Live Sound Reinforcement: Asia-Pacific '90

ED LEARNED

MY ASSOCIATION WITH THE USIA (United States Information Agency) in the 80s was a fruitful one for all concerned. As disseminator of American culture to the world, USIA sponsors a wide variety of artistic programs. Foremost among these are overseas tours by musicians representing the many facets of American music. Regular readers of **db Magazine** the past six years may recall my articles about several of these tours: I was involved in sound system design and live sound mixing for 12 different USIA-sponsored concert tours during the last decade. The importance of high-quality sound systems and expert sound mixing to a successful musical performance is appreciated more today than ever before. My combination of professional concert touring techniques and system design, coupled with the experience gleaned from 18 years of mixing different styles of music, conspired to create a new standard of excellence for USIA touring sound quality and reliability. The return on my invested efforts was substantial: I saw the world, worked with some of America's finest musicians, and got paid for it! We exposed our foreign audiences to many memorable performances, and made many new friends. Little wonder that both USIA/Arts America and I were eager to continue our working relationship into 1990. The new decade began with the most ambitious USIA touring package I'd ever undertaken.

Arts America Programmer Beverly Gerstein called me in early February, 1990, with news of two proposed tours of the Asia-Pacific region. The first project, scheduled for late summer/early fall, involved guitarist Charlie Byrd and his trio. Charlie is well-known as both jazz guitarist and exponent of Brazilian music. Jazz fans remember the "Jazz Samba" album, which Charlie cut in 1963 with Stan Getz that led to the 60's bossa-nova craze in the United States. But Charlie is also an excellent classical guitar player, so while you might hear compositions by Ellington, Monk and Jobim at a Charlie Byrd concert, you could also expect to hear him play Vivaldi and Villa-Lobos.

The second tour, scheduled for mid-fall, featured Wayne Toups & Zydecajun, with whom I'd worked nationally and internationally (see **db Magazine**, Volume 22, No. 2, pgs. 25-31; No. 3, pgs. 25-30; No. 4, pgs. 27-32). Wayne is a master of the Cajun diatonic accordion. Zydecajun is a blend of Cajun and Zydeco music with a healthy dose of rock 'n' roll thrown in. The new edition of Zydecajun rocked harder than ever before—even the Cajun waltzes were delivered with fire and a touch of stinging blues.

The two proposed itineraries had some regional symmetry; while each group had exclusive destinations to tour, Thailand, Singapore and the Philippines were due for visits by both. Wayne had requested my services for his tour already, and as it turned out, only 10 days separated the two tours. Gerstein's question to me: would I mix sound for both groups, and could I design a sound system both groups could use? Trans-continental airfare for equipment and personnel was substantial on a tour of this sort; use of the same system and operator for both groups meant one less fare to pay in each direction. What to do during my ten days off in Asia was another consideration: my original idea was a return to Bangkok after the Byrd tour, enjoying a brief rest before Wayne Toups/Zydecajun arrived to commence their tour. After some deliberation, Arts America proposed an incredible side trip: I would fly to the Peoples Republic of China for a week or so, and conduct a series of seminars on modern sound reinforcement systems and mixing techniques. Two great bands and an opportunity to visit China? I accepted the offer immediately.

The disparate nature of the two groups was the first thing I dealt with in designing sound for these two tours. From a mixing perspective, the "threshold of hearing" required by these musical opposites dictated different methods of balancing. SPL considerations figured into equipment planning, too: while the Charlie Byrd Trio used minimal stage monitoring, Wayne Toups/-Zydecajun called for a minimum of five rock-level monitor mixes.

International touring, however, quite often reduces production considerations from "what I want" to "what I can get." If you must have a particular piece of equipment, you'd better bring it with you, remembering the prohibitive cost of getting it over there in the first place! Cost factors make size and weight considerations just as important as brand preference and production desires. I had a weight limitation of 1,000 lbs. for the Charlie Byrd system and 1,250 lbs. for the Toups system. Cargo door clearance for the smallest commercial airliner we'd see limited case size to a maximum of 40 in. in any two dimensions. I knew that, with only a 250 lb. variance, most of the gear I could carry would have to be applicable to both groups.

