ROBYN GATELY

The Makings of an Engineer

The following interview with Randy Weinholtz took place at the author's home outside Princeton, NJ. The interview, conducted over a two-day period, gives insight into both the difficulties of getting started in this business and traveling on the road.

• **RG: How did you get started in this business?**

RW: Well, I started as a roadie for the band "Bing" in 1980, basically setting up guitar amps, learning how to set up guitars and drums and being the general go-fer. You know, go-fer this, go-fer that. Then I became an apprentice at (Modular Technologies in Morrisville, PA) starting in early '81, January or February. After spending several months learning about sound, I started working with a band called "Boy's Room" in May '81 basically doing the club scene with a cover band using a small PA from Modular.

Then I got my first real experience when I was third man for Sammy Davis Jr. for a string of shows in May '82. Then it was back to the clubs and occasional 'real' shows until I worked my first Festival, the New York City Bluegrass Festival in June of '84. There I did monitors, a 16x4 mix (16 mic inputs and 4 outputs for 4 different mixes at different locations on the stage).

My next major step forward was the Silver Cloud Folk Fest in August of '84. This was where I first used 24x8 monitors. It was also the site of a tremendous rainstorm before Arlo Guthrie's set. The rain and lightening caused havoc, and put the pressure on, allowing me to prove my ability under fire. The storm passed and we got Arlo on within the 20 minute allotted stage change. It turned into a gorgeous clear moonlit night, with Arlo playing an incredible set at a site less than 15 miles from Woodstock, NY on the 18th anniversary of the event.

The next big step was the first Festival I ran myself—"Rockarama" in Philadelphia in July of '87. Three days of three stages, 12 bands a day with an audience of 25,000 per day. Since then, some of the people I've worked with include Duran Duran, David Bromberg, The Lettermen, Judy Collins, Arlo Guthrie, the Dead Kennedys, Peabo Bryson, Budfest (Washington D.C.), Cinderella, Savoy Browne, Dr. John, etc.

RG: If you have a choice, which do you prefer—to mix House or monitors?

RW: I definitely prefer to mix House, if I have a choice, mainly because the House mixer controls the whole situation. If you are having an "ON" night, and the band is too, then it can be a great experience.

RG: What has been your favorite House experience?

RW: I don't know that I could single any one out as the best—there have been too many great ones. I could tell you that I try to avoid being House man at Festivals because I don't like babysitting other engineers.

RG: What about Studio experience?

RW: I certainly don't have any, and I'm not sure I really want any, because the studio seems like a really boring place to be. I'm not sure I want to be there when Take #33 is going down. I have noticed that very few studio engineers have a good feel for how it should sound 'Live'. There's a certain feeling that has to be there when you're dealing with a band on-stage. The Kick Drum should shake your leg, the instruments should be in your face, etc.

I'm an active mixer. By that I mean that I feel your hands should be on the board. You should always be listening and reacting to what's going on on-stage. I have encountered many people who feel that once a mix is together, that the band should provide the dynamics and provide the level changes. I disagree. A band may know what changes they need to play properly, but they have no way of knowing what might be necessary to make the music happen for the audience.

Building a good mix is like construction. It's important to realize that a live mix must be based upon a solid foundation of Bass & Drums. The vocals are the first thing in the mix, but the rhythm section is the foundation on which you are building. The instruments in the band come next, and the effects (reverb, echo, etc.) are the highlights or bright colors you paint on a house. It doesn't matter how brightly you paint the house if you never built a good foundation.

RG: You obviously understand and enjoy mixing House, but what about Monitors?

RW: Well, actually, I mix monitors quite a bit. I like it too, mainly because it's a spontaneous thing. You're right there on stage with the band, so you can really get caught up in the energy of the thing. A good monitor mixer can help the band put on a much better show.

RG: What's your favorite monitor experience?

