
My Guitar Wants to Kill Your Mama:
Frank Zappa's Lethal Axe

Guitar Player: October, 1995
by James Rotondi

Frank Zappa's guitar solo's unravel like a good murder mystery. seemingly chaotic and elusive at any given point, they have a complex, frightening logic when taken as a whole. Zappa referred to his improvisations as "air sculpture," an instinctive process of molding the air molecules of the concert hall with the chisel edge of his artful axemannship. Like the tabla and sitar interplay in North Indian music, the dialogue between Frank and drummers like Vinnie Colaiuta, Chester Thompson, Chad Wackerman, and Terry Bozzio was polyrhythmic, hypnotic, and dramatic. In long sets of tightly rehearsed material, Frank's solos were like clearings of dense thicket, an opportunity to improvise, to spit out the raw melodic ideas that he composed, edited work was built on. Through unusual rhythmic patterns, odd tonalities, searing tones, and heaps of attitude, Zappa the guitarist created a body of work that rivals his compositional legacy. In fact, the tow are inseparable.

It's easy to point to great moments. There's the nasty baked blues of "Willie the Pimp" from 1969's Hot Rats, the snaking fuzztone of "Transylvania Boogie" from 1970's Chunga's Revenge, the hammer-on frenzy of 'Inca Roads" from 1975's One Size Fits All, the wistful chords of the title track from 1976's Zoot Allures, or the soaring "Watermelon in Easter Hay" from 1979's Joe's Garage. Every guitarist should experience the sentimental pearl notes of "Pink Napkins" or the quasi-Arab warbling of "Canarsie" from the landmark three-CD Shut Up 'N Play Yer Guitar set. And if you haven't heard the bruising alien-blues workout of "For Duane" from the 2-CD instrumental set Frank Zappa: Guitar, hold on to your muffin. But a random sampling barely scratches the surface. As his son Dweezil puts it, "There's such a mass quantity of stuff. Who else tried so many things?"

It's been almost two years since Zappa's untimely passing from prostate cancer at the age of 52. With Rykodisc's monster release of almost 60 Zappa titles already on the streets, and a new collection of alternate versions of Frank's most revered guitar instrumentals in the works, we can now assess and appreciate his work as a whole. Books have been written on Zappa's sociological, political, and compositional significance, and his controversial humor and satire alone deserve some kind of journalistic appraisal. But his innovative guitar playing is topic enough for these pages. His style could almost be cruel in its defiant, aggressive edginess, or it could express a sweet, sensitive side that his lyrics and persona rarely betrayed. "He was as diverse a jewel as you can possibly find," says Steve Vai, who played with Frank from '80 and '82, "and that's why his music is going to live. It's an endless wealth of entertainment and inspiration, and it's quite a treasure for the guitar player who discovers it."

I Come From Nowhere

Zappa began playing at age 18, inspired by the primal, late-'50s blues guitar of Johnny "Guitar" Watson, Guitar Slim, and Clarence "Gatemouth" Brown. Watson's "Three Hours Past Midnight" was one of Frank's favorite solo's, as was Slim's "The Story of My Life." "Stylistically, my approach is closest to Guitar Slim," he said in The Real Frank Zappa

Book[Simon & Schuster, 1990]. "His mangle-it-strangle-it attitude provided an important aesthetic guidepost for the style I eventually developed." But Zappa's ears were also attuned to modern classical composers like Stravinsky, Bartok, and Webern, and he had a taste for doo-wop and Eastern music. So perhaps it's no wonder that as he developed his own guitar voice, Zappa was neither jazzman, art-rocker, blues purist, avant-garde skronkmeister, fusion boy, or metal maven, though he enjoyed and was enjoyed by players from all those schools.

"I think of him as a genre unto himself," says Mike Keneally, who played with Zappa's '88 touring ensemble. "I don't see him as part of a chain, like Chuck Berry to Keith Richards to Frank to Jan Akkerman or something. There area number of guitar players who have owned up to his influence, and I think it's possible that the freakier strain of experimental European music, as exemplified by somebody like Fred Frith, might not have been quite the same were it not for Frank. But when I listen to what's happening with guitar playing nowadays, it's almost as if Frank had no influence at all. The more skewed aspects of what he was doing were so unique to him that they just sailed right over people's heads."