My last tour of the region, with the Benny Golson All-Stars in 1987 (see **db Magazine**, Volume 22, No. 6, pgs. 36-42; Volume 23, No. 1, pgs. 44-52), proved we could find local PA systems sufficient for a jazz group, but what about Wayne's highly-amplified Cajun/Zydeco rock?

I'd observed a trend towards more high-quality, high-power systems in this area, especially in the major business centers of Singapore, Manila and Bangkok. Even in provincial towns, a decent caliber MI (musical instrument) PA system was usually available. Our logistical constraints limited options; we would have to take our chances with local house PA, which I felt would be adequate in most cases. Wayne and his group accepted the obvious: some nights would require major compromises, and they agreed to deal with whatever it took to make the house sound happen.

My sound system rider made artistic distinctions between groups very clear, especially with respect to the different SPL power levels required. I did not want a huge rock PA system for Charlie Byrd, nor a small, high-fidelity, tripod-mounted PA system for Toups. I also specified preferred brands of equipment: believe it or not, PA systems by Electro-Voice, JBL, Meyer, Turbosound and Apogee Sound were available in some of the areas we visited. I elected to carry a small 16 x 4 x 2 house console and my own effects/system drive rack to lend some consistency in operation to our PA-du-jour situation. Audio for both groups could fit into 16 channels; my rack contained devices useful to both groups, although I could (and did) re-configure it slightly for each specific tour (see *Figure 1*).

SOUND FOR THE MUSICIANS

Musicians must have a comfortable, dependable stage environment if consistent, high-quality performances are desired; I usually request that we bring all our stage gear with us for that reason. Most musicians prefer to use their own drums, instruments and amplifiers, although there are exceptions (see Chuck Redd). An on-stage monitor system was a necessity for Toups, superfluous for Byrd. After some haggling, I got Toups to accept only four monitor mixes. Even so, it was by far the most complex monitor setup ever used during my USIA-sponsored tours. Wayne provided a 16 x 6 monitor console as part of his 1,250 lbs. of band gear; I covered the rest of the monitor system, including graphic EQs, power amplifiers, monitor speakers and all system cabling including monitor splitters.

The monitor cabinets I chose would have to meet the needs of both groups, yet not break the bank on weight. I'd used E-V's S-200 speaker cabinets at several jazz gigs in the United States, as house PA speakers on several USIA tours, and as floor monitors (using the screw-on tilters) at a local club with much success. I was most impressed by their power handling and smooth frequency response. They sounded "warm" enough to please discriminating acoustic musicians; the compact size and plastic cabinet matched my weight and space parameters.

Wayne and his group look for extremely loud monitors, with heavy kick and snare in most mixes along with vocals; their standard concert rider specifies wedges with at least a single 15 in. woofer and 1 in. horn/driver bi-amped. I wasn't sure if the S-200, with only a 12 in. and a tweeter, passively crossed, could handle this type of situation. I planned to power the S-200s with the new Carver PM-1250 amps; aside from the obvious weight advantage, I had the capability of putting 325 watts/channel to each S-200. I figured this type of power should at least get us close; understanding our limitations, the group agreed to deal with it.

AC power in the region varies between 220-240 volts, 50 cycles. Neutrals are very often "dirty," and most of the time equipment grounds are non-existent. I planned on carrying my trusty multi-tap Variac transformer to convert local voltage into US standard 120; its capacity of 30 amps would be more than enough for both groups. Voltage in many areas of Asia, however, is far from stable. My first few international tours were great tests for revealing which brands of equipment could tolerate voltage swings, and just what their "safe" range was. I've carried a VIZ power line monitor with me on every tour; This peak-reading AC line meter let me monitor the AC voltage, in real time, during setup and performance. By watching the behavior of the voltage over time and asking questions of local technicians, I could often get a realistic handle on the quirks of the local power system. I had total confidence that, with proper vigilance, my touring sound package could withstand these topical fluctuations. However, Wayne Toups/Zydecajun had some stage equipment, including digital keyboards, that we weren't so sure about.

AC PROBLEMS

Mark Miller, Zydecajun's bassist/manager, expressed some concern about past AC problems he'd encountered in the United States, and things would undoubtedly get even more dicey overseas. These days, there are several companies that sell rack-mountable AC outlet strips with surge protection, RFI filtering, and, in the more expensive units, AC voltage regulation. I suggested the group invest in one of these units, and Miller quickly concurred.

