TUBE MIC Tête-à-Tête

Five tube condenser microphones go head to head.

By Brian Knave with Myles Boisen

The resurgence of vacuum tubes in recording technology is not just some retro-smitten fashion craze like platform shoes and double-knit polyester. Tubes have come back onto the scene because they have a sound that transistors can't quite match. Account for it how you will—even-order harmonics, better linearity, smoother handling of transients—the fact remains that tube gear tends to sound sweeter, fatter, and more musical than its solid-state counterpart.

The ascendance of digital recording has largely been responsible for this renewed interest in tube gear. Almost everyone, it seems, is looking for ways to warm up "cold" digital tracks. In fact, even a number of digital processors (with so-called tube-emulation circuits) have come to market for this purpose.

But the best way to inject some tube attitude into your tracks is with real tube gear. And what better place to start than at the beginning of the signal chain? That's why the recent proliferation of affordable tube microphones is such great news. After all, it was only a few years back that a new tube mic cost upward of three grand—and a refurbished vintage model could go for twice that! Also, whether you bought new or used, the pickings were slim. Fortunately, this is no longer the case. Several tube condenser mics are currently available, and prices have dropped enough to position this once-extravagant piece of gear within reach of the personal studio.

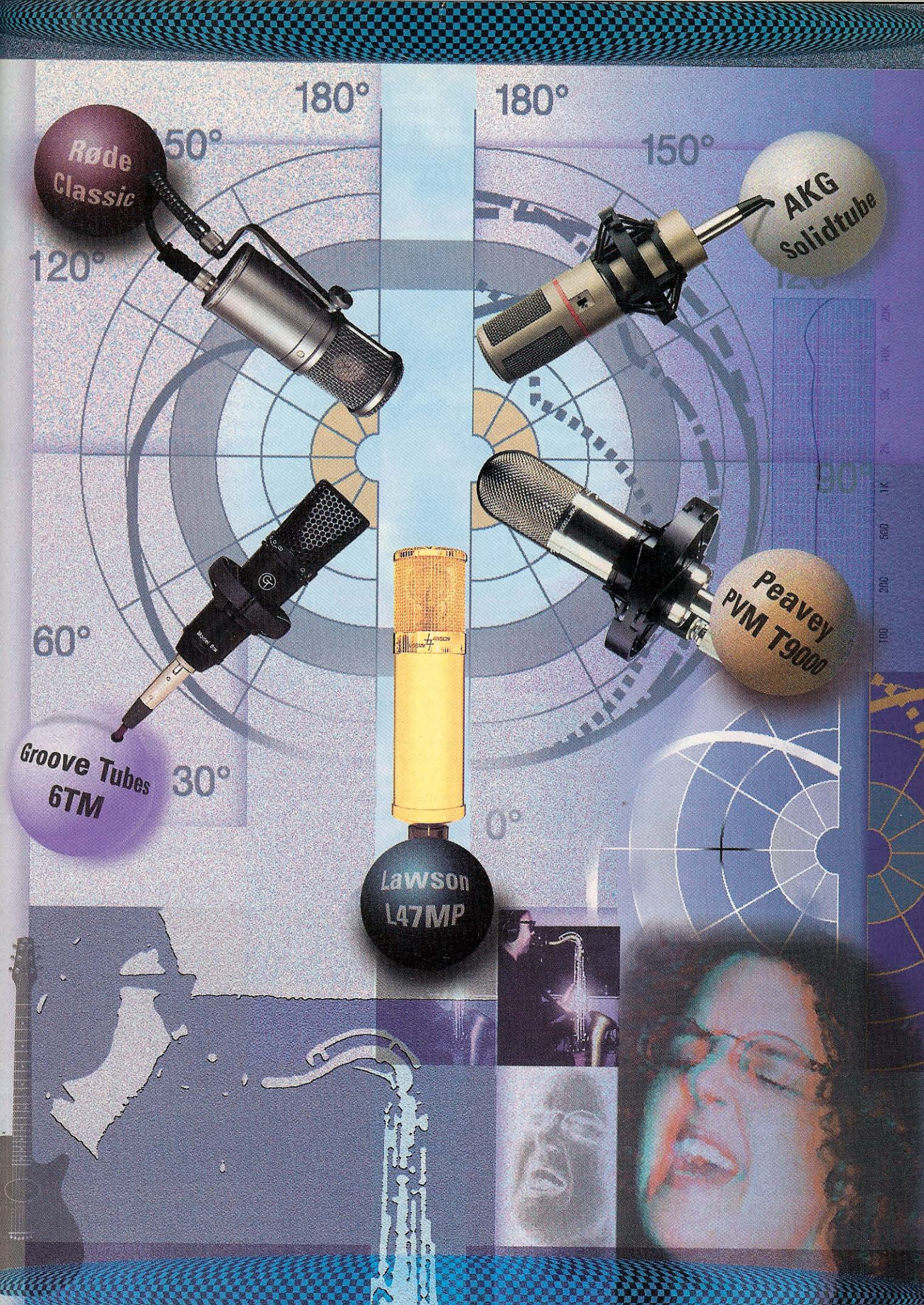
We did a recent head count and turned up five tube condenser microphones priced below $2,000 each: the AKG Solidtube ($1,500), the Groove Tubes System 6TM ($1,395), the Lawson L47MP ($1,995), the Peavey PVM T9000 ($1,299.99), and the Røde Classic ($1,995). To get an idea of how these five tube mics perform—and to help you determine which is most suitable for your recording needs—we compared them head to head on a variety of source sounds.