Even Frank's fans didn't always get it. Clamoring for "Dinah Moe-Humm" and "Titties & Beer," they were likely to be disappointed by a sudden eight-minute solo of E Lydian septuplets. "Sure," Keneally responds, "you can feel the energy of a certain part of the audience drop whenever somebody handed Frank his guitar. But there were other people where that was when their interest really peaked. Some people could get into the extended soloing and some people couldn't." Warren Cuccurullo could. "Frank had a guitar voice as strong as Hendrix', but no one really caught on," says the guitarist who joined Zappa's band in 1978, went on to form Missing Persons with ex-Zappa drummer Terry Bozzio, and is now a member of Duran Duran. Around '73, Cuccurullo was turned on to Over-Nite Sensation by a friend: "I was drawn in by the overall sound-the marimbas, trombones, the backing vocalists. But the guitar solos on that album totally fucked me up. I mean, 'Montana'?! People were always talking about McLaughlin and Holdsworth, and I said, 'No, no. This is the guy.' Frank's style was blues-based but not blues-bound. It was Ravi Shankar meets the blues by way of Venus. He's one of the truly unique guitar voices."

Steve Vai first heard Zappa on Bongo Fury's relentlessly smoking "Muffin Man." "My jaw hit the floor," Vai recalls. "He was playing so fast, and it was wild and had real aggression to it. He was a fabulous guitar player. But Frank didn't set out to become a guitar hero. He used the instrument as a compositional tool." Keneally stresses that Zappa's greatest strength as a soloist was his ideas. "he always had that going full-bore, even if he hadn't picked up the guitar in a while and his technique wasn't up to what it could be. He was full of music at all times. He didn't have and fondness for technique at the expense of ideas or regurgitating learned licks that you knew would get an audience off." Cuccurullo also stresses that whether Zappa held a guitar or pen, his ideas, not his skill, were paramount. "When he wrote on keyboards, it was the same ideas. He did some amazing stuff with whammy, effects, and feedback, but his guitar voice was unique because he was a unique composer. That's what came out in his solos. A lot of people play stock guitaristic things, and they may be technically great, but they're not unique like that."

In a 1984 interview with a British fanzine, Zappa was asked whether he felt underrated as a guitarist. "I think I shouldn't be rated as a guitarist!" he shot back. "Rating guitarists is a stupid hobby. I'm a composer, and my instrument is the guitar. If you like the

composition, fine. My technique as a guitar player is fair. There are plenty of people who play faster than I do, never hit a wrong note, and have a lovely sound. If you want to rate guitar players, go for them. But there isn't anybody else who'll take the chances that I will take with a composition onstage in front of an audience, and just go out there and have the nerve, the ultimate audacity to say, 'Okay, I don't know what I'm going to play, and you don't know what I'm going to play, and that makes us equal. So let's go—we'll have an adventure here.' That's what I do. There's no way to rate that. You either like that kind of entertainment or you don't. I'd rather have the ups and downs than the assuredness that I was going to go out there and amaze everybody with technique. I want to hear some music, and the challenge for me is writing an instant composition while I'm playing. That's what I do. I Must say, in all fairness, that without being rated, I know there are people out there who love what I do on guitar."

Friendly Little Fingers

Zappa's technique was as eccentric as any of his absurdist utterances. "Franks right hand looked like a chicken head pecking out the notes," says Dweezil. "He had the weirdest technique ever, and it's real hard to describe in words. You have to see it to understand all the little quirks." Keneally recommends the concert films *Does Humor Belong In Music?* and *Baby Snakes* as good places to study Frank's idiosyncratic hand moves. "The way he pinched the pick is sort of peculiar," he comments. "In the 'Zoot Allures' solo there are some nice close-ups of his picking hand. He was holding the pick flush against the meat of both his thumb and his forefinger as though he was picking out whiskers—pluck, pluck, pluck. It's a neat-looking technique, and it makes the sound pop out. It's an aggressive, very masculine sound, for want of a better term. Every note has a lot of power."