TWO GROUPS, DIFFERENT SOUND SYSTEMS

Charlie Byrd's music called for basic reinforcement, with minimal mic'ing, while Toups and company, looking for the "big" sound, needed at least eleven mics and four DIs. The different sonic demands of acoustic jazz and amplified rock required the use of flexible, all-purpose mics; I decided to use E-V ND 457 and 457A mics as the basis of my mic

Figure 1. The author's console and electronics package configured for Charlie Byrd.

complement. These are great vocal mics, with excellent gain-before-feedback. I'd also used them as tom-tom, high-hat and overhead mics on drums; reed and brass mics; and for acoustic stringed instruments like piano, violin, mandolin and guitar. The 457 line features the tightest pickup pattern of any E-V ND mic, an advantage for loud stage environments. It's also the most sensitive hypercardioid dynamic mic on the market, with an excellent "reach" for distant sound sources, a quality I felt I'd need for Charlie Byrd. I included an E-V RE-20 and several Shure SM-58 and SM-57 mics for specific needs like kick drum, snare and the mic'ing of instrument amplifiers.

THE CHARLIE BYRD TRIO

Mixing a jazz trio isn't difficult—all you have to do is listen. This maxim sounds simple, but it seems to be incomprehensible to 99 percent of my peers. The simple fact is the music will dictate not only the balance, but the volume required for reinforcement. I've lost count of jazz concerts ruined by soundpeople with rock/pop sensibilities: when you just sit and listen to a trio, are kick and snare the most important instruments? And what about overall level—in an era of amplified music, how loud is loud enough? Assume the obvious: music performed softly and introspectively should be presented in the same manner. Dynamics are extremely important to a trio; the group, not the soundperson, should dictate when things are loud and when they are not. The very nature of Charlie's chosen instrument, and how the group dealt with their overall sound, made the concept of presentation very clear (see *Figure 2).*

Charlie Byrd played a Takamine Electro Classic acoustic guitar, using Savarez nylon strings. He played classical style: he stabilized the guitar against his right knee and chest, elevating it on a raised left knee via a foot stand. Charlie's guitar incorporated a built-in pickup with its own preamp, which required an internal 9-volt battery. He carried a Walter Woods 2-channel amplifier for guitar amplification, using one of my S-200 cabinets as his guitar speaker. We placed this behind him, aiming it slightly across the stage to direct some of the sound at the other musicians (see *Figure 3*). The guitar sounded fantastic; Charlie was very happy with the S-200 cabinet as guitar monitor. Surprisingly, his pickup/preamp system was fairly close to the "real thing" so, with Charlie's blessing, I took a DI straight off the guitar for house amplification. To prevent noise, I had to keep the guitar channel muted until after he plugged in; at the end of each performance, muting it again a split second before he unplugged it. Charlie exaggerated his moves with the guitar cord to insure I'd see them; with this kind of co-operation, we never had a single missed cue or loud "pop."

