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April 7, 1998

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

**HAND-DELIVERY**

Ms. Magalie Roman Salas, Esq.
Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

Re: Ex Parte Presentation in PR Docket No. 89-552;
GN Docket No. 93-252 and PP Docket No. 93-253

Dear Ms. Salas:

On April 3, 1998, the undersigned, together with David C. Thompson, President and CEO of SEA, Inc. (hereinafter "SEA") and Lisa M. Higginbotham of this firm, made an oral ex parte presentation to the Commission personnel listed below regarding issues raised in various petitions for reconsideration of the Third Report and Order and Fifth Notice of Proposed Rulemaking, 12 FCC Rcd 10943 (1997) (Third Report and Order) in the above-referenced proceeding. The persons to whom these presentations were made are as follows:

Office of Commissioner Harold Furchtgott-Roth
(Paul Misener)

Office of Commissioner Gloria Tristani
(Karen Gulick)

In accordance with Section 1.1206 of the Commission's rules, we are submitting an original and one copy of this letter summarizing the oral ex parte presentations.

During the presentation, SEA urged the Commission to resolve the issues raised in the pending petitions for reconsideration in the 220 MHz proceeding expeditiously so that the 220 MHz auction could commence as quickly as possible. In this regard, SEA noted the Commission's announcement, by Public Notice released on March 17, 1998, that it was delaying the 220 MHz auction to an unspecified date. See Public Notice,

"FCC Announces Delay of 220 MHz Service Auction," DA 98-526 (released March 17, 1998). Over the years, the 220 MHz service has been plagued by significant delays in the ability to deploy service, due to uncertainties stemming from court challenges, ongoing regulatory proceedings, and licensing freezes. In light of this, SEA must make a decision as to whether it will continue to participate in the 220 MHz service and, therefore, respectfully requests that the petitions for reconsideration be decided by April 17, 1998.

SEA also raised concerns about efforts to exempt paging operations from, or the elimination of, the spectrum efficiency standard that was adopted in the Third Report and Order. Although it may be preferable as a general policy matter to allow the marketplace to drive technology choices, this policy must be applied in such a way that takes into account the uniqueness of the 220 MHz radio service. In this regard, SEA believes that the unique and special history of the 220 MHz service fully justifies retention of the spectrum efficiency standard in this band at this time. As Commissioners Ness and Chong noted in support of the spectrum efficiency standard, the 220 MHz band was specifically allocated by the Commission as a commercial testbed for the development of spectrally efficient technology. See Third Report and Order, 12 FCC Rcd at 11156, 11158-11160 (statements attached). Indeed, the Commission consistently has expressed a commitment to the development of spectrally efficient technology in the 220 MHz band. See "Prior FCC Pronouncements on Narrowband at 220 MHz" (attached).

Relying on the FCC's prior commitment to foster spectrum efficiency in this band, manufacturers have poured millions of dollars into research and development of spectrally efficient narrowband technology. As a result of numerous litigation and regulatory delays (see attached Statement of Rachelle B. Chong), these manufacturers have had no opportunity yet to recoup their enormous research and development costs. In light of this history, maintaining a spectrum efficiency standard for this band is fair and appropriate at this time.

Respectfully submitted

Thomas J. Keller

Counsel for SEA, Inc.

Enclosures

cc: Paul Misener, Esq.
Karen Gulick, Esq.

## PRIOR FCC PRONOUNCEMENTS ON NARROWBAND AT 220 MHZ

Since 1983, the Commission has repeatedly assured the public, the Congress and the Court of Appeals that the 220-222 MHz band will be used for narrowband technology:

1) 1983 Report on "Future Private Land Mobile Telecommunications Requirements" recommended narrowband, i.e., "5 kHz channeling" for this band.

2) 1987 NPRM: Reallocation of this band will "provide an opportunity for the further development of narrowband technologies."

3) 1988 Allocation Order: "The public interest will be served by providing dedicated spectrum for the development of narrowband spectrum efficient technologies," which "must be afforded a reasonable opportunity to gain full acceptance in the marketplace."

4) 1989 Reconsideration of Allocation Order: Reallocation of 220-222 MHz band is necessary to encourage development of narrowband technologies because other land mobile bands "would not allow narrowband technologies to develop fully due to current use and channeling plans."