BEHIND THE SCENES

I enlisted help from friend and fellow engineer Myles Boisen, who co-owns and operates Guerrilla Recording and the Headless Buddha Mastering Lab in Oakland, California. Boisen is a vintage-gear devotee with a soft spot in his heart for microphones.

We did two full days of testing with all five microphones, followed by a number of sessions with individual mics. Altogether we recorded twelve different source sounds: drums (room-miked only), vocals (male and female), sax (both tenor and soprano), acoustic guitar, electric guitar (with the mics on the amp), harmonica, and percussion (including claves, shakers, triangle, and güiro). Drums were played by Karen Stackpole, saxes by Phillip Greenlief, acoustic guitar by Rob Mitter, and electric guitar by Boisen. I played harmonica and percussion.

Illustration by Dmitry Panich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Røde Classic
AKG Solidtube
Peavey PVM T9000
Groove Tubes 6TM
Lawson L47MP

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Vocals, of course, are a primary application for large-diaphragm condenser microphones. For male vocals, we recorded Rob Mitter, lead singer, songwriter, and guitarist for the Bay Area band Altergirl. Mitter sang a couple of jazz ballads ("Time after Time" and "Like Someone in Love") and a rockin' original ("I'm Sick of Pretty Women").

For female vocals, I called upon Bay Area veteran Loralee Christensen, one of the most professional—and powerful—singers I have had the opportunity to work with. She put the mics to the test by singing "Blue Bayou," a song with an extremely wide dynamic range—in this case, more than 40 dB between verses and choruses! Next, to see if the mics could handle the blistering peaks of rock and roll, Christensen belted Janis Joplin's "Take Another Little Piece of My Heart," complete with screams.

We strove to record wide variations in dynamics, technique, and musical styles for all the instruments. Greenlief, for example, played sustained notes as well as fast phrases on each sax, both softly and at full volume. When we found a sound that seemed to trouble the mics a bit—such as high trilling on the soprano sax—we recorded an extra dose of it.

For the acoustic guitar tests, Mitter played both fingerpicked and strummed styles on his Alvarez 5024. Boisen played his Fender Stratocaster through a Tech 21 SansAmp GT2 and a Supro tube amp for the electric guitar tracks, performing both a clean, jazzy vamp and a distorted rock shuffle. For the harmonica tracks, I played a key of D diatonic, and for the percussion tracks, I played traditional Latin patterns.

OFF THE BEATEN SIGNAL PATH

To capture identical performances on each microphone, we clustered the mics with the capsules as close together as possible (see **Fig. 1**) and had the musicians direct their performances to the center of the cluster from one-and-a-half to four feet back. Each mic was in cardioid mode, and no pads or low-cut filters were activated. The signal from each mic was fed from its power supply to a mic preamp and from there directly to tape.

To keep the signals as uncolored as possible, we used a solid-state mic preamp known for its transparency, the Millennia Media Quad Mic Preamp. John LaGrou of Millennia Media supplied us with two Quads configured with 1.5 dB stepped-gain increments (as opposed to the usual 5 dB steps). We put each signal on its own track so we could readily A/B the tracks afterward.

We split the sessions between Boisen's studio, which features a TASCAM MS-16 1-inch, open-reel recorder, and my ADAT XT–based studio. The integrity of each signal path was maintained by using top-of-the-line Whirlwind Quad mic cables (model MKQ). All signals to the ADAT were transmitted at +4 dBm levels via a Whirlwind Elco-to-ADAT interface cable.

SWIMSUIT COMPETITION

Although we're confident you're not so superficial as to buy gear based on sex appeal alone, we'd be remiss not to scrutinize what each mic has to offer in the looks department. After all, careful attention paid to external detail is often an indicator of like attention paid internally.

