

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions)	GN Docket No. 12-268
)	
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
)	

**REPLY COMMENTS OF THE OFFICE OF THE COMMISSIONER OF BASEBALL,
NATIONAL BASKETBALL ASSOCIATION, NATIONAL FOOTBALL LEAGUE,
NATIONAL HOCKEY LEAGUE, NATIONAL COLLEGIATE ATHLETIC
ASSOCIATION, AND NATIONAL ASSOCIATION FOR STOCK CAR AUTO RACING**

The comments in these proceedings establish the broad cross-section of Americans that regularly use and depend upon wireless microphones in connection with daily activity. Ministers preach to their congregations, television journalists report breaking news, Broadway stars sing crystal-clear songs, and sports leagues put on games all by relying extensively on wireless microphones. National Football League, which filed initial comments,¹ joins the Office of the Commissioner of Baseball, National Basketball Association, National

¹ See Comments of National Football League, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013).

Hockey League, National Collegiate Athletic Association, and National Association for Stock Car Auto Racing (collectively, “Sports Leagues”) to file these reply comments that highlight the importance of wireless microphone technology and respond to proposals raised in the initial Comments.

Sports Leagues urge the Commission to reject the proposal to eliminate the two dedicated wireless microphone channels. As the Comments demonstrate, wireless microphone users have experienced increased interference during live events as white space television spectrum grows scarcer. Eliminating these two reserved channels would effectively make it impossible to operate reliable wireless microphones. The companies advocating for eliminating the wireless microphone channels provide absolutely *no* evidence that these reserved channels are underused, nor do they explain how wireless microphones could continue to operate without the reserved channels.

Viewed as a whole, the Comments reflect the broad view that the Commission should permit producers of large, live events to register in the Part 74 databases to protect their wireless microphones from interference. As mobile devices increasingly crowd the TV spectrum and the Commission reduces the amount of unused television broadcast spectrum through the auction and repacking process, registration will become more important to ensure reliable and uninterrupted access for wireless microphones.

I. WIRELESS MICROPHONES PROVIDE A VITAL PUBLIC SERVICE THAT NO OTHER TECHNOLOGY OFFERS

The Commission heard from a number of parties involved in different aspects of sports programming that wireless microphones are essential for the production and airing of

sporting events.² For instance, when a referee at a National Basketball Association game blows the whistle, a wireless microphone causes the game clock to start or stop. Schools in the NCAA also use wireless microphones in connection with the playing of their basketball and football games. The NHL and NASCAR also make extensive use of wireless microphones in connection with their events. Sports Leagues agree with The Walt Disney Co., the owner of ESPN, that wireless microphones are necessary for the coverage of sporting events because ESPN can “use wireless microphones where laying cable is not possible or practical, or where laying cable may create a safety hazard to the participants and general public in the venue effectively.”³ As Walt Disney notes, many sports arenas entirely ban wired microphones for legitimate safety reasons.⁴

It bears emphasis that the broadcast partners of the Sports Leagues rely extensively on wireless microphones for live reports, studio shows and other programming. It is vital for broadcasters to have the communications tools necessary to bring these games and programs to millions of television screens worldwide.

The Sports Leagues, themselves, also use wireless microphones in connection with programming distributed over their own platforms, to enhance the viewing experience for fans. Major League Baseball’s (“MLB”) MLB Network, for instance, has placed wireless microphones on the umpires and, in many cases, the bases, to capture the audio from in-game events along with the ambient sounds of the game, all of which provide fans with a richer, more immediate viewing experience. Similarly, MLB Network has used a wireless microphone

² See, e.g., Comments of National Football League, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013); Comments of Shure Inc., WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) (wireless microphone manufacturer); Comments of The Walt Disney Co., GN Docket No. 12-268 (filed Jan. 25, 2013) (owner of ESPN).

³ *Id.* at 43.

⁴ *Id.*

behind home plate to capture the distinctive and traditional sounds—the crack of the bat and thwack of the ball in the catcher’s mitt—that play such a central role in the game of baseball. MLB Network, like other Sports League networks, also employs wireless microphones for its on-air talent who are asked to interact with players on the field (*e.g.*, on-the-field interviews). In addition, MLB Network, and other Sports League networks, rely on wireless microphones to provide on-air talent with freedom of movement in the studio including, importantly, in connection with on-camera demonstrations that cannot be performed with wired cables.

Wireless microphones also are vital to the NHL, which holds approximately 1,230 Regular Season Games, in addition to Exhibition and Playoff Games and a number of marquee events (*e.g.*, NHL Winter Classic, Stanley Cup Final, All-Star Game) each season. Wireless microphones and communications enable a wide range of uninterrupted communications, including: (1) in-arena announcement of penalties and reviewed goals by NHL Referees, (2) in-arena interviews and commentary by Game presentation personnel, (3) Pre-Game and Post-Game interviews by national and local broadcasters, (4) commentary and other audio provided by broadcasters from ice level; and (5) coordination and support communication for broadcasters, in-arena Game presentation, and Hockey Operations.