5) 1989 NPRM proposing service rules: Reallocation of the 220-222 MHz band was done "with the intention of affording spectrally efficient narrowband technology an opportunity to develop and gain acceptance in the marketplace."

6) Hearing Before House Committee on Government Operations on May 11, 1989: Purpose of reallocating of the band from amateur service to land mobile service was to promote development of "narrowband" land mobile radio technology.

7) In 1990, in its brief in ARRL v. FCC, the Commission told the court that it had reallocated the 220-222 MHz band from amateur to land mobile for the specific purpose of encouraging the development of "narrowband" land mobile radio technology.

8) 1991 Report and Order adopting channel plan and service rules: The purpose of the reallocation was "to encourage the development of narrowband technology in underused spectrum;" also, requiring each channel to be an "individual 5 kHz channel" was justified as "consistent with the reasoning for making this allocation available."

9) In 1993, in its brief in Evans v. FCC, the Commission told the court that spectrum in the 220-222 MHz band had been reallocated "for the exclusive use of narrowband operations," and to promote "the development of narrowband technology..."

10) The 1997 Third Report and Order adopting a spectrum efficiency standard stated that one of the principal goals in establishing the 220-222 MHz band was "to encourage the development of spectrally efficient technologies." Third Report and Order, at ¶ 113.

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

In the Matter of

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| Amendment of Part 90 of the Commission's Rules To Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service | ) | PR Docket No. 89-552<br>RM-8506 |
| Implementation of Sections 3(n) and 332 of the Communications Act<br><br>Regulatory Treatment of Mobile Services | ) | GN Docket No. 93-252 |
| Implementation of Section 309(j) of the Communications Act -- Competitive Bidding | ) | PP Docket No. 93-253 |

# THIRD REPORT AND ORDER; FIFTH NOTICE OF PROPOSED RULEMAKING

**Adopted: February 19, 1997** **Released: March 12, 1997**

**Comments Due: April 15, 1997 Reply Comments Due: April 30, 1997**

By the Commission: Chairman Hundt approving in part, dissenting in part, and issuing a statement; Commissioners Ness and Chong issuing separate statements.

## Separate Statement
## of
## Commissioner Susan Ness

*Re: Use of the 220-222 MHz Band, PR Docket No. 89-552*

Today we close a decade-long initiative to license services using spectrum-efficient technologies in the 220-222 MHz band. Our decision removes restrictions on the types of technology that can be used, increases the flexibility of licensees to provide any fixed or mobile services, allows for the expeditious licensing of remaining spectrum by competitive bidding, and furthers our statutory mandate to encourage development of new and spectrally efficient technologies.

I disagree with those who advocate allowing only the current 5 kHz channel plan. The better approach is the one we take here to introduce flexibility for the channels and allow the newer technologies to be implemented by placing the channel bandwidth decision with the bidders and the marketplace. The channels will be auctioned in either adjacent or non-adjacent groups based upon the former channeling plan. Bidders may purchase, trade, aggregate, or partition in any fashion they wish. We also propose to permit spectrum disaggregation. Using these tools, licensees will be able to obtain the specific channel bandwidth(s) they desire.

In the Notice, we tentatively concluded that allowing channel aggregation should be accompanied by a spectral efficiency requirement at least equivalent to that obtained through 5 kHz channelization. The requirement here is based upon the one adopted unanimously last year in our Refarming proceeding, Docket 92-235. It is technology-neutral, attainable, flexible, and will sunset in five years.

Continuing to use the 220 MHz band as a commercial testbed for spectrum-efficient technologies furthers the purposes set out in our competitive bidding authority, Section 309(j) of the Communications Act. This Act requires, among other things, that we "protect the public interest in the use of the spectrum" and promote its "efficient and intensive use."

This Congressional directive within our competitive bidding authority is, of course, consistent with the goals and requirements expressed elsewhere in the Act. For example, Section 7 requires that we encourage (not merely permit) the provision of new technologies to the public. Similarly, Section 303(g) requires that we "study new uses for radio" and "generally encourage the larger and more effective use of radio in the public interest."

Congress would not have charged us separately to ensure efficient spectrum use if competitive bidding itself was sufficient to attain this objective. Competitive bidding provides an incentive for *economically efficient* service, but does not necessarily result in use of the most *spectral efficient* technology.

Because we have not imposed an efficiency requirement in other auctionable bands, the need is more compelling to continue the experiment in this small two-megahertz wide band. Here, licensees can experiment with spectrally-efficient, state-of-the-art technologies without interfering with older, less efficient ones.