"Once you see it and try it, you can see how those sounds came out," Dweezil says. "He's got a similar style to Eric Johnson—the thumb and first finger move the pick and change the sounds texture, as opposed to the wrist." As seen on the cover of *Shut Up 'N Play Yer Guitar*, Frank often anchored his hand by placing his ring finger and pinky on the pickguard just under the neck, so a lot of his picking took place between the end of the neck and the bridge pickup. "When he had his hand anchored there," notes Dweezil, "you hear a slight harmonic when he chugs the low notes, which you wouldn't get with the traditional technique where your right hand is muting at the bridge." Frank dug into the strings, using upstrokes and downstrokes in odd combinations, picking in circles, and frequently scraping the pick across the strings to create gurgling clusters of notes. "He would slur his right hand across the fretboard upwards towards the lowest strings as he fretted notes," recalls Cucurullo. Frank told GP, "If I pick one note with my right hand, I'm playing five with my left." The scraping technique, Keneally posits, was one way of grabbing a bunch of notes in rapid succession. "If you're scraping your pickup the strings and doing a lot of stuff with your left hand, then it's kind of like sampling," he explains. "There's this big reservoir of notes, and you're just grabbing a handful of them and throwing them out. It wasn't exactly sweep-picking, but he was certainly sweeping the strings."

A predecessor to Van Halen's right-hand tapping technique was Frank's "Bulgarian bagpipe" picking maneuver, in which he hammered on the fretboard with the side of his pick while fretting notes with his left hand. The technique—which Zappa claimed to have

learned in 1972 from drummer Jim Gordon—can be heard on the end of the solos in "Inca Roads" (an all-time favorite of many guitarists) and "Po-Jama People" from *One Size Fits All*, as well as "Variations On The Carlos Santana Secret Chord Progression" and "Gee, I Like Your Pants" from the *Shut Up 'N Play Yer Guitar* albums. According to Dweezil, Frank used small Gibson heavy jazz picks in the early '70s and Fender medium later in the decade before switching to steel picks in the '80s after Dweezil introduced him to Warren DiMartini, who'd been using them with Ratt. But though Frank could certainly play fast with a pick, Dweezil explains that he could attain serious velocity with his fingers as well: "He had a technique that he mainly used for chords. He used the middle finger of his right hand to strum the strings, and he could do it so incredibly fast. It's almost like a rasgueado in flamenco, but it's only one finger." At other times, Frank would produce odd overtones by striking and lightly scraping the low strings with his thumbnail. Zappa's hammer-and-pull technique was highly, if distinctively, developed, and he used open strings in interesting ways. Keneally points to a characteristic riff from "Sheik Yerbouti Tango": "It uses open strings, and it's very whole toneish—a classic Zappa riff." Dweezil explains that the whole-tone lick is accomplished by hammering and pulling on the fourth and sixth frets of the G and A strings in rapid succession. Even played on acoustic, the intervals scream Zappa.

A common criticism of Frank's technique is that he tended to be sloppy, at least in comparison to the hyper-precision of the G.I.T. generation. Keneally deflates the argument: "That's an irrelevant topic. Total uniformity attack, making sure every note is fretted and picked at the same time—that sound had no interest to him. If you listen to any section of a solo where it sounds somewhat chaotic, there's still never any sense that he was out of control. Frank was one of the most awesomely in-control guitar players that ever walked the earth. He isn't playing learned licks, but attempting to invent something, playing within the outer realms of his knowledge of the guitar, and doing that in front of thousands of people. That fearlessness is one of the more noble and ballsy things about him as a guitar player. If that encompassed slop every once in a while, that just meant he was trying something that he hadn't tried before. That's honorable."

Harmonic Aromas

The harmonic and rhythmic substance Zappa's solos is every bit as unique as his physical technique. In 1977, he told GP writer Steve Rosen that his solos are "speech-influenced rhythmically." And harmonically they're either pentatonic or poly-scale oriented. And there's the Mixolydian mode, which I use a lot." Steve Vai acknowledges Frank's liberal use of Mixolydian and remembers that Frank would often simply shift the familiar pentatonic blues scale form to different places on the neck in order to play a different "mode." "But he'd also go off into atonal stuff, altered scales, whole-tone scales, even Hungarian minor," Vai relates. "He could tap into all those things." Keneally points out that, despite his knowledge of scales and modes, Frank rarely let prescribed harmonic parameters limit him. "I don't think he thought in terms of scales as much as melodies, and I doubt that he ever thought modally. He might have started out knowing that stuff, but I think that the tonalities that he favored became such a part of him over the course of time that he didn't have to specifically employ modes. It was intuitive."

