

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of:)
)
Reallocation of 27 MHz of Spectrum) ET Docket No. 00-221
) RM-9267
) RM-9692
) RM-9796
) RM-9854

**Comments of:
The Alexander Graham Bell Association for the Deaf and Hard of Hearing**

The Alexander Graham Bell Association for the Deaf And Hard of Hearing (AG Bell) submits these comments in response to the Federal Communications Commission's (FCC or The Commission) Notice of Proposed Rulemaking on the Reallocation of 27 MHz . Our concern is solely with one element of the proposed reallocation, the 216-217 MHz band. AG Bell is strongly opposed to the sale of commercial licenses in this band.

AG Bell is a national organization comprised of parents of children who are deaf and hard of hearing, professionals who serve these children, and adults with hearing loss. Over half of AG Bell members are parents. The organization provides information and support and conducts advocacy on childhood hearing loss, emphasizing listening and speaking as a vehicle for acquiring spoken language. AG Bell children and adults fully utilize technology in order to maximize use of their residual hearing. With hearing technology, hearing aids, and cochlear implants in concert with FM Assistive Listening Devices (ALDs or FMs), many AG Bell constituents are able to attend school, listen to movies and theatrical presentations, attend houses of worship, and have conversations

in noisy public spaces.

We are particularly concerned that children with hearing loss have efficient access to the spoken word at school. FM systems are used by children with all levels of hearing loss - mild to profound. Protecting the radio spectrum used by ALDs is an important step towards ensuring that all Americans who are deaf or hard of hearing have adequate access to spoken communication, regardless of the environment. Protecting this band is also an important factor in protecting the right of children who are deaf or hard of hearing to a free appropriate public education (FAPE).

The Commission has specifically asked for comments regarding ways to “...avoid any detrimental impact on the many valuable incumbent services operating in this spectrum, including auditory assistance devices.”¹ AG Bell and other organizations successfully worked with the Commission in establishing the 216-217 MHz band for ALDs in 1996. We therefore believe that the Commission understands the important role that assistive devices play in the lives of people with hearing impairments. We further believe that the Commission understands that the majority of children with hearing loss who utilize spoken language rely on ALDs to hear their teachers’ and classmates’ voices.

The importance of these devices was highlighted by the extraordinary response to a single request that we made to our membership for input on this issue, a request that resulted in over 400 replies in four weeks. The majority of the comments came

¹Federal Register: January 23, 2001 (Volume 66, Number 15), p. 7444.

from parents whose children rely on FM systems in school. However, a significant number of responses, also urging the protection of this band, came from individual classroom teachers, teachers who specialize in teaching children with hearing impairments, school administrators (i.e. the State of Maine's Department of Education), and adult students, including undergraduate and medical students. Further comments from individuals who are not directly involved in education came from adults with hearing loss, audiologists, theater managers, and the Director of Accessibility for the Kennedy Center in Washington D.C.

Because of their importance, particularly for children in school, we believe that it is unacceptable to subject the functionality of these FM devices to risk. The reports from people who use devices that operate in the 72-76 MHz band shows that the interference experienced in many parts of the country can cause their performance to be inadequate. For this reason many parents and school systems have invested in new equipment that utilizes the 216-217 MHz band. The sale of commercial licenses in this band would only result in interference that would destroy the benefits of this change.

I Assistive Listening Devices

In order to understand the impact of interference on ALDs, it is important to grasp the role that these devices play in the lives of people with hearing loss.

Approximately twenty-eight million Americans experience some degree of hearing loss;

of these, more than six million use hearing aids or cochlear implants.² Personal hearing technologies allow children and adults who are deaf or hard of hearing to successfully attend school, participate in conversation, enjoy music, listen to television and the radio, and participate in normal everyday life. However, hearing aids and cochlear implants have significant limitations. While they are often remarkably effective in allowing a person with a hearing loss to understand a nearby speaker, these devices are much less useful over distance, or in situations where there is significant background noise. Unfortunately, few, if any, classrooms, are adequately free of background noise. Nor are there many places in everyday life that are free from disruptive noise. Unlike most people's ears, which regularly screen out the noise from traffic, other conversations, and even ventilation systems, the microphones in hearing aids and cochlear implants are not sufficiently discriminating to filter out extraneous noise, nor are they capable of picking up speech over distance. In practical terms, this means that a child in school, even if he is paying strict attention and sitting in the front of the room, will miss much of what his or her teacher is saying, if he or she relies on hearing aids without the benefit of an assistive listening device.