Dale Hatfield, in his 1995 paper "The Economic Impact of Refarming" -- submitted in our Refarming proceeding -- demonstrates the value of spectrum efficiency. Hatfield explains that increasing efficiency to 5 kHz (from 7.5 and 6.25 kHz) in just the 150 and 450 MHz private bands would increase the number of available paired channels by 32 percent, resulting in the creation of over 8,000 service jobs and thousands more manufacturing jobs. Hatfield estimates that in an auction, the *additional* spectrum capacity would have a value in the billions of dollars. Even if wildly optimistic, a fraction of this predicted benefit would be of continuing value to the American public.

Providers employing less spectrally-efficient technologies have the universe of other bands from which to choose. Some of these bands will also be available to competitive bidding within the same timeframe as the 220 MHz band. I have not supported an efficiency rule for other commercial bands, believing that marketplace forces should be relied upon for establishing the balance between efficient spectrum use and cost of service. However, allowing this testbed to continue for five years in a technologically-neutral fashion furthers the goals established by Congress, harms no potential service provider, and has great potential to benefit the public.

Separate Statement
of Commissioner Rachelle B. Chong

Re: *Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service*, PR Docket No. 89-552, RM-8506, *Third Report and Order; Fifth Notice of Proposed Rulemaking*

I support our decision today to provide 220 MHz licensees with more flexibility in the types of services that they can provide with their spectrum.[1] I believe that this decision will allow 220 MHz licensees to compete more effectively in the wireless communications marketplace and will broaden the array of services for customers.

In order to facilitate the provision of certain of those services, I also supported our decision to allow 220 MHz licensees to aggregate 5 kHz channels into channels of larger bandwidth. However, precisely because we have decided to allow such aggregation, I believe it is important, as we tentatively concluded in the *Notice*, to require licensees choosing to aggregate channels to maintain a degree of spectrum efficiency at least equivalent to that obtained through 5 kHz channelization. I write separately to set forth my reasoning for supporting adoption of a spectrum efficiency standard for this band and to explain why I respectfully disagree with the arguments raised by my dissenting colleague. I emphasize that my decision to support such a standard is limited to the unique circumstances of this service.

My dissenting colleague argues that licensees who will acquire this spectrum at auction will have incentive to use the spectrum as efficiently as possible. I agree that licensees acquiring 220 MHz spectrum at auction will have incentives to use their spectrum in an *economically* efficient manner. The most economically efficient result, however, does not necessarily require the use of the most spectrally efficient technology. While I generally prefer that the market drives the technology choice in wireless services such as this one, I believe that the equities of the situation mitigate in favor of the adoption of a limited spectrum efficiency standard.

As background, we reallocated the 220-222 MHz band from the Amateur Radio

[1] Our decision today allows 220 MHz licensees to provide one and two way paging and fixed services on a primary basis, in addition to the land mobile services they are currently allowed to provide.

Service to private and federal government land mobile use in 1988.[2] In doing so, we *specifically* dedicated this 2 MHz of spectrum for the development of spectrally efficient narrowband technology. In addition, we stated at that time that, "[w]e are convinced that in order for narrowband land mobile technology to flourish, it must be afforded a reasonable opportunity to gain full acceptance in the market place [sic]."[3] In furtherance of this policy, we channelized the 2 MHz into 200 5 kHz channel pairs.[4]

In spite of our good intentions and the best efforts of several manufacturers, narrowband technology has not yet had a real opportunity to gain acceptance in the marketplace. First, there were a number of delays associated with the Commission's adoption of service rules and issuance of licenses in the 220 MHz band.[5] Even after the licenses were issued, the new licensees were reluctant to invest in the narrowband technology and construct their systems because of a pending lawsuit challenging certain aspects of the Commission's licensing procedures in the 220-222 MHz band.[6] In recognition of these problems and delays, the Commission extended the 220 MHz construction deadline *five times* – with the last deadline expiring August, 1996.[7]

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[2] *Amendment of Part 2 of the Commission's Rules Regarding the Allocation of the 216-225 MHz Band,* GEN Docket No. 87-14, *Report and Order*, 3 FCC Rcd 5287 (1988).

[3] *Id.* at 5289.

[4] *Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Services,* PR Docket No. 89-552, *Report and Order*, 6 FCC Rcd 2356 (1991).