RW: I would have to say Festivals, because of the variety of the acts. If they are organized well, Festivals can be a hell of a good time. That's the key to Festivals, good organization. It is absolutely paramount that you clearly organize your stage and monitor system before you ever ar-

rive at the concert site. If you take the time to get riders and talk to the bands, you can save yourself a lot of headaches at the show.

RG: What about your recent experiences on the road? How have the systems been that you've encountered?

RW: Well, on this last "A Flock of Seagulls" tour, I was given everything from a poor passive 3-way system to a nice Meyer system. I was amazed as I traveled throughout the country and Canada at how many people have good equipment that was poorly set up. Fortunately, a lot of club soundmen appreciated my help in setting up proper gain structure. Of everything I've observed, gain structure is the single most misunderstood aspect of running a sound system.

I was taught that the signals should be kept as 'hot' (close to 0 dB) as possible until the last possible stage. This means that even if your main output is going to be running at –20 dB, you want to keep the input gains and submasters reading as close to 0 as you can without overloading. Of course this requires a console that has plenty of headroom, preferably +24 dB. It's also important to patch things like EQs and limiters in their proper place instead of just 'daisy-chaining' them onto the output of the console.

One thing I have really noticed that has changed in the club scene is that most people now fuse their speakers instead of just hoping that the limiter or underpowered amplifier will provide enough protection for the precious drivers.

A really disconcerting thing about any club tour is how many clubs put the mixing booth in a very bad place. Bad sightlines and poor acoustics can put a soundman in a position where he mixes too loud or too bassy/trebly simply because he cannot get an accurate picture of what the audience hears. A couple of examples are the Cotton Club in Atlanta, GA, where the sound booth is in a poor place acoustically, while at Tranca's in Malibu Beach, CA, someone had the idea that the sound booth should be 'out of the way', so they put it in the balcony.

RG: You mentioned the use of limiters and EQs; as you traveled, how well did people make use of these devices?

RW: Limiters and EQs are really a problem on the road. It's amazing how little is really understood about the advantages and disadvantages of these two devices. In most cases, both units are used entirely too much.

A little bit of limiting (3 to 6 dB) at a high ratio (6:1 or higher) can enable a small PA to seem as loud as a system with no limiting that is four times larger. However, 6 dB of limiting is about as far as you can go without the limiter starting to remove whole sections of the sound. For example, a mix that has a lot of kick drum will be helped by some limiting, because that will even out the volume of the Kick; however, once you start limiting your mix heavily (more than 6 dB), you will notice that the instruments and vocals seem to disappear ("duck") every time the kick hits the limiter.

Over the years, I've learned that a little bit of limiting goes a long way. A ratio of 6:1 or higher is useful for PA protection, but when you are looking to keep various instruments from getting too loud, then a few dB of limiting at 2:1 or 3:1 will sometimes help your mix. Vocals, Horns and Bass guitar can be especially helped by this. Personally, I really like to gate the kick drum, and then let the PA limit it so that it's always out front in the mix.

RG: And what about EQs?

RW: Equalization is always a tough thing. The first problem is that there is no total agreement on what sounds good; some people like to hear things a little brighter than others, some like low-end you can 'feel', so we're in a situation where personal preference enters heavily into the picture. In addition, the type of act is a determining factor, too. Heavy Metal acts obviously require more bass than MOR (middle of the road) acts that are more dependent on their vocals.

The most important factors in using an EQ are memorizing which faders affect which frequencies (learned only through great amounts of time playing with the faders), and learning how not to use EQ.

RG: Considering this is a subject that I have discussed for years with you and other soundmen, please elaborate.

RW: The goal of using EQ is to make something that works well work even better. If when you turn it on your system does not already sound reasonably good, then you need to examine the parts of the systems to find the problem. For instance, are the crossover points reasonable? It doesn't make a whole lot of sense to cross over from 18- to 12 inch speakers at 800 cycles; this should be done in the range of 150 to 250 cycles. In addition, there must be adequate power for each of the speakers. Also, the speakers must all be in phase with each other and hopefully aligned. Most importantly, the various speakers must be properly balanced—the volume controls for the lows, mids and highs should be set so that you hear enough of each before you ever touch the EQ.