We also compared accessories and operational issues. Although any of these mics is inexpensive by pro standards, even the cheapest is a big investment for the personal-studio buyer. That makes it all the more important to examine each mic's creature comforts—or discomforts, as the case may be.

AKG Solidtube. The AKG Solidtube is a big brute of a mic with some nice touches. Matte finished in a light taupe, the cast-metal body is distinguished by a red plastic window that allows the user to see the 12AX7 tube glowing inside while the power is on—a fun feature for tube enthusiasts as well as a neat way of determining why, suddenly, your mic has crapped out.

The Solidtube's grille is fashioned from two layers of wire mesh (a coarse, outer layer with a finer one beneath) and includes an integrated pop screen. The pop screen—a layer of foam under the grille—is evidently dense, as it prevents you from being able to see the capsule even while holding the mic up to a strong light. A small switch on the left side of the mic engages a 20 dB pad.

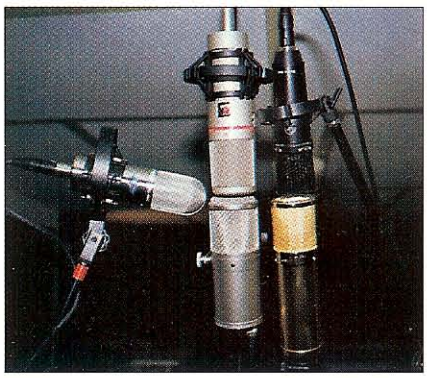
The Solidtube provides a cardioid polar pattern only and employs a 1-inch, gold-sputtered Mylar diaphragm. The mic comes in a foam-lined aluminum flight case that also holds the elastic suspension mount, windscreen, power supply, and connecting cables. The suspension mount is sturdy, easy to position, and easily detached from the mic. (The raised "SOLIDTUBE" logo on the bottom of the mic keeps the mic from slipping out of the mount when positioned upside down.) The Solidtube also mounts directly onto a mic stand from a threaded adapter (⅜- or ⅝-inch) located on the bottom of the mic.

A 30-foot cable attaches to the power supply and bottom of the mic via gold-tipped, 6-pin connectors. It's a bit thin, as audio cables go, but we didn't notice any induced hum while using it. The power supply is compact and lightweight. It provides a 100 Hz low-cut switch and green power-indicator light on the front panel. On the back are the mic, audio, and IEC connectors; a ground-lift switch; and a 115/230 voltage selector. To accommodate overseas operation, the Solidtube comes with a 2-prong IEC power cable.

Groove Tubes System 6TM. The 6TM is a small and elegantly understated mic. Its solid brass chassis, finished with lovely black-nickel plating, is shaped like a Langevin CR-3A, and the grille has a wide, open-hole pattern reminiscent of early RCA ribbon mics. Directly beneath the grille is a sheer, black cloth woven from nylon and copper that surrounds the internally shock-mounted capsule, providing RF and electronic shielding as well as mechanical protection. The mic uses a 1-inch, dual-element, gold-sputtered diaphragm. (Note: the 6TM we tested was an early model that used a 5817 subminiature triode tube. Groove Tubes has since switched to a 5840 subminiature pentode—wired as a triode—which has a lower self-noise spec and is said to give a gentle boost in bass response.)

The 6TM provides four polar patterns, a 10 dB pad, and a 75 Hz low-cut filter, all switchable on the mic. Curiously, two switches control the polar patterns: one for cardioid and hypercardioid and another for omni, cardioid, and figure-8 patterns. (When selected, the omni or figure-8 pattern overrides the cardioid/hypercardioid switch.)

The aluminum flight case that comes with the System 6TM has foam-lined compartments for the mic and power supply on either end and plenty of space in the center for cables and accessories. Accessories include both a suspension-mount and a rigid-mount mic holder. The suspension mount is small, simple, and effective. It features a "twist lock" that snaps the mic snugly into place, allowing for easy removal or repositioning of the mic.



BRIAN KNAVE

FIG. 1: The tube microphones were clustered tightly together so each could capture the same performance.

The Groove Tubes PS2m Dual Channel Tube Microphone Power Supply lets you run a second Groove Tubes tube mic without having to purchase an extra power supply—a smart, economical deal that's especially handy for live stereo applications. The PS2m provides an on/off switch, ground switch, and IEC cable connector on one side and the mic and audio connectors on the other. The 25-foot power cable employs a 6-pin connector on the mic end and locks easily to the power supply via a sliding-hood latch on a gold-plated DB9 connector.

Groove Tubes offers three other tube-mic systems: the System 1a ($1,195; cardioid only), System 2a ($1,695; cardioid only), and System 3a ($2,195; cardioid/omnidirectional).