[5] Although we reallocated the spectrum in 1988, we did not actually issue any service rules for the 220-222 MHz band until 1991. *Id.* Although we began accepting license applications almost immediately, within one month of opening the application window, the staff imposed a freeze on the filing of all applications (which continued in place until last year). *Acceptance of 220-222 MHz Private Land Mobile Applications,* 6 FCC Rcd 3333 (1991). We held lotteries for non-nationwide and nationwide licenses in 1992 and 1993, respectively, and issued the last licenses in 1995. *Public Notice, Commission Announces Lottery for Rank Ordering of 220-222 MHz Private Land Mobile "Local" Channels,* 7 FCC Rcd 6378 (1992); *Public Notice, Commission Announces Lottery to Select Commercial Nationwide 220-222 MHz Private Land Mobile Licensees, DA 93-159 (rel. Feb. 16, 1993), 58 Fed. Reg. 09174 (Feb. 19, 1993).*

[6] *See Evans v. FCC*, Order, per curiam, Case No. 92-1317 (D.C. Cir. Mar. 18, 1994). This suit was filed in July, 1992, and the case was settled in March, 1994.

[7] *Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service,* PR Docket No. 89-552, *Second Report and Order*, 11 FCC Rcd 3668 (1996).

I believe that because we specifically set aside this band for the development of spectrally efficient technology, and some licensees and manufacturers relied our set aside decision, we should honor our commitment to spectrum efficiency in this band. That being said, I acknowledge that narrowband technology is not the only type of spectrally efficient technology. Because I did not want to preclude other spectrally efficient types of technologies that require wider bandwidths from being used in the 220 MHz band, I supported the decision to allow channel aggregation and the use of non-narrowband technologies, so long as the licensee choosing to aggregate channels also maintains a level of spectrum efficiency.

My dissenting colleague argues that the efficiency standard will surely limit the ability of 220 MHz licensees to provide services that require channels wider than 5 kHz and will effectively preclude paging services. I disagree. In establishing the spectrum efficiency standard, we tried to choose an efficiency level that would promote efficiency, but would still be reasonably attainable by manufacturers. The standard we chose – for voice, 1 voice channel per 5 kHz, and for data, 4800 bits per second per 5 kHz – meets both of these criteria. This standard is similar to the standard that we recently adopted in our refarming decision.[8] It appears that it is a standard that can be met by both of the current narrowband manufacturers and in fact has been exceeded threefold by one of the manufacturers.[9] Moreover, the data standard is one that other types of technologies, including TDMA and some new paging technologies, should be able to meet, if there is enough available spectrum at 220 MHz.[10] In addition, we provided that a manufacturer may obtain type acceptance for 220 MHz equipment that does not meet the voice or data efficiency standard if they can meet certain other conditions.

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[8] *Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services*, PR Docket No. 92-235, *Amendment of the Commission's Rules Concerning Maritime Communications*, PR Docket No. 92-257, *Memorandum Opinion and Order*, FCC 96-492 (rel. Dec. 30, 1996) (*Refarming Reconsideration Order*).

[9] Securicor Radiocoms Limited ("Securicor") is reporting that its current system is operating at 14.4 kb/s. Securicor, *Ex Parte Submission*, PR Docket 89-552, GN Docket 93-252, and PP Docket 93-252, filed November 12, 1996; SEA, Inc. ("SEA") proposed a data rate of 4,800 b/s. SEA Comments at 17.

[10] Cellular and 800 MHz SMR digital TDMA equipment are operating at a data rate of 48,600 b/s for a 30 kHz channel. This translates to 8,100 b/s for a 5 kHz channel and meets our 220 MHz data standard. In addition, Motorola is reported to have developed a paging technology, Inflexion, which is expected to have a data rate of 112,000 b/s for a 50 kHz channel. This translates to 11,200 b/s for a 5 kHz channel, a number far in excess of our efficiency standard.

Although I believe that we should adopt a spectrum efficiency standard today, I do not believe that we should retain the spectrum efficiency standard indefinitely. For this reason, I supported a five year sunset date for the spectrum efficiency standard. I believe that this time period will provide a fair opportunity for spectrally efficient technologies to develop in the band and gain acceptance in the marketplace. Moreover, with the fast pace of wireless technological development, it is my hope that by the year 2002, the spectrum efficiency standard we adopt today will have long since been exceeded.