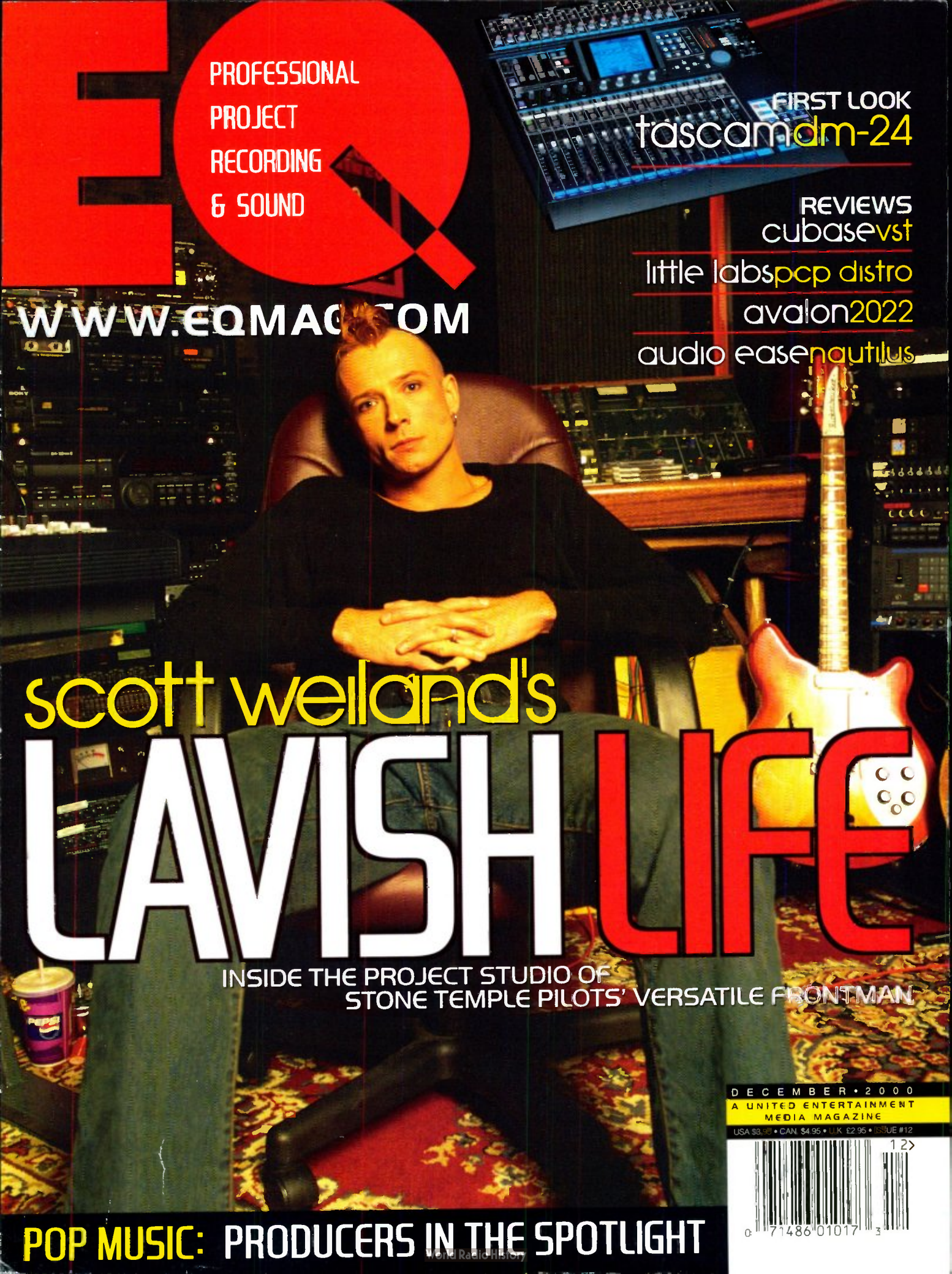

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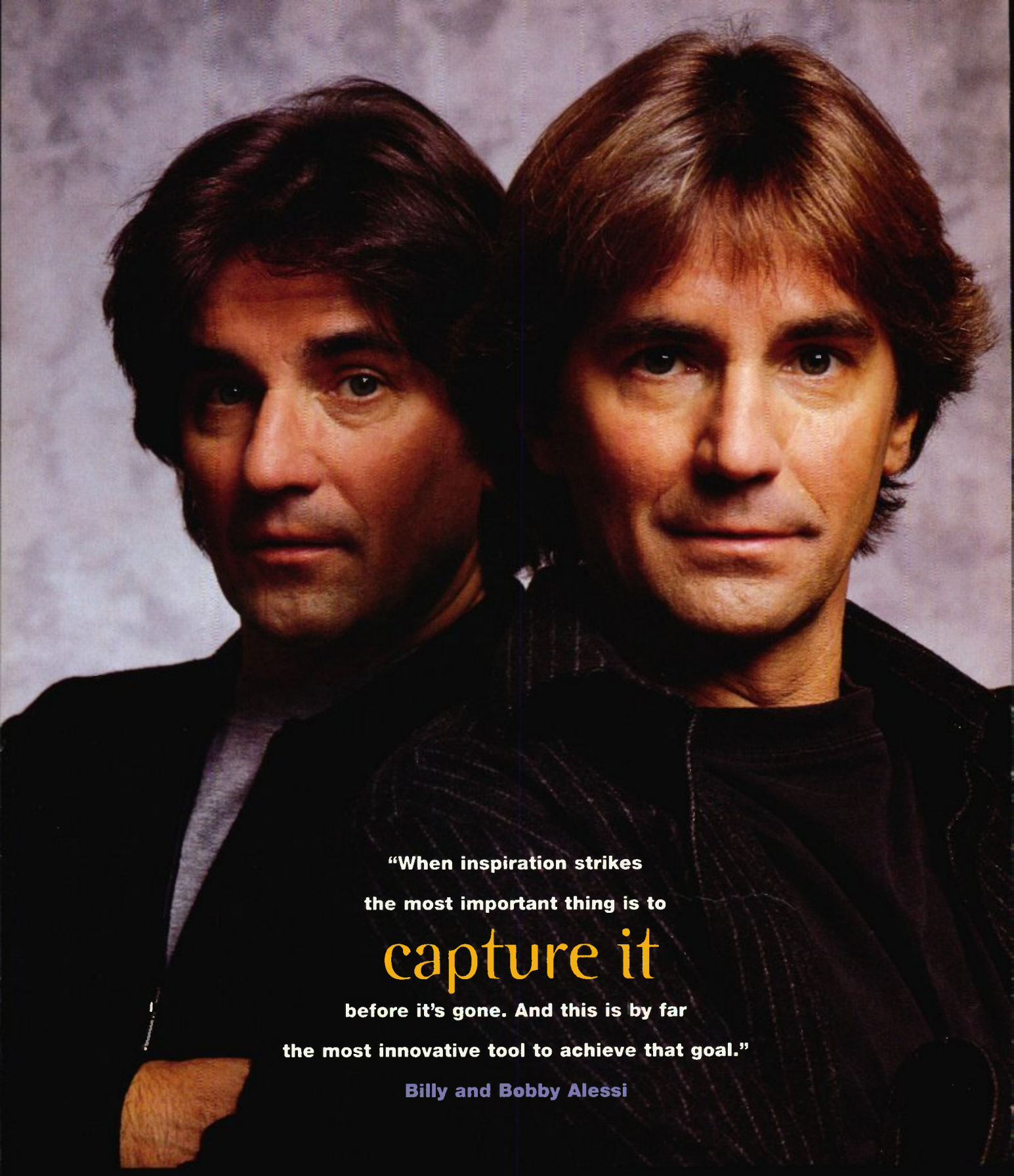

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To find out more about the Alessi Brothers visit www.alessibros.com. And be sure to listen to the Alessi Brothers' PS-02 demo at www.samsontech.com.