Lawson L47MP. Depending on your tastes, the Lawson L47MP mic is either gorgeous or garish. Nearly ten inches long and 2.5 inches in diameter, this brass-bodied behemoth is 24-karat gold plated from top to bottom and weighs over two pounds. Excepting the shiny finish, the L47MP looks like a Neumann U 47. The capsule, however, is a reproduction of the Neumann M 7 (the earlier one of two used in the U 47 and M 49 mics) but with a thinner diaphragm. The mic employs a 6072 medium mu triode tube.

The L47MP is internally shock mounted, so no external suspension mount is provided. The hard-plastic mic holder is simple and effective but doesn't inspire confidence because the bottom tube it fits over provides no protective collar to stop the mic from accidentally slipping out. The mic's operation guide instructs you to "wrap the cable around the boom a few times" for protection.

Of the mics tested, three of which provide multiple polar patterns, the L47MP is distinctive in offering a continuously variable control (located on the power supply). This feature sidesteps the limitations of preset switch positions and proved extremely useful for tailoring the mic's frequency response to specific sound sources.

Along with the polar-pattern control, the compact power supply provides a switchable 12 dB pad, on/off switch, and mic, audio, and IEC cable connectors. A shielded, 30-foot Mogami power cable with Neutrik gold-plated 6-pin connectors is included. The whole package comes in an airtight/watertight Pelican-brand protective case complete with an O-ring seal and a Pressure Purge knob for equalizing air pressure after air or mountain travel.

Lawson also offers a cardioid-only pattern tube condenser microphone, the L47C ($1,695). Lawson mics are available directly from the factory only.

Peavey PVM T9000. The Peavey PVM T9000 (reviewed in the November 1997 **EM**) is an elegant-looking microphone with a rounded grille and stainless-steel body. Just above the double-layer, wire-mesh grille are two tiny yellow switches, one for the 10 dB pad and another for the 200 Hz low-cut filter. However, the switches are flush with the mic body, which makes them difficult to access without sharp fingernails or a pointed implement.

The T9000's external suspension mount is cleverly designed to work also as a heat sink for the mic. It provides solid, rumble-free support but is not terribly easy to position, thanks to a large, somewhat slippery plastic knob on the swivel adapter.

Curiously, the shock mount can be removed only by unscrewing and removing the "clamping collar" from the bottom of the microphone. This is easy enough to do but causes the microphone to come apart into pieces—a risky proposition if you're trying to dislodge the mic while it's mounted on a stand. Fortunately, the foam inside the shipping box (this was the only mic tested that doesn't come with a carrying case) is cut to accommodate the suspension mount and mic together, so it's not necessary to remove the mount to store the mic—though it sure would expedite attaching the mount to a boom arm.

Though the T9000 is billed as having a "large-format diaphragm," in fact its diaphragm is one-half inch in diameter—only half the size of the diaphragms in the other four mics tested. The power supply, however, is big and beefy. It has a power switch and IEC connector on one side and mic and audio connectors and power-indicator light on the other. The T9000's 25-foot power cable, which uses 6-pin connectors on each end, and the IEC cable are also heavy duty.

Røde Classic. The Røde Classic is a heavy mic that's shaped like a beer can and built like a tank. Solid brass and finished with lustrous nickel plate, its smooth body is uninterrupted by buttons or switches.

The Classic connects directly to the boom arm of a mic stand via a sturdy L-bracket attached to the mic body, allowing for full 360 degrees of horizontal adjustment. A single, knurled brass screw provides easy and secure mic positioning.

All electrical adjustments are made from the power supply via three large, vintage-style knobs. The first knob provides nine polar-pattern selections: omnidirectional, cardioid, figure-8, and six intermediate patterns (three between omni and cardioid and three between cardioid and figure-8). The second knob is a 125 Hz rolloff switch that lets you cut bass frequencies by either 6 dB or 12 dB per octave. The third knob offers 10 dB and 20 dB pads.

The power supply's rear panel provides mic, audio, and IEC connectors and the on/off switch. Connections between the mic and power supply are made via a thick, 30-foot cable that terminates in gold-plated, 12-pin connectors. Everything fits snugly into the aluminum flight case.