Besides sheer confidence, Zappa's adventurousness relied on the very intentional harmonic flexibility of his backing vamps. As he told GP, "I don't like chord changes. I like to have one tonal center that stays there, or possibly with a second chord that varies off

the main tonal center, and then I play around that." Zappa compared his approach to Indian music, in which chordal movement can be implied by the juxtaposition of various melodic lines, despite the lack of conventional chord changes. "That's the way I like to work," said Zappa. "There's a little four-note vamp in 'Treacherous Cretins' (on *Shut Up 'N Play Yer Guitar*) that implies D minor and A chords. It creates a harmonic climate. I don't think of them as chord changes. Instead, I look at the whole as a harmonic attitude that sets up a mood, and I just play inside of that attitude."

"The cool thing about the way he set up all his solos was that he had a wide-open landscape," says Dweezil. "He wasn't competing with the standard accompaniment that most rock guitar players find themselves soloing over." Keneally remembers only rarely playing fully voiced chords behind Frank. "Usually it was just two notes, or a single-note ostinato repeated over and over. There were other times where you might play a repeated part, but as things developed you'd do variations on the theme that were related to the original composed figure. So you were varying it to a certain degree, but ultimately you didn't want to get in Frank's way, because he was playing around with the outer limits of the harmonic content so much that if you got too adventurous harmonically, the chances of stepping on what he was doing were real good."

Zappa loved flattened seconds, diminished fifths, flat ninths—ingredients that Vinnie Colaiuta described as "putting some garlic in your playing." As Frank explained to Matt Resnicoff in a 1991 *Musician* interview, "If your ear hears a harmonic foundation of something, then the interest of the solo is the theoretical difference you perceive on a note-by-note, nanosecond-by-nanosecond basis of what the improviser inflicts on the established tonality. In other words, if you hear in the bass a C and a G, you know, 'You're in the key of C buddy.' When the soloist comes along and plays the C#, he's sending you a message. And where that Q goes is part of the adventure of playing a solo. They're like ingredients in a stew. I mean, there's a right way and a wrong way to stick a C# on top of a C-G ground base. If you play all notes that are part of the C major scale, the recipe you have just prepared is oatmeal, know what I mean? So it's like the difference between eating oatmeal and eating salsa."

Zappa facetiously described the basic harmonic climates—he also called them "harmonic aromas"—to a British fanzine in 1984. If it's an augmented chord, it's a mysterious climate. If it's a diminished chord, it's a little tenser. If it's minor, it's serious. If it's major, it's happy, I fits major 7th, you're falling in love. If it's augmented 11th, it's bebop."

Murder By Numbers

Zappa's rhythms were as spicy and intuitive as his melodies. Even more complex than his asymmetrical time signatures was his phrasing within those meters, as Steve Vai, who transcribed Frank's solos in *The Frank Zappa Guitar Book*, can attest, "Frank had a unique sense of time," says Vai. "He'd often get lost in the meter, but his sense of timing was pretty impeccable. He wouldn't rush, he wouldn't drag, but his sense of phrasing was from Venus. It was like Mongolian jazz or something. Jazz guys will play a phrase by playing eighth-notes over a 4/4. end it on one, and go, 'How'd you like that?' Frank would take a phrase of seven and put it on top of eleven and always know where the pulse was."

In one 1983 installment of the GP column he titled "Non-Foods," Frank insisted that "any piece of time can be subdivided any old way you like. And that's what happens when

people talk, because people don't talk in 4/4 or 3/4 or 2/4— they talk all over the place. And if the rhythm of what you play follows along with the natural scan of human speech, it's going to have a different feel to it." In the same way that he explained the "message" implied by playing a C# against a C major tonality, he saw the juxtaposition of rhythmic textures as crucial for creating musical interest. "If one guy is playing exactly the 4/4 of the bar and another guy is playing nine beats against that, you're going to get another rhythm. That's the difference tone, the mystery note. There's a clock inside your body that's saying, 'We're in 4/4.' So when somebody plays nine across it, inside your body you hear the difference, and that's part of the excitement of that kind of rhythm."