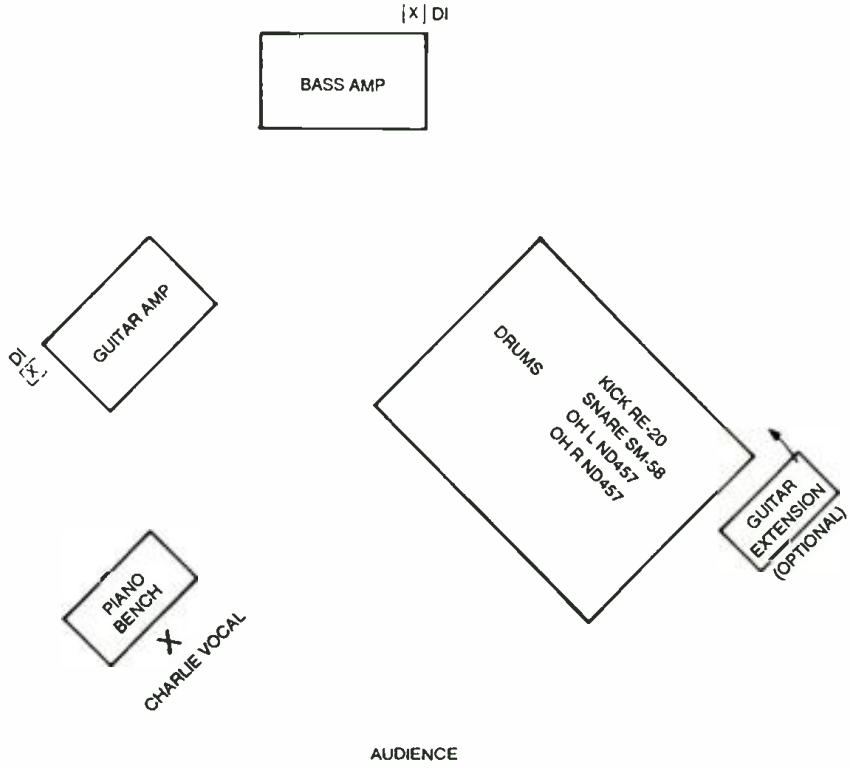

Figure 2. The stage layout for Charlie Byrd.

I used a 457A, with a windblast filter, on a boom stand as Charlie's vocal mic for announcements and occasional singing. At some point during each performance, Charlie would dismiss the group and play several classical guitar pieces solo. I encouraged him to use the vocal mic

Figure 3. Charlie and Joe Byrd.

as a guitar mic during these segments, so we had the option of a contrasting guitar sound for contrasting musical styles. This involved a quick change in channel EQ and level from vocal to guitar; we also killed the guitar amp. I had the option of also using the DI; unless I needed extra gain to compensate for a weak system, I never did. The mic, with a touch of reverb, sounded gorgeous. Charlie's beautiful tone and sensitive playing during these solos never failed to enrapture the audience; volume was so tasteful you could hear the audience sigh.

Bassist Joe Byrd played an Ovation hollow body electric bass with a fretless, short-scale neck; he used D'Addario ½-round strings. Joe eschewed the hassles of traveling with an amp by requesting that one be provided for him at each concert. A Polytone Mini Brute was his preferred choice, but I didn't expect we'd find one too often in Asia. Our audio rider requested an amp with 50-75 watts power, preferably with a built-in speaker instead of a separate component system. Joe preferred a smaller speaker, like a 10 in. or 12 in., for a more concise sound. A 15 in. woofer was the largest he'd accept; 18 in. woofers were deemed unacceptable. When he did use a 15 in. speaker, he wanted all frequencies below 100 hz attenuated at least 4 dB, using amplifier tone controls. I quickly discovered that Joe played softly, with respect to both amp volume and touch on the strings. An instrument-level DI wouldn't give me the kind of gain I needed, so I used a preamp-output DI off our bass amp.

Drummer Chuck Redd decided to carry only certain "personal" parts of his drum kit. These were a 1960s era Slingerland 14 in. × 5 ½ in. chrome snare drum and stand; drum stool; Drum Workshop bass drum pedal (chain and sprocket type); high hat stand; and cymbals, including Zildjian New Beat high hats, an 18 in. K. Zildjian medium ride with rivets, a 20 in. new K. Zildjian medium ride, and an 18 in. Istanbul thin crash. The bass drum, tom-toms and cymbal stands for each concert were procured locally. Our audio rider made very general references to overall kit makeup; the only specific request on individual drum size was the bass drum be no larger than 22 in. in diameter. Redd wasn't looking for a massive kick sound; in fact, he was most concerned about keeping the level of the drums more in line with the volume of Charlie's slightly amplified guitar.

Redd used brushes about 60 percent of the time, and when he played with sticks he would only open up for flourishes at the end of songs or during his drum solos. There were several concerts where I didn't even mic the drums, due to the small size of a venue or its lively acoustic properties. When the kit was mic'd, I kept it simple. An E-V RE-20 was used on the bass drum, positioned just even with the front head (if there was a hole cut in it), or a few inches off the front head (if there was no hole). I always placed the mic off-center to insure better pickup of the drum's even harmonics. A Shure SM-58 handled the snare; I positioned it slightly parallel to the rim of the snare so I could get some of the high-hat sound as well. Two E-V ND-457 mics were positioned as overheads; if venue acoustics were unusually absorptive, I would cheat one of these slightly forward over the rack toms, the other slightly over the floor tom.