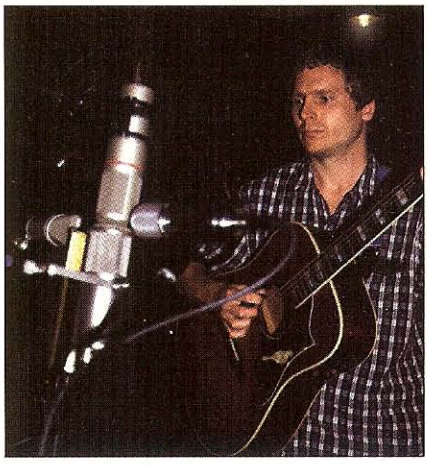
TALENT SHOW

The opinions expressed here are primarily mine and Myles Boisen's. We also noted each performer's impressions; after all, the musician is intimately familiar with how his or her instrument sounds.

Because two of the five mics were cardioid-pattern only, it seemed only reasonable to compare the other three with their patterns set to cardioid. Obviously, this approach doesn't give the multiple-pattern mics their full due (a change in polar pattern usually alters a microphone's frequency response, affecting the sound), but given the scope of the comparisons, we weren't able to test every polar pattern on all twelve instruments.

We did, however, experiment individually with the patterns on the mics that offered them, to get a sense of the tonal range provided. On the Lawson L47MP especially, and the Røde Classic to a lesser degree, the range was extensive. Interestingly, switching between the different polar patterns didn't change the sound of the Groove Tubes 6TM as much—an intentional design, according to Groove Tubes.

We were impressed with all five mics, and each sounded great on its own. Were you to



DAN HERNANDEZ

Rob Mitter of the San Francisco–based band Altergirl plays his Alvarez 5024 for EM's tube-mic comparison tests.

audition any of them individually, it's almost certain you'd like what you heard. It was only in comparison that each mic's tonal "signature" became readily apparent. Putting them head to head pointed up distinctions and nuances we otherwise might not have heard. And although many of the distinctions we make are subtle, even nit-picking, often we were surprised by how differently the mics sounded on different sources.

AKG Solidtube. The AKG Solidtube has a big, thick, warm sound with punchy, accentuated lows and a mildly compressed, "tubey" quality. However, it lacks a bit in high-end clarity and in certain applications can sound boxy or tubby. The upper lows seem exaggerated around 250 or 300 Hz, which imparts a bigger-than-life quality to some sounds. For example, the Solidtube made a wood shaker sound about three times bigger than it actually was, and it accentuated the "clanginess" of the triangle and the low-end thump of the drums.

As a result of this bass boost and the slightly muted high end, the Solidtube is not the best mic for capturing, say, the sparkling tones of a steel-string acoustic guitar. In fact, its soft, rolled-off high end led me to wonder if the tone was not being adversely affected by the Solidtube's internal pop filter.

At the same time, the Solidtube exhibits a distinct "airiness" on top that suggests a boost around 10 or 12 kHz. Boisen felt that this boost sounded somewhat "disembodied" from the rest of the mic's tonality, but to my ear it saved the mic from sounding overly dark. (Greenlief liked the air the Solidtube captured on his tenor sax.) The Solidtube also sounded great on ballad-style male vocals, where it produced a warm, fat, smooth sound with a seductive "vintage" quality. I also liked the mic on harmonica because it quelled the instrument's shrillness and lent some thickness to the tone.

Another instrument the Solidtube favored was electric rhythm guitar (rock style). It enhanced the chunkiness and cutting power of the distorted chords, making for a big, dark sound. The clean electric guitar, played jazz style, exhibited plenty of warmth but came off sounding a bit boxy.

Considering that it offers only one polar pattern, the Solidtube is a fairly versatile mic, and it performed equally well when recorded to digital and analog tape. It's very quiet and proved capable of handling high SPLs and quick shifts in dynamics. However, the Solidtube exhibited more proximity effect than the other mics, and its wide cardioid pattern sometimes picked up more room sound than we cared to hear.

Groove Tubes 6TM. The Groove Tubes 6TM is a bright, crisp, articulate microphone with lots of presence and an impressively uncolored, accurate response. Of the five mics, it sounded the least tubey, yet when compared to a solid-state condenser mic, it still exhibited a mild tube warmth.

Although its brightness sometimes bordered on sounding "edgy" (tenor saxophone) or even harsh (harmonica), we still liked the sound. In fact, the 6TM was flattering to more of the source sounds we recorded than any other microphone in the bunch. This mic really reaches out and grabs the sound, making instruments sound closer than they are. The 6TM sounded great on all the vocal tracks: smooth, intimate, and stunningly present; highly detailed and airy without being sibilant; and accurate, with a full, balanced sound. The 6TM also worked well on soprano sax.

The 6TM exhibits exceptional transient response, too, and handles dynamic shifts without flinching. Except for a slightly thin low end, it represented the sound of the drums in the room more accurately than the other mics, providing a very accurate kick and snare sound, fast transients, and a natural representation of cymbal frequencies. Accordingly, the mic captured a sweet, musical tone from the claves and triangle. And although it made the wood shaker sound slightly "sandy" compared to the real thing, the tone it produced was full and pleasing.