Choosing the right microphone is important, too. You're never going to get the right sound if the chosen mic is noted for its great highs and you need lows out of it. I know that you use AKG 451 microphones with Judy Collins because of the superhighs it brings out in her vocal, whereas, when I'm out with The Lettermen, I use Shure SM-87s because of the lower midrange 'meat' in their vocals. So, mic selection can save you a lot of unnecessary EQing.

Additionally, improper impedance matching can cause a great PA to sound like tinny garbage. So, it's important to know about anything that will affect the 'color' of your sound.

RG: What about actually using graphic and parametric EQs?

RW: Well, these days most parametric EQs are on the input channel of our board for adjusting the sound of the input. Graphic EQs, on the other hand, tend to be used to either fix the sound of the PA or get rid of feedback. You are the person who first taught me how not to use an EQ. In fact, I know a few soundmen who are still in awe of the fact that you can do a three-day Festival without ever touching an EQ.

RG: Well, (author blushes) there are some advantages to properly setting up your system...

RW: Yes, well, I feel well-taught. But, what I see out on the road is equalizers that are often in the shape of a giant U.

RG: The infamous U-EQ.

RW: Exactly. As we have both proved, this is the result of either an improperly set-up system, or the result of a massively over-EQed PA.

The concept of not utilizing more than 1/3 of the faders on a graphic is just not adhered to by enough people.

I also encounter many systems that are severely hampered by the taking of the first two or three faders and turning them completely *off*. The explanation is usually that this eliminates Bass overexcursion, or gets rid of the rumble, but these problems are much better fixed in other ways.

RG: Moving on to a different subject, I know most of the readers work in clubs or smaller environments, but what about band volumes?

RW: Band volumes can be a problem sometimes, so you have to learn to mix against it. The only solution is often to just drop the instruments that are too loud out of the mix; what we call 'mixing against the instruments.' However, it is extremely important to get away from the sound booth and listen to the sound elsewhere. Often what is a problem where you are is not a problem elsewhere. So get around in a club the first few minutes.

Although I have a preference for the Academy of Music in Philadelphia because of my familiarity with it, I would also have to mention Carnegie Hall in New York.

Of course, it's important to have a system powerful enough to get up and over the band, but at the same time always realize that being too loud can result in your never working somewhere again. On the club circuit, having a good relationship with the owner and patrons is your source of work, so don't destroy it by being too loud. Therefore, it becomes crucial that everyone in the band realize that volume can destroy the band's reputation as quickly as bad playing or choice of material.

RG: Let's talk about some of your favorites here. First of all, do you have a favorite venue?

RW: Several, actually. Although I have a preference for the Academy of Music in Philadelphia because of my familiarity with it, I would also have to mention Carnegie Hall in New York. Despite some peoples' opinion that the 'old' Carnegie was better, I would have to say that despite the minor changes, it still ranks as one of the best halls in the world. Although those are two of the best sounding venues in the world, my personal preference for venues to mix in has to be outdoor venues with or without roofs such as the Mann Music Center in Philadelphia, or the Greek Theatre in Los Angeles. Of course, venues with roofs (or sheds) have to have delay stacks for the people sitting on the lawn.

RG: What are the most inputs you've ever used?

RW: Forty inputs is the most I've ever actually used, although I've had boards with more inputs. I specifically like the DDA Q-Series, TAC Scorpion and Harrison, but my favorite, without a doubt, would have to be the ATI Paragon. I was very impressed by the quality of the sound.

RG: Did you ever encounter any nightmares out on the road?

