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Date: October 19, 2000

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Leading academic researcher determines that Aphex Aural Exciter[®] enhances speech intelligibility

*Josef Chalupper reports findings from Technical University of Munich in
paper presented at recent Audio Engineering Society Convention.*

Sun Valley, CA: For more than two decades, **Aphex Systems** has been extolling the virtues of the **Aural Exciter[®]** as a simple-to-use technique for dramatically increasing the intelligibility of speech. Over 1,000,000 channels of Aural Excitation have now been sold by the company, or licensed to other manufacturers, since the process was developed during the mid-Seventies. This year Aphex Systems celebrates 25 action-packed years in the pro-audio industry.

Now comes news of an academic study undertaken in Germany that, for the first time, adds the weight of independent, verifiable research to the vast wealth of anecdotal data that Aphex' patented process can enhance intelligibility of speech in a wide cross section of applications.

In a technical paper presented to the **109th Audio Engineering Society**, held from September 22 thru 25 at the Los Angeles Convention Center, **Joseph Chalupper** of the **Institute of Human-Machine Communications, Technical University of Munich**, reports some extremely interesting findings about the Aphex Aural Exciter. As Chalupper concludes, "In general, there seems to be a trend towards enhanced speech intelligibility if speech is processed by an Aural Exciter. The Aural Exciter corresponds to sharpness and can be regarded as 'Sharpness Maximizer'." Test signals included an announcement at a railway station, a conversation within a restaurant, a church organ and a conversation in an office.

"For 25 years," points out Aphex president **Marvin Caesar**, "the Aural Exciter has been used on countless recordings, broadcasts, films, touring/fixed-installation PA systems, telephone message systems, assistive listening devices and musical instruments. While there is a tremendous amount of anecdotal evidence of the

-- continues of page #2 ...

Aphex Aural Exciter® enhances speech intelligibility — page 2

increase in intelligibility and quality, until now there has not been a scientific study done to quantify the effects. The thrust of German researcher Josef Chalupper's excellent paper was to answer the question in its title. In making the argument for defining our product as 'psycho acoustic,' Joseph analyzed the Aural Exciter's effects on intelligibility."

Focusing on the article's detailed findings, Josef Chalupper reports:

- An increase in intelligibility of 11% for single words in noise.
- An increase in intelligibility of 18% for sentences in noise.
- An increase in intelligibility of 12% in reverberant fields.
- Increases in intelligibility were due to both the linear and the nonlinear distortions introduced by the Aural Exciter.
- Improved sound quality.

"These percentages were absolute on a scale of 100%," Caesar says. "Measured as a percentage increase above the 'non-excited' audio the numbers would be as high as 40%."

"There has always been a certain amount of controversy surrounding our Aural Exciter," Caesar concludes. "This AES paper should help quell the doubts of those who still have trouble believing their own ears, or the ears of their customers. Our licensees, including Yamaha, Gentner Engineering, Bogen, Mackenzie Labs and Emu, have recognized the benefits of the Aural Exciter; this paper will further help their efforts."



Aphex Model 104 Aural Exciter Type C² with Big Bottom



Aphex Model 250 Aural Exciter Type III

Founded in 1975, Aphex Systems is a leading developer and innovator of signal-processing, dynamics control and analog-to-digital conversion systems designed for a wide cross section of professional end users around the world. For more information call +1/818.767-2929 or visit our internet web site at www.aphex.com.