The only instruments we didn't love the 6TM on were guitars, particularly the acoustic, on which it sounded a bit boxy, and the electric rock guitar, on which it sounded somewhat hollow and thin. The mic fared better on electric jazz guitar but produced a brighter tone than some players might want.

The 6TM performed well in both digital and analog formats but overall might be better suited to analog environs due to its

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Jazz saxophonist Phillip Greenlief plays tenor into the array of tube mics at Guerrilla Recording in Oakland, California.

bright, cutting, crystalline tone. Overall, the 6TM is a user-friendly mic that doesn't require a lot of fuss with polar patterns or placement to get a good sound. One of the only drawbacks we found is that it's a bit noisy—not terribly so, but noticeably.

Lawson L47MP. Before getting into particulars, it's only right to explain that the Lawson L47MP had us fooled at first. That's because we did all the initial tests with the mic set to its cardioid pattern—and the cardioid was perhaps the L47's *least* flattering polar pattern. Only when we began to experiment with the continuously variable polar patterns did we learn just how versatile and divine-sounding this mic can be.

Even a small turn of the knob yielded a big tonal shift. For example, turning the knob from twelve o'clock (cardioid) to two o'clock (hypercardioid) caused the L47 to become considerably brighter. This gives the mic a big advantage in terms of versatility but makes it a bit trickier to use to full advantage, as finding the best setting for a particular source sound requires experimentation. It also seemed that positioning of the L47 figured more prominently into the quality of the final sound than it did with the other mics.

Of the lot, the L47 sounds by far the most like a vintage tube mic. That's no great surprise, of course, considering that its design is based on the Neumann U 47. Regardless of polar pattern, the L47 sounds consistently fat, warm, and "tube colored," with noticeable compression characteristics. Given its general tonality, the L47 can cover a range of sounds from dark and covered to bright and articulate. Yet, the tone remains warm, tubey, and compressed.

We loved the L47 on tenor sax, where it produced a smooth, fat, vintage tone, and on soprano sax, where it sounded warm and lush yet maintained sufficient high-end content. The L47 is never harsh sounding. That was readily apparent on harmonica, from which it captured a beautiful tone with smooth, warm, nonraspy highs. As you might guess, the L47 also sounded delicious on male vocals, particularly the ballads, where it imparted a smooth, vintage quality to the voice. It didn't work as well for our female vocalist—the sound was lacking in presence and definition—but probably we could have improved the tone by tweaking the polar pattern.

Perhaps the coolest results we got were on electric guitar tracks, both jazz and rock styles. At this point we were recording to ADAT—but the tones coming back from the digital tape were decidedly *not* digital sounding! Boisen, who is generally unwavering in his disregard for MDMs, said he could have been fooled into thinking he was listening to analog tape. The distorted rock guitar tracks were wonderfully fat, full, and "analog" sounding. And any traditional jazz guitarist would love the solid low end and warm tone that the L47 laid down to digital tape.

Acoustic guitar didn't fare as well with the L47 (in the cardioid setting, at least, the tone was not bright or defined enough), nor did drums and percussion. As a room mic on drums, again in cardioid pattern, the L47 exhibited smothered highs, overly colored mids, and a kind of mushy transient response that Boisen described as "blatty." On percussion, the L47 was also too dark sounding and exhibited a dry quality. The mic seems to compress quickly, foreshortening the resonance and sustain of steep transients. Likewise, it sometimes "caved in," as Boisen put it, on high SPLs. As for self-noise, the L47 is an exceptionally quiet mic—the quietest of the bunch.

Peavey PVM T9000. As noted previously, the Peavey PVM T9000 is not really a large-diaphragm mic. For the most part, the T9000's performance was consistent with this fact. The sound is not as big and bass-responsive as you usually get with a 1-inch diaphragm, and overall the mic worked best on applications that typically call for a small-diaphragm condenser.

For example, on acoustic guitar the T9000 captured a lovely and quite accurate sound that would be ideal for a rhythm track in a mix. The mic has a bright, open sound with good transient response but a somewhat thin low end. (It's pretty common to dial out some lows when adding an acoustic guitar to a dense mix.) However, from a solo-acoustic guitar perspective, the sound was a bit lacking in depth, wood tone, and lows.

Similarly, on distorted rock guitar the T9000 captured a great sound—trashy and "in your face" (in a good way), not muddy in the lows, and full of sparkle—that would be ideal for certain mixes. For the same reasons, though, it came across as cold on clean jazz-guitar tones, and the upper bass response seemed uneven, with some low chordal tones popping out noticeably.