Zappa's solos are loaded with odd-numbered note groupings. "He liked fives, sevens, elevens," notes Keneally. "I'm talking about imposing these groupings over what might be a steady pulse of maybe 3/4 or 4/4 and either playing fast little phrases or maybe long, stretched-out ones, like playing a long, steady eleven-tuplet over two bars of 3/4. On first listening it sounds like he's just doing something that's rubbing up against the basic pulse. It doesn't sound calculated. When he was writing music on paper, composing all those quintuplets or odd meters, that was calculated and done for effect. But when he was soloing, it was very intuitive and not done to be clever. That's just the way he felt stuff, the way his heart would beat. It was just the fabric of his musical soul."

In his GP columns, Zappa singled out drummer Vinnie Colaiuta as a prime agent in his own ability to exploit odd rhythms. "The style that I played on the Shut Up 'N Play Yer Guitar albums was very heavily influenced by the fact that Vinnie Colaiuta is the drummer. You can rely on him—you know that he knows where he is and knows where he's going and will come back. He's not just piddling around out there. And unless you're playing with a drummer who understands that type of rhythm and can stretch it to the maxi, then you're not going to get the same effect. It's not just a matter of ignoring the downbeat, It's purposely and consciously going for things other than a downbeat. And 1m playing a totally different way now that I have another drummer [Chad Wackerman] in the band."

"It's hard for me to explain to guys just coming into the band the rhythmic concept I have about playing," Zappa told Rosen, "because it's based on ideas of metrical balance—long sustained events versus gruppettos that are happening with a lot of notes on one beat, like a lot of sextuplets, septuplets, and things like that. 11 play 13 notes over a half-note and try to space it evenly so it flows. This is sort of against the grain of rock and roll, which likes to have everything in exactly duple or triple, straight up and down, so you can constantly tap your foot to it. The hardest thing for me to do is play straight up and down. Stuff that everybody else does naturally just seems as impossible as shit to me. I don't think in little groups of twos and fours— they just don't come out that way. I can sit around and play fives and sevens all day long with no sweat, but the minute I've got to go do-do-do-do, do-do-do-do, it feels weird, like wearing tight shoes."

The Icepick in The Forehead

"For guitarists, and electric guitarists especially, tone is so important," Zappa told writer Ben Watson in *Frank Zappa: The Negative Dialectics Of Poodle Play* [St. Martin's Press, 1994). "If you can get the right tone, you know your solo is going to go great, whatever the notes. It's something spiritual, to do with the way the fingers respond to what the ear is hearing, a continual refinement and adjustment."

Though many guitarists still associate Frank with a nasty, heavily saturated, midrangey honk, he produced a galaxy of sounds, from the crystal droplets of "Pink Napkins" and "Twenty Small Cigars" to the bludgeoning howl of "Advance Romance" and "Variations On The Carlos Santana Secret Chord Progression," all bespeaking fierce attitude and emotional commitment. In keeping with his original inspirations—Guitar Slim and Johnny "Guitar" Watson, whose tone he once described as an "icepick in the forehead"—Zappa liked his tone loud, abrasive, and raw. His guitar techs—among them David Robb, Midget Sloatman, and Meri Saunders, Jr.—all attest to Frank's spot-on ears and no-bull approach to attaining the sounds he wanted.

"It was very precise and scientific," says Sloatman, who did extensive modifications on Frank's guitars. "I was a screwdriver in Frank's hands. It was, 1 want to hear this, this, and this. Now subtract that. add more of this, take this pickup and swap that pickup with this one.' Eventually it evolved into what he'd wanted to hear in the first place. See, if Frank's rig wasn't delivering the sound that he expected. he wouldn't play. He wasn't kidding, and he wasn't being a prima donna."