STAGE MONITORS

Ask a group to play without monitor speakers these days? Musicians and production people will question your sanity. In the rush to embrace technology, many of us forgot that simplicity can be functional *and* beautiful. Charlie's trio used no monitors, electing to do it the "old-fashioned" way for reasons that made a lot of sense to me: since stage volume was so quiet, it wasn't a question of competing levels, but one of group dynamics. The guys set up physically close to each other on stage so they could hear each other. We spent part of each sound check adjusting the level of bass and drums to compliment guitar level. Since Redd played mostly with brushes, drum level on stage was usually comfortable; however, in some horribly reverberant halls, Redd was advised to "lay back" on how hard he played the drums. It was a distinct pleasure to work with musicians who were actually willing to adapt their stage volume to venue conditions, in the interest of good sound, without copping an attitude.

At large venues or halls with dead acoustics, we sometimes positioned another S-200 next to Redd; this was powered by Charlie's amp as a guitar extension speaker. With Charlie on the opposite side of the stage, Redd couldn't hear the guitar properly at our normal volume. The extension speaker solved this problem without the need for added level off the guitar amp, something which would have made Charlie uncomfortable.

WAYNE TOUPS & ZYDECAJUN

Wayne and I became friends during our first USIA tour together in 1987; I'd stayed in touch with him during the past three years, mixing several of his appearances at the New Orleans Jazz and Heritage festival and other spot dates. Zydecajun progressed from a local Louisiana attraction to a national touring club act with a major label (Polygram) recording contract during this time. The "Blast From The Bayou" album attracted even more attention, leading to a spot as opening act on the Carol King "City Streets" tour and the inclusion of a song on the "Steel Magnolias" movie soundtrack. The group's latest Polygram recording, "Fish Out Of Water," is scheduled for release in early 1991.

Wayne's music was heavily amplified; it had the urgency and power to compete for the attention of pop music fans. The group was most concerned about preserving this power: from their perspective, Zydecajun was a rock band with Cajuns in it, and it had to be mixed as such. Wayne was particularly interested in a heavy drum sound, and the music included many unison lines between accordion, guitar and keys that demanded careful voicing. The group's approach required the extensive use of reverb and delay effects; outboard limiting of the vocals, accordions, bass and keyboards was desirable. The electronics package for Toups would have to be substantially beefed up to meet these needs.

THE ACCORDION

How many rock/pop bands are fronted by full-time accordion players? This band had a great one: Wayne is considered by most Cajun musicologists to be the finest player of his generation. Wayne learned to play the diatonic accordion at traditional Cajun dances, studying with his father and other traditional Cajun musicians playing acoustic music. His development of Zyde-

cajun, while based on this traditional Cajun music, resulted in the creation of an amplified Cajun fusion music, more accessible to a younger generation raised on rock 'n' roll. The inclusion of Zydeco and rock/pop elements into this music, however, placed new demands on the musician and the accordion. The notes available on a diatonic accordion are limited, so the instrument can only be played in certain keys. Modulation of key within a song, a typical rock/pop device, required the use of several accordions during a single song.

Wayne inspired the creation of specialized diatonic accordions, designed and built by Randy Falcon, a noted accordion manufacturer from Louisiana, to help alleviate this problem. These instruments could be played in two different keys, by changing a set of stops on the top of the accordion. Wayne no longer needed to switch in mid-song; he used C/D and E/F Falcon accordions on our tour. Both accordions incorporated a mounted Shure SM-98 mic coupled with a Samson Broadcast Concert Series wireless transmitter. Both transmitters used the same frequency. Since only one was turned on at a time, a single DI off the receiver handled both accordions. The wireless gave Wayne the freedom to perform the way he'd always wanted; the dynamic Toups cut quite a figure dancing, spinning, and running all over the stage and, quite often, into the audience! I used an E-V ND-457A for his vocal, without a blast filter, positioned downstage center (see *Figure 4).* There were a few occasions, where we used a different monitor system or had to cut back on ours, when I used an SM-58 as his vocal mic.