On male vocals, the T9000 again favored rock and roll. It produced a forceful, uncompressed, in-your-face tone that worked well on our male singer's loud, exuberant style. It was crisp and airy on male ballads, too, although lacking in chest tone. However, the T9000 was not so well suited to our female singer, on whom it sounded thin and cold, harsh on loud dynamics, and slightly artificial in the upper harmonics.

Saxophone was one instrument the T9000 simply didn't like. On tenor, it produced a raspy sound with unflattering highs and not enough body; on soprano, the tone was harsh, and the high trills sounded inaccurate. The harmonica sound captured by the T9000, however, had loads of character. Though still a tad harsh for my tastes, it nicely accentuated the metallic quality of the reeds—a good emphasis in certain mixes.

The T9000 really seems to grab onto high frequencies; unfortunately, it doesn't always translate them sweetly. On cymbals, for example, it enhanced the clang rather than the sparkle. It made a wood shaker sound metallic and crunchy and captured too much cold "bite" (rather than depth and warmth) from the claves. And while the T9000 translated the pitch of the triangle more accurately than the other mics, the resulting sound was not particularly pleasant.

Overall—as compared to the other microphones in this test—the Peavey T9000 is bright and thin sounding, mildly deficient in lows, and has a tendency to make certain upper mids sound harsh. Also, it's the noisiest mic of the bunch.

Røde Classic. It's important to reiterate that we directly compared the five microphones in cardioid pattern only. That's too bad because the Classic's nine polar patterns provide a wide tonal palette from which to draw. So our judgments admittedly do not tell the whole story of this mic's capabilities.

In certain respects, the Røde Classic was the most distinctive sounding of the five tube microphones we tested. However, that distinctiveness seemed as much a result of the Classic's somewhat anomalous frequency response as the fact that it's a tube mic.

Specifically, the Classic has a slightly scooped-out midrange (between 800 and 2,000 Hz), a moderate boost in the upper mids (which disappears in the omni pattern), and a big, bright bump between 9 and 15 kHz. The low end, on the other hand, sounds pretty even (though not particularly tight) and has a nice tubey character. The result is a mic with warm lows, silky highs, and a somewhat hollow-sounding midrange.

Possibly because of this "distinctiveness" issue, opinions on the Røde Classic varied more than on the other mics. Our female singer, for example, picked the Classic as her second favorite vocal mic, just below the Groove Tubes 6TM. The Classic is very open sounding and has a wonderfully silky, silvery high end that seems to hit just where many people end up boosting vocals in a mix, anyway. So it lets you get that bright, airy sound from the get-go, without having to add it via console EQ. As you might expect, though, such a glossy high end accentuates sibilance, which bothered Boisen.

Overall, the Classic proved a fine vocal mic. On the slow male ballads it was warm and fuzzy in a good way, with a nice tube roundness, detailed highs, and sufficient lows. On female passages, it sounded smooth and silky, although a tad thinner than I like.

As a cardioid microphone, the Classic was not particularly flattering on picked acoustic guitar—it captured an overly bright high end, slightly booming lows, and not enough midrange response—but it worked nicely on a strummed part. When used on electric

Tube Mic Particulars

Mic	Tube	Diaphragm	Polar Pattern	Shock Mount	Pad	Low Cut	Frequency Response	Maximum SPL	Weight	Price
AKG Solidtube	12AX7	1", 6 micron	cardioid	external	-20 dB	100 Hz	20 Hz–20 kHz	145 dB SPL (w/20 dB pad)	1 lb. 11 oz.	$1,500
Groove Tubes System 6TM	Groove Tubes 5840	1", 5 micron	cardioid, hypercardioid, omni, fig. 8	external and internal	-10 dB	75 Hz	20 Hz–20 kHz (±0.1 dB)	130–140 dB SPL (pattern-dependent)	15.9 oz	$1,395
Lawson L47MP	6072	1", 3 micron	continuously variable: omni, cardioid, fig. 8	internal	-12 dB	none	20 Hz–20 kHz	128 dB SPL	2 lbs. 1 oz.	$1,995
Peavey PVM T9000	12AX7	½", 15 micron (electret)	cardioid	external	-10 dB	200 Hz	20 Hz–20 kHz	137 dB SPL	1 lb. 4 oz.	$1,299.99
Røde Classic	GE 6072	1", 6 micron	omni, cardioid, fig. 8, 6 intermediate patterns	internal	-10 and -20 dB	125 Hz @ 6 or 12 dB/oct.	20 Hz–20 kHz (±3 dB)	130 dB SPL	2 lbs. 8 oz	$1,995

For manufacturer information, please see Contact Sheet, p. 187.

rock guitar, the Classic sounded slightly mushy and "off mic," while, on the clean jazz vamp, it was warm and smooth, but it exhibited a slightly uneven upper-bass response, similar to the Peavey T9000 but with more low end.

