similar to those of eligible applicants. Commission staff should be able to grant Special Temporary Authority for such events.

5. The Application Process.

A revised ULS application for a Part 74 LPAS license should contain a checklist of eligibility criteria to which the applicant would self-certify. The certifications should be subject to the penalties that currently apply to willful false statements in FCC Form 601.¹¹ An

¹¹ "WILLFUL FALSE STATEMENTS MADE ON THIS FORM OR ANY ATTACHMENTS ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, §1001) AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. Code, Title 47, §312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, §503)."

applicant under the expanded eligibility criteria should be able to apply for any reasonable number of units, the full range of available TV Band channels, and a wide operating area, including the option of a nationwide license where applicable. Notwithstanding a liberal grant of authority, actual usage would be subject to frequency coordination among other Part 74 users and would require accurate registration in the TV Band Database for each use.

6. Future Improvements in Frequency Efficiency.

The Commission is concerned with the amount of spectrum currently used for wireless microphones in the context of ever-increasing demands for valuable radio spectrum.¹² Many CWMU members are major consumers of wireless microphone technology. They are constantly replacing equipment which undergoes strenuous use in adverse conditions on stage and in sports. When they do so, they seek state-of-the art devices to maintain and improve audio quality for their audiences. These users are also very experienced in the precise coordination that allows the reuse of frequencies within relatively short distances. Any equipment introduced by manufacturers that would increase the efficiency of spectrum use at a reasonable price without sacrificing audio quality would find a ready market.¹³ The Commission might consider a scheme of gradually increasing requirements for spectrum efficiency over time, in consultation with microphone manufacturers and audio engineers. The requirements should apply to equipment sold at the relevant time, rather than equipment already in use, so that users on limited budgets,

¹² Further Notice, ¶¶ 145-49.

¹³ Digital wireless microphones for instance, currently suffer from latency problems which create a “lip synch” problem for audiences. CWMU hopes for advances in technology that could cure this.

such as churches and educational institutions, would not be threatened with the loss of expensive legacy equipment.¹⁴

CONCLUSION

The Commission demonstrated its understanding that certain users of wireless microphones that are not currently eligible for licenses under Part 74 have needs for uninterrupted high quality audio and efficient communications systems in support of a production; such needs are similar to those of existing broadcast licensees under Part 74. The Further Notice also recognizes the need to manage spectrum as effectively and efficiently as possible and the concern over the potential to undermine the promise of unlicensed TV Band Devices. CWMU believes that the plan outlined in these comments will strike the needed balance and serve the public interest.

Respectfully submitted,

THE COALITION OF WIRELESS MICROPHONE USERS

By: /s/

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¹⁴ One possibility would be a program similar to the Corporate Average Fuel Economy regulations that have been helpful in increasing the fuel economy of automobiles sold in the United States. *See* <http://www.nhtsa.gov/portal/fueleconomy.jsp>.