FM assistive listening devices are subject to interference from signals from other radio transmitters operating in nearby frequencies. When this happens, the listener does not hear the speaker; usually he or she hears static, or sometimes other radio signals. Many assistive listening devices operate in 72-76 MHz band. AG Bell has

²National Institute on Deafness and Other Communication Disorders, National Institutes of Health at http://www.nidcd.nih.gov/health/pubs_hb/hearingaid.htm#2

received scores of messages from parents, educators, and hearing professionals complaining that interference is very common in devices that use this band. Our members also noted that in the 216-217 MHz band, this interference has heretofore been nonexistent.

We ask the Commission to join us in the conclusion that 216-217 MHz is a safe harbor for the users of assistive listening devices. We ask that this harbor be protected for the people who need it so badly. We ask that the ability of so many Americans, especially children, to hear and to learn not be gambled for simple economic gain.

II AG Bell Survey of Members on Assistive Listening Devices

In January 2001, in response to the Commission's Notice of Proposed Rulemaking, AG Bell conducted a survey of our members. We sent an email to our state chapters asking two questions. Our members were asked to describe the impact of ALDs on their daily lives, especially on the lives of children in school. We also asked members to describe any interference problems that they had experienced.

These two queries produced far more replies than any previous AG Bell membership survey. More than 400 replies were sent in less than four weeks. Almost all of the comments fell into one of two general types. First, the largest number of responses, described the important role that ALDs play in the lives of the people who use them. Second, many respondents noted serious problems that they had experienced with interference.

A. AG Bell's Survey Found a Vital Role for Assistive Listening Devices

At least 350 of the replies, including the most poignant came from parents who described how their children rely on FM systems to participate in school:

I just wanted to write and advocate my son's need for his FM. He absolutely must have continued access to his FM system. As a three year old hearing impaired child, he makes excellent use of his FM. He actually TELLS his teachers, therapists (and parents) that he wants his FM on, that it's not working etc.³

Our daughter is 5 1/2 years old & uses an FM system constantly in school and almost all the time outside the house. Her teacher, speech therapists, etc. are so excited about how she has developed since using the systems. We feel it is a major factor in allowing her to continue in the mainstream of school.⁴

We even received comments from parents who can only talk to their infants through an FM because the babies' hearing aids, combined with their tiny ears, caused too much feedback to be used without the FM.⁵

In addition, several adults discussed the important role that the FM system had played in their lives as students.

The new FM system was a miracle. Suddenly I could hear the teacher without putting forth a major effort. My eyes were not so tired at the end of the day from lipreading. I could take notes in class and listen at the

³Sandra and Timothy Kowalczyk, email to AG Bell February 12, 2001.

⁴Bob & Julie Heidenreich, Fort Dodge, IA email to AG Bell February 12, 2001.

⁵Lisa Nuland, email to AG Bell, February 5, 2001, see also Dan & Julie & Sophia Schlager, email to AG Bell, February 20, 2001

same time. As a result my academic achievements soared.⁶

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⁶Comments of Julia Fitzer, February 26, 2001.

As a child, I was a unique student not because I had a hearing disability, but because I was one of the few students who had the ability to stay focused on my teachers and the lessons at hand. I could be attentive because I was using the FM system, which blocks out all but the one communication channel between me and my teachers.⁷

Many teachers, audiologists, and other professionals echoed the parents' sentiments regarding the importance of FM systems. Teachers, both those who work in mainstream classrooms and specialists for children with hearing impairments, focused on the impact that such devices have on the ability of children to access to language and classroom instruction.

I have seen the clear benefit that the FM units provide to the children: an opportunity to have the teacher's voice directly broadcast into the children's ears; options of hearing just the teacher or teacher and surrounding sounds including the students themselves or just the surrounding sounds and themselves.⁸

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I work with very young children who use FMs on a daily basis. Even in our special preschool for children with hearing loss, with its acoustical treatments, trained teachers of the deaf, and small classes, FMs are essential for the children to get the best possible auditory input in order for their speech and language to develop properly. The airwaves are already so crowded that interference is a constant problem. We have had to "retire" or change some of the frequencies now available to us because of interference that sends shots of white noise or static through the system. We should be increasing the reserved radio bands, not

⁷Nghe Lu email to AG Bell February 19, 2001.

⁸Barbara Taylor, DePaul Institute, Pittsburgh, PA, email to AG Bell, February 19, 2001.

decreasing them!⁹

The teachers also emphasized the extent to which the use of FM devices helped to solve behavior problems. Children who cannot understand what is going on in class get bored. When they get bored, they often misbehave. The professionals often noted how a child who had been a problem in class suddenly became a good student, simply because they were able to hear what was going on.

⁹Susan Chorost, M.A., email to AG Bell, February 12, 2001.