The comments demonstrate that a wide range of other live event producers use wireless microphones for the same reasons as sports leagues.⁵ Like sports leagues, Broadway producers must keep their venues clear of wires. As The Broadway League correctly stated, wireless microphones “allow audiences to clearly hear performers’ voices without interfering

⁵ See Comments of Shure Inc., WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) at 6 (“[O]rganizations large and small, from the church with a few dozen members to mega-churches with thousands of members and Internet webcasts, from the local high school or community theater to Broadway productions, rely upon wireless microphones to deliver clear, real-time audio to their audiences.”)

with freedom of on-stage movement” and “can be unobtrusively positioned or hidden in costumes to enhance the dramatic experience.”⁶ Similarly, National Association of Broadcasters notes the importance of wireless microphones for covering live news events.⁷

For this reason, live event venues have invested significant money and time in wireless microphones. For instance, the Kennedy Center for the Performing Arts uses more than 100 wireless microphones in its two theaters alone.⁸ Similarly, after the Commission required wireless microphones to vacate the 700 MHz band in 2010, the Second Baptist Church spent more than \$100,000 in new equipment.⁹

However, the spectrum available for wireless microphones is shrinking, due to the Commission’s decision to reclaim the 700 MHz band and its 2010 White Spaces Order, which allows mobile broadband devices to operate in the white space. The current repacking and auction of broadcast TV spectrum will undoubtedly lead to less white space available for wireless microphones. The comments reflect significant fears that unless the Commission proceeds with care its spectrum policies could disrupt the use of wireless microphones.

⁶ Comments of The Broadway League, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) at 5-6; *see also* Comments of The Performing Arts Wireless Microphone Working Group, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) at 6 (“Given the thousands of performances held by arts organizations each year, the use of wireless microphones is both essential to producing high-quality performances and also mitigates against significant public safety concerns.”).

⁷ Comments of National Association of Broadcasters, GN Docket No. 12-268 (filed Jan. 25, 2013) at 48 (explaining the importance of wireless microphones for “cueing and control communications and synchronization of TV camera signals that are essential in the production of broadcast programming and electronic news gathering (ENG) activities”); *see also* Walt Disney Comments at 41 (“Wireless microphones are used both in-studio as well as out in the field for coverage of ‘breaking news’ events.”).

⁸ Comments of John F. Kennedy Center for the Performing Arts, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24 (filed Jan. 25, 2013) at 3.

⁹ Shure Comments at 12.

II. THE COMMISSION SHOULD REJECT PROPOSALS TO ELIMINATE THE CHANNELS DEDICATED TO WIRELESS MICROPHONES

In light of the overwhelming benefits of wireless microphones and the increased crowding of the broadcast television spectrum, Sports Leagues urge the Commission to reject the proposal to eliminate the two channels that are dedicated to wireless microphones.¹⁰ The arguments favoring elimination fail for several reasons.

First, the proponents of the proposal provide absolutely no evidence — anecdotal or quantitative — that the two wireless microphone channels are underused. For instance, The Wireless Internet Service Provider Association speculates that “the current two-channel set-aside is overprotective and an inefficient use of spectrum,” yet its 35-page filing contains literally no support for this claim. In contrast, the Commission heard from equipment manufacturers, theatre owners, broadcasters, and NFL that wireless microphone systems are already experiencing interference, and that any further reduction in spectrum would seriously compromise wireless microphone systems.

Second, the advocates for taking away the allocation for wireless microphones avoid addressing the implications of their proposal for wireless microphone users. For instance, Neul Limited summarily suggests that eliminating the two designated channels “would be of enormous value to white space users,”¹¹ -- entirely ignoring the impact on wireless microphone users. Indeed, there is no evidence presented how a sports league or performing arts venue could have *any* assurance that they would have spectrum available if the Commission eliminated

¹⁰ See, e.g., Comments of The Wireless Internet Service Providers Association, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) at 17.

¹¹ Comments of Neul Limited, GN Docket No. 12-268.

the two channels. The Commission needs to move cautiously before rendering wireless microphones unreliable.

Third, the advocates of eliminating channels for wireless microphones incorrectly assume that wireless microphones are an antiquated technology and ignore the significant, recent investments of many users. The Wireless Internet Service Providers Association urges wireless microphone users to move to more “spectrally efficient” digital technology.¹² But many wireless microphones -- including NFL -- *already* have invested millions of dollars to fully transition to digital wireless microphones, and they still experience interference from other spectrum users.