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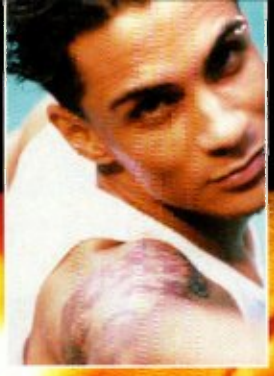


VOLUME 11 • ISSUE 12

CONTENTS

FEATURES

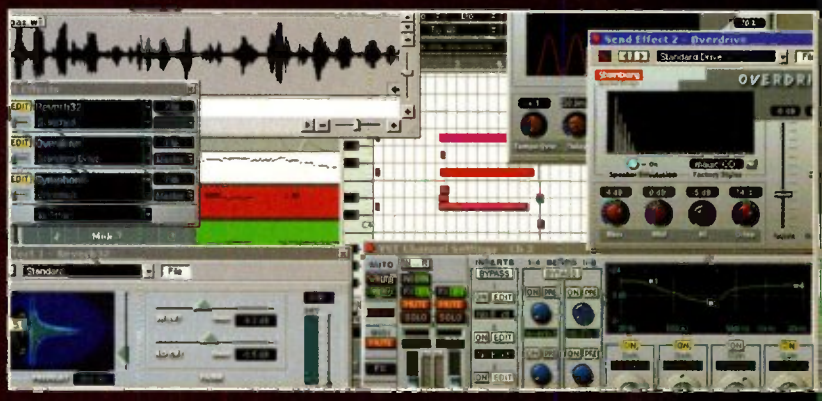
TECHNIQUES

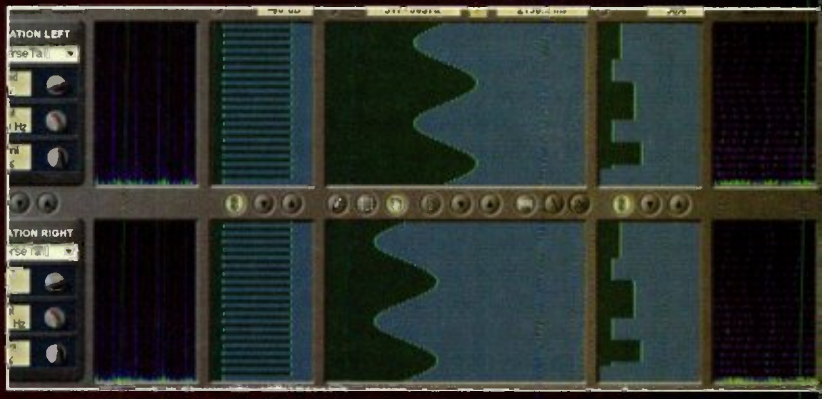
ON THE COVER:
Scott Weiland by Chapman Baehler

REVIEWS

COLUMNS

DEPARTMENTS





EDITOR

EDITORIAL

Dear Santa

As I write this, we're just about to swing into the annual year-end holiday season; Thanksgiving, Hanukkah, Christmas, New Year's Eve — they're upon us once again. Traditionally, this is a time of year when we take stock of where we're at and where we want to be, start planning and hoping for the new year, and so on. With that in mind, here's a few of my holiday hopes for this year:

• You'll never catch me hoping for technological advances to slow down or stop, but I do hope that, in the coming year, new technologies can be introduced and absorbed by users in a more pain-free manner. Wouldn't it be nice if all upgrades went smoothly? If there were no backward compatibility problems? If you could just plug new gear in and it worked with your old gear without any difficulties?

• Speaking of technical advances, is there any hope that sample rates and bit resolutions will settle down in the coming year? We now have *plenty* of choices as to which to use, and it appears that the situation will get even more complex with DSD-based products beginning to put in appearances. It would be nice to know, if even for the briefest of instants, which of these choices would be the best one to commit to.

• While I'm a fan of software modeling of hardware gear, and of plug-ins that "replace" hardware, I can't help but wish that more effort would be put into developing unique, innovative processing, whether modeled, hardware, or software. Products such as the Audio Ease Nautilus bundle (reviewed on page 108 of this issue), Digidesign's Bruno and Reso, and Native Instruments' Spektral *Delay* (see the First Look on page 28) are excellent for those of us looking for new sonic possibilities. Surely there's room for even more innovation as software, computers, and technology continue to advance. While it's cool to re-create and re-introduce the past, let's also keep an eye toward the new and the groundbreaking.

• I hope that the powers-that-be behind surround sound technologies are able to reach some agreements on standardizing various aspects of production. Right now, there are too many formats, delivery mediums, and vague "specs" — a real effort to make things easy and straightforward for engineers to deal with could lead to a big boost in surround acceptance.

• My biggest wish is for more music to made from the hearts and souls of musicians, producers, and engineers, and less from the minds and wallets of business people. There's nothing wrong with "commercial" music, or with making money with music — but the idealist in me always hopes for an increase in music created and released purely for the sake of the music.