An 8-year-old girl was being treated on behavioral health services for PTSD and ADHD. It was found that the girl had a 40 dB hearing loss. With the help of an ALD, she was able to hear in the classroom, overactive behaviors were extinguished, and she began to catch up to grade level in her school work. She began to make friends and her social skills improved. Within two months she no longer needed behavioral health services.¹⁰

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Alex has done very well with his hearing aids, his language and articulation are age-appropriate and everyone describes him as a social, outgoing boy. Last year he entered nursery school at the East Side Nursery School in Providence, RI-- his first group learning environment. He was in a classroom of 16 children and even though he loved school, he immediately started showing behavioral problems and was coming home tired and angry. In his first months in nursery school, when everyone would sing a song, Alex would hang back watching, never singing, not quite understanding how to participate. ... Our school department evaluated Alex in his classroom and determined that he would benefit by using an FM. In April, 2000 Alex received his Phonak Microlink wireless FM system. Behavioral problems at school disappeared. Alex began singing along with the rest of his class. He came home happy and more energetic. His speech therapist told me to forget anything she had said about his having attention problems-- his distraction clearly had been related to his lack of ability to hear in a group situation. The FM cut through all of that and provided clear hearing of the speaker's voice when his hearing aids couldn't filter all the room noise.¹¹

¹⁰Jean Camberg email to AG Bell, February 10, 2001.

¹¹Daphne Potter email to AG Bell, February 3, 2001.

In addition, we received dozens of letters from adults who described the importance of these devices in their ability to participate in public meetings, enjoy entertainment, and even to simply hold a conversation in noisy areas such as restaurants. The comments include:

Hearing aids only provide me with amplification. However, I need an FM to give me better clarity, better discrimination, and better understanding.

When I go to the theater, museums, and lectures, these facilities have an FM system for better comprehension. I also attend city, state, and federal government meetings where FM systems are provided for hard of hearing attendee participation.

When I visit my doctor, I use a personal FM device to make sure every word is heard clearly. This is important because misunderstanding about medication can be life threatening. In restaurants, I must use an FM device to participate in the conversation and share in the enjoyment of the meal. At home, I use an FM device for TV so volume is not bothersome to others, and it allows me to hear clearly when seated next to someone with normal hearing.¹²

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A hard of hearing father having difficulties with his 16 year old son was fitted with an ALD, and the relationship began to improve as the father was able to hear what his son was saying....¹³

B. AG Bell Survey Demonstrated Significant Problems with Interference

¹²Comments of Joseph Gordon, xxx.

¹³Camberg Id.

The second question asked in our survey concerned the degree to which the use of FM devices was compromised by interference from other sources. Currently, most assistive listening devices operate on the 72-76 MHz band. The Commission opened 216-217 MHz for use by these devices because of problems with interference in the previously used band. Our survey demonstrates that interference from outside sources is a particularly vexing problem in some areas for people who use devices that operate in the 72-76 MHz band.

Responses to our survey that addressed this problem came primarily from educators. We received dozens of comments from teachers who noted that children in their classes were subject to a range of interference problems including occasional static, music from commercial radio stations, CB and walkie talkie conversations from motorists and constructions sites, and police and fire department radios. One child was even subjected to the signal from the drive-through window at the local McDonald's.¹⁴ Adult users of assistive listening devices also complained about interference in theaters, as well as in their work places and homes.

Typical examples of this came from Debra Vance and Karen Dockery :

We had so many problems with the wearing of a system in my son's former school, that he is now refusing to wear one. It was a small school, in a rural area, a large percentage of the faculty served with the local fire dept. as volunteer help and wore the radios used for the 911 calls. Every time they would be paged, my son would hear all sorts of things, as you can imagine, it drove him nuts....he started refusing to wear the system and still does for the fear of what sounds he will hear. He could not have made it through elementary without the system. I can tell you this, my son

¹⁴Jean Irwin, Teacher of the Deaf, Reno, NV, email to AG Bell February 7, 2001.

had on the first day of kindergarten a 356 word vocabulary...¹⁵

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We've used FM systems for almost 12 years, from preschool through high school. Until we switched to the 216 band our daughter experienced interference from all kinds of sources, everything from construction communication (with its not so beautiful language) to radio signals, to cellular phones, to static. Our 216 reception has always been clear and ungarbled by conflicting signals. We

¹⁵Debra Vance, email to AG Bell, February 2, 2001.

are SOOO grateful!¹⁶

One study done by a school district in Colorado found interference on 18 of the 24 channels available to its students.