RW: I encountered one console in San Francisco that had just NOT been maintained. This brings up the most important aspect of sound systems—maintenance. If you don't fix and replace, it can become impossible to achieve decent results. Even connections that remain plugged in for years should be unplugged, cleaned and eye-balled every once in a while. This console had originally been decent, but was now noisy and the cause of many headaches when I came through the club on the Flock of Seagulls tour.

RG: What about speaker systems?

RW: Well, you are aware of my preference for Modular's speaker systems, but there's also a manufacturer in Canada who makes a very fine product, Brock. Both systems employ many of the same design goals, resulting in a very clear-sounding system that 'rocks' when you need it to.

Everything that could have gone wrong did. On the way to the gig one of our people, Beep, said, "I'll bet that guy's stealing that tire out of that car."

The problem with some of the processor-based systems I've encountered is that although they sound great at moderate volumes as soon as you hit them hard, the deep bass gets swept away. So far, Modular Technologies is only available in the States, and as far as I know, Brock is only available in Canada.

RG: What about favorite effects?

RW: Well, if you are familiar with the act and using the same system all the time, there are several multi-effect units that are very nice. ART and Alesis each make nice units. Lexicon equipment usually sounds excellent, but they're not very flexible without their control units. When traveling throughout the country using many different systems, I find the Yamaha units are probably the easiest to get around on.

RG: Have you found that you have some favorite acts after the last 10 years?

RW: Well, after seeing this much great music, there have to be some pretty unforgettable experiences and acts. There's a rock guitarist in Trenton, NJ, I go see no matter what band he's in, Ernie White. He always has something to say, either on his guitar or through his songs. I really like Wynton Marsalis when we work with him, though I'd like to see Harry Connick, Jr. Additionally, I think the Neville Brothers and Dr. John are great. The Righteous Brothers put on a show that was very impressive.

A large part of survival in this business is personality, how genuinely nice are you to work with? The consumate master was Sammy Davis, Jr. I don't know how he was all the time, but when we worked with him at Modular, I know every single engineer was impressed.

RG: What was the worst gig you ever worked?

RW: You should know, you got me into it! Lillo Thomas was in a small club in Brooklyn, NY. We were given directions from the band, told it was a 6 o'clock show and that there were no stairs. Additionally, there was supposed to be a load-crew, no opening acts and dinner.

Everything that could have gone wrong did. On the way to the gig one of our people, Beep, said, "I'll bet that guy's stealing that tire out of that car." Well, the directions were backward, every left was supposed to be a right, every right a left. When we turned around, sure enough, there's this guy on the side of the road yelling, "Tire, $5.00!" This was most certainly an omen.

I could never fit all of the little stories that make a show a nightmare, but some headlines include: when we got there, there was a flight of 20 million thin stairs with two 18-foot trucks to unload, and a load-in crew that was unwilling to work and never showed up for load-out. The show finally started at 2:45 a.m. with the first of three opening acts, and we finally started load-out at 6 a.m.—up the stairs with no crew, no dinner and 36 total feet of truck to load. Anything worse than that I've blocked out of my mind.

How do you react when you are asked "Please turn the fish in the box?" You turn (up) the Bass (fish) in the monitor speaker (box).

RG: Lastly, what makes a good engineer?

RW: Well, I could go on for hours, but ability to listen is of paramount importance. But this is not just the ability to hear the different parts of the music—it's also the ability to listen to what's said to you and interpret it. This means everything from taking all criticism (positive or negative) with a grain of salt, to being able to interpret the artist's request in French.

Even an interpreter can screw you up. How do you react when you are asked "Please turn the fish in the box?" You turn (up) the Bass (fish) in the monitor speaker (box).

How do you know to turn the fish up? How often has a musician ever asked to turn something down? It is rare, so it's an educated guess.

One of our monitor engineers actually went through this exchange with a band from Senegal this past summer.

Finally, be open-minded to advice. I've encountered a decent number of engineers over the years who have shared information with me. You just never know where the next great idea is coming from. db