It's likely, of course, that other polar patterns would have yielded better results for these different applications. For example, in cardioid pattern, the Classic captured an overly bright sound on saxophones and harmonica. But the Classic's response darkens considerably in the figure-8 mode—and there are three other settings *between* cardioid and figure-8.

As a drum overhead, the Classic produced an interesting, though inaccurate, cymbal sound, while the low end was punchy and mostly agreeable. On percussion, the performance was a bit lacking in body (the triangle sounded thin and the claves too "clacky"), but again, a different polar pattern may have ameliorated these deficiencies. The Classic is noisier than the Lawson L47MP and AKG Solidtube but less noisy than the Groove Tubes 6TM or Peavey T9000.

THE ENVELOPE, PLEASE

Picking winners is no fun because it requires there to be losers—and none of these mics is a loser. As said earlier, each mic sounded great on one or more sound sources, and none excelled on all the sound sources. Compared to what was available in this price range only five or ten years ago, they're all gems.

For overall sound quality, versatility, and value, the Grooves Tubes System 6TM is hard to beat. This is a splendid and inexpensive all-around mic with an uncolored, accurate frequency response; stunning presence; superb handling of transients; and a bright, crystalline sound that complemented almost every sound source. The 6TM shone in both analog and digital comparisons. Its only drawbacks were mediocre guitar sounds and a bit of self-noise (which presumably has been improved with the new tube).

For sheer tube magic, a realistic vintage vibe, and superb craftsmanship, the Lawson L47MP takes top honors. This mic has gobs of tube attitude, and in many cases can single-handedly impart a classic, fat, ultra-warm analog sound to your digital tracks. Its continuously variable polar-pattern control offers a virtual grab bag of tonal options, and it was the quietest mic of the lot.

Depending on your tastes, next honors would go to the AKG Solidtube or the Røde Classic. The Solidtube, though limited to a single cardioid pattern, produced a consistently solid and thick low-end sound that, depending on your recording style and format, could be described (positively) as very warm and punchy or (negatively) as tubby, boxy, or lacking in clarity. Like the Lawson

BRIAN KNAVE

San Francisco Bay Area singer Loralee Christensen, who has sung radio and television spots for Mazda, Taco Bell, Levi's, and others, puts the tube mics to the test.

L47MP, the Solidtube is a quiet microphone, and both its packaging and price point are attractive.

The Røde Classic has a sweet, distinctive sound that worked well on many sources, especially vocals. Its unique frequency response combines a silky high end with fat, tubey lows and a slightly carved-out sounding midrange. The craftsmanship is first rate throughout, and the Classic's nine polar patterns make it an exceedingly versatile mic.

The Peavey PVM T9000 was clearly the mic of choice for certain sounds, especially guitars. Its overall response was more consistent with small-diaphragm rather than large-diaphragm condenser mics and was characterized by good transient response; a bright, sometimes harsh high end; and a mildly deficient low end. Although the price is very attractive, there's no carrying case, and the mic is noticeably noisy.

PARTING ADVICE

So, what's my recommendation? Were money no object, I'd pick up *both* the Groove Tubes System 6TM and the Lawson L47MP. They each sound great, and having both would allow you to cover a lot of tonal ground. Could I afford only one or the other, I'd base my decision on which sound I was most in need of. For example, if you already own a clean-sounding, large-diaphragm condenser mic, and warming up digital tracks is your primary concern, the Lawson L47MP would be the way to go. On the other hand, if you have a nice tube mic preamp (and/or your studio is analog-tape based) and you're looking for a bright, crisp-sounding condenser mic with great presence and a mild tube flavoring, the Groove Tubes System 6TM is a killer deal.

On the *other* other hand, if you do lots of vocal recording and are seeking a versatile and distinctive "signature" mic with a silky sound, the Røde Classic is a real jewel. Or, if you're hankering for a darker, thicker sound with lots of low end and don't need selectable polar patterns, the AKG Solidtube should do the trick. If price is a primary consideration, give a good listen to the Peavey PVM T9000, a most affordable tube mic with a bright, detailed sound and nice tube character.

Brian Knave *is assistant editor at* **EM**. *Special thanks to Myles Boisen, Loralee Christensen, Mary Cosola, Phillip Greenlief, John LaGrou, Millennia Media, Rob Mitter, David Roudebush, Karen Stackpole, and Whirlwind.*