Over the past several years, students have begun to complain of distracting, and sometimes painfully loud, interfering noises picked up by their FM systems. In fact, at one point, we conducted a systematic, 24 hour per day, fourteen day study of unwanted noises from cell phones, data transmission from overhead airplanes, walkie talkies, and other wireless communication devices. At the end of our study, six of twenty-four possible FM channels were identified as being 'clear'.¹⁷

All of the comments, that addressed the point, noted that the levels of interference were dramatically lower, or nonexistent in the 216-217 MHz band.

Our schools have experienced numerous interference problems with FMs in the majority of their buildings. As the FM industry moved to the use of the 216-217 MHz band our interference problems were solved. Much money has been spent on updating equipment to the 216-217 MHz FMs and many more students are benefitting from FM than were before.¹⁸

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I have been an Educational Audiologist for nearly 30 years. There is a

¹⁶Karen Dockrey, email to AG Bell, February 2, 2001.

¹⁷Joan Aneloski, Coordinator, Hearing Services, School District #51 Grand Junction, CO email to AG Bell, February 9, 2001.

¹⁸Karen Johnson email to AG Bell, February 12, 2001.

history of interference on the 72-76MHz band, which has become more dramatic over the years. I have been most impressed with the consistency of signal and signal clarity over the higher frequency band. Additionally, because of the changes in technology, the majority of children in Maine using FM systems have switched or are in the process of switching to the systems in the 216-217 MHz band.¹⁹

This clearly demonstrates that the 216-217 MHz band serves as an excellent alternative for those who are beginning to use assistive listening devices as well as for those who live in areas where they are forced by interference problems to retire their 72-76 MHz equipment, and move to a new “safe harbor.” The interference problems that plague the 72-76 MHz band make it clear, however, that this harbor will no longer be safe if the FCC allows commercial licensees to operate in the 216-217 MHz band.

III The Sale of Licenses in the 216-217 MHz Band Would Infringe on the Right of Children to use ALDs in Special Education as Guaranteed Under Federal Law

The Individuals with Disabilities Education Act (IDEA) (20 U.S.C. 1400 et. seq.) guarantees that children with disabilities shall have access to a Free Appropriate Public Education (FAPE). The law defines FAPE as education including special education and related services provided free of cost to parents and according to the terms of an Individual Education Program (IEP) written for each eligible child. The IEP is a plan which, reflecting the strengths and needs of an individual child, describes the services that the child shall receive. Under the IDEA, the provisions of a child’s IEP have the

¹⁹Eileen Peterson, Educational Audiologist, Statewide Educational Consulting Services, State of Maine, email to AG Bell, February 12, 2001.

force of law. For children who are deaf and hard of hearing, the provisions of the IEP usually include the use of ALDs including FM systems. This means that the child's local school system is obligated under Federal Law to provide him or her with a functioning ALD.

The Regulations promulgated by the U.S. Department of Education with respect to the IDEA place further responsibility on the local school system to ensure that all hearing aids used by children in school, are functioning properly.²⁰ Since most ALDs are integrated with the hearing aids used by children in school, we believe that this requirement would also apply to those devices. This means that there is an explicit obligation on any school district which has a child whose IEP includes an FM system to ensure that the system is free from interference.

Because of the difficulties that many school districts are experiencing with FMs that operate in the 72-76 MHz band, many districts and parents have purchased equipment which functions in 216-217 MHz.²¹ We believe, based on the problems currently experienced by children in school, that the sale of commercial licenses in the 216-217 MHz band will cause a significant risk of interference. To now sell off licenses in this band would allow interference that would render such ALDs used by children ineffective. We further believe that the lack of an effectively working FM system would constitute a violation of the statutorily guaranteed rights of every child whose IEP calls

²⁰34 C.F.R. §300.303.

²¹Eileen Peterson, Educational Audiologist, Statewide Educational Consulting Services, State of Maine, email to AG Bell, February 5, 2001.

for the use of such a device. This means that this sale may conflict with Federal law, and that it may, further, leave states without the ability to provide services that are mandated by Federal Law.

IV Conclusion

The facts in this situation are as clear as they are compelling. To the children and adults who rely on assistive listening devices to participate in school and normal daily activities, these devices are indispensable. Experience has shown that when commercial users and individuals with hearing loss share the use of a band of spectrum, the people with hearing impairment, the people whose need for the technology is most acute, suffer. The only possible conclusion from this is that the bands of the radio spectrum used by these devices must be protected.

We appreciate the Commission's expressed concern that the users of this band be protected. However, we do not believe that there is any way to give the degree of assurance that these users deserve, while simultaneously opening it to commercial use. We believe that if there is a chance that commercial use will cause interference in this band, then the only reasonable solution is to refrain from selling commercial licenses in this band.

Respectfully Submitted,

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