

117th AES

JJ Johnston PowerPoint Presentations

[PowerPoint from Session TS-1: Physics of Sound and Hearing](#)

[PowerPoint from October 2004 PNW Section Meeting](#)

AES PNW Meeting Notice

Understanding Acoustic Feedback

and

Feedback Suppressors

Presented by

Dana Troxel

Sr. Design Engineer, Rane Corporation

Sponsored by the

AES PNW Section

Tuesday, November 16, 2004, 7:30pm

Rane Corporation

10802 47th Avenue West

Mukilteo, WA 98275

[Directions](#)

To notch, or not to notch: that is the question... The sound that strikes fear into the hearts of every audio system designer, installer, user and listener is acoustic feedback. Using the transfer function to help with visualization, we will analyze acoustic feedback in detail to see the effects of delay, temperature change,

and resonance. We will discuss the pros and cons of various feedback suppression methods such as frequency shifting, audio delay, all-pass filters and notch filters and ask the question, how deep and how narrow a notch is enough? We will then look at some of the gear that has been developed over time with a focus on some of the recent auto-notching algorithms. With this insight in place, we can then answer the question, "are these notches doing any good?"

About Dana Troxel

Dana Troxel grew up in Puyallup, Washington where he frequently blew his hard-earned berry picking money at the Fair. He graduated with a BS in Electrical and Computer Engineering from Brigham Young University in 1990. He worked for 5 years at Active Noise and Vibrations Technologies, in Phoenix, AZ developing an automotive Electronic Muffler System and other active-noise based products. He worked for Telex/EV for 3 years where he helped develop the Merlin ISP-100 Digital Signal Processing box. During the last 6 years at Rane he has worked on several projects which include the development of Rane's DSP compiler, Rane and Dana's patented Acoustic Echo Cancellation algorithm, Ambient Noise Compensator and Feedback Suppressor.

Our meetings are open to anyone interested in Audio. AES membership is NOT required for you to attend our meetings.

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