Zappa's first guitar was an archtop his brother Bobby bought at an auction for \$1.50. For the first three Mothers Of Invention al-bums Zappa played a Gibson ES-5 Switch-master. He later acquired a Gibson SG, which he liked because of its light weight and thin neck. In the '70s and '80s he used a variety of instruments: two Fender Stratocasters with Performance necks, DiMarzio or Seymour Duncan pickups, and Floyd Rose tremolos; a '70s Gibson Les Paul Custom: a Fender Stratocaster once owned and burned by Jimi Hendrix (in Miami, not Monterey) with a Performance neck sized to the specs of Frank's SG, an acoustic Black Widow with EMG pickups, and several others. In the early '80s he experimented with a D'Mini Les Paule and Strate. Zappa liked very low action. "Frank wanted the least amount of resistance," says Sloatman. "He actually played very delicately." Frank preferred .008s or .009s for the high -E string.

Working with Franks discerning ears, Sloatman developed an onboard preamp/EQ system that was eventually installed in nearly every guitar Frank played. "They were identical parametric filter circuits," explains Sloatman. "One of the filters was set for the bass frequencies from about 50Hz to 2kHz, and the other one was set for the top end, from about 500Hz up to 20kHz." The filters had a variable resonant frequency ("q") independent from the EQ gain. "You could find a tone and get right on top of it, tweak it. and nail it," says Sloatman. The Q ranged from .7 to 10, or a very wide dynamic range to a very narrow one, and was adjustable via a 1/4" screwdriver notch on the face of the guitar. This allowed Frank to control his feedback characteristics in any hall. He could basically tune his guitar to the room, find out how the room responded to the amplifier, and dial it up so he could have maximum control of the feedback. That was the whole point behind the equalizers. But Frank also played a lot with his left hand, and in order to hear the nuances—the string presence—he'd have to bring the treble up, which is another thing he liked about the filters. He could pick high frequencies anywhere from 4k to 8k and bring out the nuances of the strings, so you could hear what his fingers were doing, even if he wasn't picking every note."

The Seymour Duncan humbuckers in Frank's Les Paul could be switched between single-coil, humbucking, or single-coil out-of-phase settings, and a toggle switch controlled whether the pickups were wired in series or parallel. A 9-position wafer switch afforded all the possible combinations. The Les Paul and the Hendrix Strat also housed a Dan

Armstrong-designed Green Ringer, which, explains Sloatman, "is a low-pass filter into a DC rectifier circuit. Because it's trying to convert AC to steady DC, it produces an abundance of a second harmonic. It kind of feels like it's feeding back, because you play a note and instantly hear the octave. But any time you play more than one note, it does this horrible modulation stuff, which Frank loved."

Zappa admitted to being "real fussy about equalization." and he used his wah-wah pedal more as an equalizer than a dynamic device. "Very seldom do I just step on it on the heat like on the old Clapton records where he goes wacka-wacka-wacka," he told Rosen. "Usually what I do is shape the notes for phrasing with it, and the motion of the pedal itself is very slight. I try to find one center notch that's going to emphasize certain harmonics, and ride it right in that area. As a matter of fact, I think I was one of the first people to use wah-wah. I'd never even heard of Jimi Hendrix at the time I bought mine. I had used wah-wah on the clavinet, guitar, and saxophone when we were doing *We're Only In It For The Money* in '67, and that was just before I met Hendrix."

Frank produced gorgeous tones with the Mu-tron Bi-Phase and Octave Divider, as well as a voltage control filter (VCF) circuit from an old Oberheim keyboard, which provides the insanely funky sample-and-hold percolation effect heard on "Ship Ahoy" from *Shut Up 'N Play Yer Guitar Some More*. In 77 he touted an "attractive little device" he called the Electro Wagnerian Emancipator, which he claimed combined a "frequency follower with a device that puts out harmony notes to what you're playing. You can have your choice of any 12 chromatic notes in four parts following your runs. You can't play chords with it, but linearly it'll follow you whether you bend or whatever. Its main drawback is that the tone that comes out of it is somewhat like a Farfisa organ." On later tours, Frank's rack boasted a pair of MXR digital delays, a Roland GP-8 processor, an Electro Harmonix Big Muff, two Oberheim VCF cards, and a Mu-tron Bi-Phase. He'd also incorporate the Synclavier into his stage sound, controlling it via a Roland synthesizer pickup. The only devices Zappa kept footside were a Rat distortion box and his CryBaby (which were sent through a Hush IIB noise reduction unit) and a 12-button stereo relay switcher, designed by David Robb, which directed Frank's signal to one of three or four amp setups and brought effects in and out as desired.