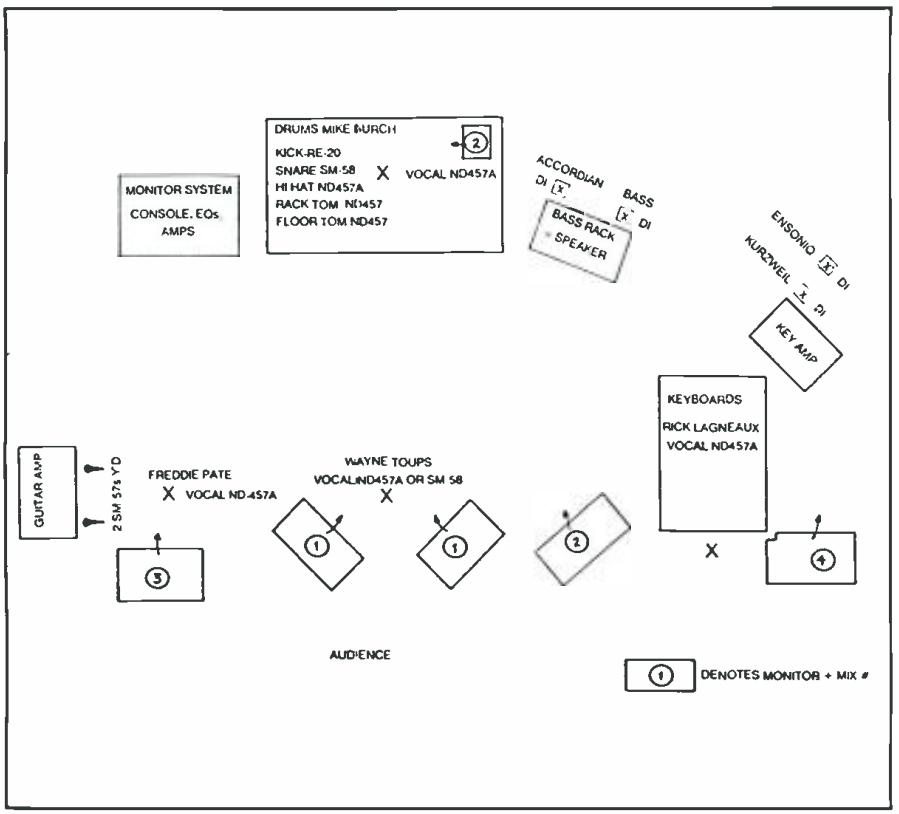

Figure 4. Stage layout for Wayne Toups.

THE GUITAR

Guitarist Freddie Pate played a Robin Rival Series guitar, using Dean Markley medium-gauge strings; this was run through another Samson Concert Series wireless rig. For effects, he used a DOD FX90 delay, DOD compressor, Pro-Co Rat and D'Armand volume pedal. Freddie's amp, a Peavey 400 stereo guitar amp, was placed downstage right, elevated to ear level on a case lid, firing across the stage. We found this enabled everyone to hear the guitar off the amp; we didn't need much in the monitors. It also helped isolate the guitar sound onstage: since the amp didn't bleed into the house, I didn't have a problem with stage guitar levels interfering with the mix. Pate was also able to hear what he needed without the need for excessive volume. This really helped in reverberant halls. Another E-V ND-457A was used for Pate's backing vocals, this time with a blast filter. The guitar amp was mic'd with a pair of Shure SM-57 mics Y'd together into a single channel. I placed these mics right up against the grille cloth of the amp, pointing just off-center of the dome of each speaker.

Rick Lagneaux, the band's keyboardist, was also a significant contributor in another area: he wrote or co-wrote many of the group's original compositions. Lagneaux used Kurzweil K-1000 and Ensoniq VFX keyboards; these were amplified via a Peavey KB-300 amplifier.

His keyboard position was downstage left; we placed his amp behind him on a case lid, angling it slightly to cover the center stage area. We took the same approach here as with Pate's rig, and achieved the same positive results. The VFX was used exclusively for organ sounds, while the Kurzweil handled piano and string sounds.

