Sound Design for Social Dance

Greg Brown (musician and sound engineer from the Ottawa dance community)

This workshop will help participants understand the challenges of engineering sound for a social dance with live music. With sound systems of three levels of complexity – from basic to state-of-the-art – the participants will have an opportunity to see how a professional uses various tools to create a fun atmosphere for dancers and musicians alike.

A good resource for someone who wants the basics of how to do sound for dances is Bob Mills' "All Mixed Up," which is available both as a booklet and as a web-based resource. (Mills emphasizes a philosophy of "less is more." Given the natural quality of traditional music, the sound does not need a lot of effects.) For those interested in going deeper, Greg recommends a set of information guides from Backstage Technical Services in Bath, UK.

Greg gave his presentation in the dance hall, where he gave a practical demonstration of three set-ups.

1. The first was a basic, compact, Samson portable PA system whose features include a removable 5-channel mixer with 4 mono channels, 2-band (high and low frequency controls) on each channel, fixed EQ, trim on each channel, a built in amplifier driving very light passive speakers, and the ability to switch from line (direct input from an instrument) to mic preamps. Such a system is quite inexpensive. The 150-watt version costs about $300, including speakers; a 300-watt version runs for about $500.

   - As well as being inexpensive, this system is light and easy to store and set up.

   - Few channels and features mean that the system lacks flexibility, and the quality of sound in many settings will be improved with better equipment.

2. The second was a medium-sized Mackie 1402-VLZ Pro 14-channel mixer, driving heavy, powered speakers and costing about $600. Greg discussed:

   - The risk of ground hum when two such speakers are plugged into different circuits and the length of the path to ground for each may differ significantly.

   - 'Ducking' frequencies using the 3-band equalization controls. This means that each channel can adjust high, middle and low frequencies independently. It is often possible to improve the clarity of the sound by reducing mid-range frequencies.

   - Setting trim to a little below zero (i.e., not running the preamps too hot), to avoid "clipping" or distortion that occurs when a signal is too hot.

   - The concept and use of "destructive and non-destructive soloing." "Soloing" is removing all but one channel from the mix, so that you can more easily adjust the quality of sound on that channel. "Destructive" soloing is when this happens in the main speakers during a sound check. "Non-destructive" soloing sends just one channel to headphones for the sound person without affecting the mix in the hall, so that such adjustments can be made on the fly during the performance.

- The use of the "Aux Send bus" to tap channels pre-fader and drive the two channels of monitor mix, so that musicians do not have to be satisfied with the muddy sound coming from the back of the main speakers, aimed at the audience.

3. Finally, Greg described his high-end PreSonus digital model with six channels of monitor mix; built in engines for reverb, delays, and other effects; and 4-band, sweepable graphic EQ. It costs more than $2,000. He recommended [Northern Light and Sound](#) as a source for any such purchase. This system has all the capabilities of the other two systems and, as you would expect, much more. Greg demonstrated:

- The use of graphic EQ controls to identify the frequencies at which feedback was occurring, which simplifies addressing feedback problems.

- The use, and risks, of compression (i.e., limiting dynamic range), best used lightly.

- The use of delay (i.e., enhancing a soloist playing a wild riff).

- The advantage of being able to recall settings.

- Running an auxiliary feed to a subwoofer (a special speaker that is responsive only to the lowest frequencies). This allows only instruments that contain low frequency information below approximately 100Hz (e.g., bass, some drums, and piano) to be fed to the subwoofers, improving the clarity of the mix.

- The advantages of a digital mixer being controlled over a local wireless network using an iPad, relative to the traditional means of using a snake.