Finally, the proponents overlook the reason that the Commission reserved the two channels in the first place: to protect wireless microphones from interference from mobile devices. The Commission reserved the two channels in 2010, in the same order in which it opened the white spaces to mobile broadband devices (also known as “TV band devices”). The Commission stated that the reserved channels “will provide frequencies where a limited but substantial number of wireless microphones can be operated on any basis without the potential for interference from TV band devices.”¹³ Nothing has changed since 2010 that make that reasoning any less compelling today. Wireless microphones still face interference from mobile broadband devices, and they need the spectrum just as much now as they did three years ago, if not more so.

¹² The Wireless Internet Service Providers Association Comments at 20.

¹³ Unlicensed Operation in the TV Broadcast Bands, ET Docket No. 04-186, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, ET Docket No. 02-380, Second Memorandum Opinion and Order (September 23, 2010) at ¶ 29.

Sports Leagues recognize Consumer Electronics Association's attempt to find a middle ground by proposing elimination of one of the two wireless microphone channels.¹⁴ Unfortunately, this proposal also would significantly impair wireless microphone use. As NFL demonstrated in its initial comments, many sports teams already report interference with two reserved channels. Cutting the number of frequencies in half could dramatically deteriorate the quality of service.

Similarly, Sports Leagues urge the Commission to consider carefully any plans to require wireless microphone users to adopt new technology. For instance, the Public Notice seeks comment on reducing the amount of bandwidth for individual microphones from 200 MHz to 150 MHz. As Audio Technica correctly noted, wireless microphone users already "incurred significant expenses" when the Commission required them to vacate the 700 MHz band.¹⁵ The Commission should avoid any additional requirements that would require users to purchase even more equipment.

III. THE COMMENTS REFLECT A STRONG CONSENSUS THAT PRODUCERS OF LARGE, LIVE EVENTS SHOULD BE ELIGIBLE FOR PERMANENT INTERFERENCE PROTECTION

Commenters overwhelmingly agree that producers of large, live events should receive the ability to become Part 74 wireless microphone licensees and receive protection from interference in the white spaces databases.¹⁶ Sports Leagues agree that licensing is vital to protect wireless microphones from interference. The Broadway League correctly points out that

¹⁴ Comments of The Consumer Electronics Association, GN Docket No. 12-268 (filed Jan. 25, 2013) at 28.

¹⁵ Comments of Audio Technica, WT Docket Nos. 08-166 and 08-167, ET Docket No. 10-24, GN Docket No. 12-268 (filed Jan. 25, 2013) at 14.

¹⁶ *See, e.g.*, Shure Comments at 18 ("The Commission has already recognized that, although many live performances and events are not broadcast or recorded, the producers of such events have the same wireless microphone requirements as the producers of live events that are broadcast or recorded."); Audio Technica Comments at 20.

it makes little sense to allow movie producers to register in the interference database while preventing the producers of live events from having the same protection.¹⁷

The comments contain much discussion about the size of a venue that would be eligible for licensing. Sports Leagues believe that the Commission is best equipped to determine the minimum size, taking into account a range of factors. While the Sports Leagues could accept licensing only for larger venues, such as 10,000 or 15,000 seats, we also recognize that there are many other vital users with smaller venues¹⁸ and urge the Commission to use its expertise to balance the various interests.

Sports Leagues agree with the Kennedy Center that the current unlicensed registration system is not an adequate substitute for licensing.¹⁹ It is impractical to require live event venues to register for temporary access 30 days in advance of an event, and to comply with the burdensome notice and comment period for each event. Only permanent licensing can provide event venues with the assurance that their wireless microphones will be reliable and free of interference.



The comments demonstrate that wireless microphones are essential to the production of live events, including sports and the performing arts. Wireless microphones enable reliable and high-quality communications that no other technology can provide. As the Commission reduces the amount of broadcast television spectrum and simultaneously allows other devices to share the remaining spectrum, it is more important than ever for wireless

¹⁷ The Broadway League Comments at 7 (“There is no ‘Take Two’ in live theatre.”).

¹⁸ See Performing Arts Coalition Comments at 3 (proposing 500 seats); The Broadway League Comments at 11.

¹⁹ See, e.g., Kennedy Center Comments at 5.

microphones to continue to receive two dedicated channels. Without them, wireless microphone users have no guarantee that there will be any available spectrum whatsoever. Similarly, the Commission should allow producers of large, live events to become licensed wireless microphone operators that are entitled to protection from interference.

Respectfully submitted,

Office of the Commissioner of Baseball
National Basketball Association
National Football League
National Hockey League
National Collegiate Athletic Association
National Association for Stock Car Auto Racing

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