AC CONCERNS

AC power for the keys was an area of some concern: a Furman AR-117S voltage regulator was used on the keyboard in an attempt to minimize the effects of voltage fluctuations on the temperamental keyboards. For house amplification, I used an individual DI off each keyboard output, so I'd have some flexibility in dealing with the differing levels and tones of each instrument. I incorporated a dbx 166 2-channel limiter/gate, inserted on the keyboard inputs of my house console, so I could better control Lagneaux' keyboard levels, which changed radically from song to song. He also handled the major share of backing vocals in the group. I used an ND-457A with windblast filter here as well, mounting the mic on a boom stand mounted as an attachment to Lagneaux' keyboard stand.

Miller played a Peavey Dyna Bass, using GHS Boomer medium-light strings. He also used a Samson wireless on his bass; the receiver was mounted in the bass rack, which also

housed his Peavey Alpha bass amp, Wayne's accordion receiver and the Furman voltage regulator. The Alpha Bass powered a Peavey 1516 speaker enclosure, which contained a 15 in. and two 8 in. woofers, passively crossed. This speaker was placed on top of the rack, elevating it slightly so Miller could hear it better. A built-in xlr line output off the Alpha Bass had fed the house mix.

Drummer Mike Burch played a basic Pearl set, with assorted hardware from several different manufacturers: a 22 in. × 16 in. bass drum with Camco chain pedal; 14 in. × 3 ½ in. brass piccolo snare with Tama snare stand; 12 in. × 10 in. mounted tom; and 16 in. x 16 in. floor tom. He carried a standard high hat stand, using Paiste Colorsound 5 high-hats, and also used a second set of 14 in. Zildjian Quickbeat high-hats, mounted on the bass drum via a closed hat attachment.

The cymbal compliment was an 8 in. Zildjian EFX splash cymbal, 18 in. Zildjian medium crash cymbal, 16 in. Zildjian medium crash cymbal and 20 in. Paiste 3000 ride cymbal.

For the kick, we used an E-V RE-20, positioned just inside the front head hole, off center. The snare was tight mic'd off the upper rim with a Shure SM-58. The high-hat got an E-V ND-457A; the rack and floor one ND-457 each. These were placed just over the rim of each respective tom and angled downwards at a sharp angle in an attempt to reduce bleed from the snare (see *Figure 5*).

Burch's vocal mic was another ND-457A, with a blast filter. We used a special mic cable for this that had a rotary on/off switch at the male end. Burch could turn his vocal mic on and off as needed; I never had to worry about missing a cue, and drum bleed through an open vocal mic was greatly reduced.

The group included a Peavey MD Monitor console, 16 × 6, as part of their band gear; this was the heart of our on-stage monitor system. I provided 16 channels of monitor Y-s; these provided a parallel split of our stage channels to both the monitor desk and the stage box via a Switchcraft in-line connector and a 4 ft. male XLR extension. I used two Yamaha 2031 stereo graphic equalizers to provide four channels of EQ;

Figure 5. Drummer Mike Burch. Note the placement of mics on the tom-tom.

two of these were then run into an S-200 stereo active EQ box. This box provided electronic compensation for the S-200 cabinets, resulting in extended bass response and a slight increase in gain. I elected to assign these two mixes to Wayne, Burch and Miller, as those were the mixes which required the most "weighty" kick drum.

Two Carver PM-1250 stereo amplifiers provided four channels/mixes of monitor power (see *Figure 6*). I used six E-V S-200 cabinets for our monitor system: two for Wayne, two for Miller and Burch, and one each for Pate and Lagneaux; the Carvers could put 650 watts through the two cabinet mixes, 325 through the singles. The high power output carried the day; after our first sound check, everyone raved about "the level we can get out of those tiny plastic boxes!" Despite the varied requirements of each musician, the S-200 cabinets proved capable of satisfying everyone's needs; I could breathe a little easier.

In the next issue, after a discussion of mixing techniques for the two groups, we'll cover both tours on a country by country basis. We'll visit Thailand, Singapore and the Philippines with both groups; Indonesia, Malaysia, South Korea, Sri Lanka, New Zealand and Fiji individually. db

Figure 6. Wayne Toup, bassist Mark Miller, and drummer Mike Burch. The monitor system is at the back left.