On the Mothers' debut album, *Freak Out!*, Frank used a Fender Deluxe amp. For '70s albums like *Over-Nite Sensation*, *Apostrophe*, and *Zoot Allures*, he generally relied on a simple Pig-nose for studio work, switching to Marshall 100-watt heads and Orange amps for tours. On the 1988 tour, according to Meri Saunders, Jr., Frank used a combination of Marshall, Carvin, Seymour Duncan, and Acoustic 100-watt heads in stereo and mono configurations. All the amps had paralleled, hot-rodded inputs doubled into the bass channel, and each setup had a characteristic tone that Frank could blend in or isolate at will using his relay switcher. For a nasty tone, a single Marshall JCM 800 drove two 1x12 cabs with EVs. The wet signal from the VCF, flangers, and Mu-tron Bi-Phase drove a pair of Marshalls into two open-back 4x12 cabs with Celestion speakers. The clean signal from the Roland GP-8 was fed from two Carvins into 4x12 Marshall cabs. Another wet signal from the GP-8 and the MXR DDLs was sent to a pair Acoustic amps into two closed-back 1x12 EV cabs. All the speakers were kept under the band riser pointing towards the rear of the stage, miked with Sennheiser 421s—and it was loud. When Frank tore into one of his solos, Saunders says, it "felt like the stage was taking off." Vai describes Zappa's 1981

sound as "Godzilla meets Mothra. It was devastatingly loud, heavy, and feedbacky." Frank stayed mobile in concert with Nady 700 series wireless systems.

Tuning was critical during a Zappa tour. as the finer solos would be taken from the live tapes and flown into new sonic settings on studio recordings, a process he called "xenocracy." solos like the ones in "Inca Roads" and "Fembot In A Wet T-Shirt" were captured this way. In the studio, the raw guitar signal would be processed yet again. For the guitar sound on "Shut Up 'N Play Yer Guitar," Dweezil says Frank tweaked the original track with two MicMix Dynaflangers flanging in opposite directions across the stereo spectrum. As Frank told GP's Tom Mulhern in '83, the Dynaflangers could be set to follow the envelope of the high-frequency decay, rather than the amplitude envelope" for what he called a "pillowy effect." "It just sounds thick as hell," Dweezil raves. "You can also hear it on stuff like 'Beat It With Your Fist' and 'Variations On The Carlos Santana Secret Chord Progression.' "

Zappa's live recordings usually included a track of direct guitar, and Vai recalls that in the studio Frank would "take the direct track and send it out to different amplifiers. Then he'd pan those signals with all these odd sounds left and right. You'll hear, for instance, a really clean, flanged guitar on one side, on the other side a Pignose, and in the middle a gargantuan delayed Marshall, all with different reverbs. That's all experimentation after the fact."

"There's an insane progression of tones from tour to tour, from album to album," says Keneally. "Guitar magazines tend to point to that midrange honk, and the goose tone is something that comes up every once in a while, but that's just part of it. In '88 his tone was scary clean and massive. I had some good times just standing there on stage being bathed in his solos." For Frank, tone wasn't simply a matter of amps and effects. After his first show with Zappa in 1980, Steve Vai asked Frank for an honest appraisal of his first night with the group. "He said, 'Your playing is really great, but your tone sounds like an electric ham sandwich.' " laughs Vai. "He told me, 'You have to realize that the tone is in your head.' "

In 1977, Zappa told *Guitar Player* why he championed the raucous guitar solos of Johnny "Guitar" Watson, Guitar Slim, Gatemouth Brown, B.B. King, and other blues players, in words that handily describe his own fretboard explorations. "For my taste," he said, "these solos are exemplary because what is being played seems honest and, in a musical way, a direct extension of the personality of the men who played them." Now shut up 'n play yer guitar.