Enjoy the holidays, and best wishes to you for a happy, safe, prosperous, and success-filled New Year from the entire *EQ* staff!

—Mitch Gallagher
mgallagher@uemedia.com

EQ

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–TERENCE SLEMMONS, SLEMMONS MUSIC SERVICES

THE BIG THREE

I never do this, but I think this is important. The September issue of *EQ* was great! This magazine has grabbed and held onto the most knowledgeable and eloquent writers in the industry.

Item one: If the FezGuys ask you for a doubling of salary, pay it.

Item two: Please tell Roger Nichols to keep writing thrillers — I love stories from the trenches. Especially when they end well (albeit expensively) for the guys in the white hats.

Item three: Al Kooper's "been there" and "done that" — he's an inspiration, every time.

Tom Hitt
Cycling Troll Recording Studio

[*Ed. note to FezGuys: Don't even think about it.*]

PORN VS. PRO

I am sending this email because I was seriously offended by an advertisement placed by EMTEC. I read your magazine as a professional to understand new trends in the world of recording. Not to get pornography shoved in my face. There are other magazines that can fulfill that role.

Would you please keep *EQ* magazine professional? I really enjoy your magazine and want to continue my subscription.

Jeff Stuber
via email

WORLD-CLASS

Great mag! I've been an [*competitor's name deleted because we're nice guys*] subscriber for years, but I think your product blows the competition away. What I like in particular is the emphasis on the recording process (and your engineers/producers seem world-class). I have just ordered my first subscription. Please keep up the good work!

I could do without the pictures of half-naked ladies in your advertisements, though!

Ken Schleimer
via email

OLD STYLE

EQ is my favorite magazine. I have been reading it since its first issue. Please consider me a loyal fan. I noticed that you changed the design last month. I preferred the old style; it was easier to read.

Jan Stevens
via email

HE LIKES IT

Incredibly, I somehow let my subscription to *EQ* lapse, so I didn't get the October issue until I picked it up off the newsstand today.

Wow! What an accomplishment. The new design is so fresh and uptown, more like a general interest book than a trade journal. I always thought *EQ* looked better than most books (especially the horrifying [*competitor's name deleted because we're* really *nice guys*], the less said about which the better). But this just tears the roof off the sucker.

You must be getting plenty of accolades, but let me heap on another.

Jim
via email

THANKS FOR NOTICING, NO APOLOGY NECESSARY

The November issue just arrived. My issues used to arrive in the middle of the month. I apologize for not complimenting you sooner about noticing that a bunch of people must have worked really hard to get it published and delivered at the beginning of the month, now. Great work.

But I'm really writing to say that I am not offended by the BASF advertisement, in case you're keeping score.

Bill Fosbury
via email

CONTROL ROOM READING

I've been a subscriber to *EQ* for at least five years and I've learned a great deal about recording and mixing techniques, the business of music, and what new gear is hot and what's not. I enjoy reading interviews with other engineers and producers to see how they approach getting a certain sound. When you review a product, it seems that you really tear it down and use it in real-world situations instead of just promoting it based on its name recognition.

I enjoy your magazine so much that I am constantly referring back to past issues. I even keep them proudly displayed in my control room, where my clients can browse through them.

This is where the problem lies. I'm fortunate to have a very diverse clientele. Even so, I have never had to worry about anyone reading or seeing anything in your magazine that would be offensive until the last couple issues. The current BASF ad is pornographic. If I wanted to look at pictures of nude women, I would pick up a copy of *Playboy*. I don't keep *Playboy* mags in my control room for many reasons. Now I feel that I have to remove some of my *EQ* mags in order to keep from offending any of my studio's clientele. I'm seriously considering canceling my subscription if the ad is not pulled.

On a similar note...I'm sure there are many people that are fascinated with Marilyn Manson — I am most definitely not! There are enough highly talented, artistic, forward-thinking musicians, engineers, and producers out there besides Manson and the people that work on his music. Put someone else on your front cover.

I may seem prudish to you but, whether I am or not, I have always enjoyed your magazine because every page in it was devoted *completely* to something that I have always been very fascinated with and passionate about. I never had to worry about pornography or the occult, I could pick up your magazine, dedicated to music, and read it cover to cover.

There's enough garbage out there in print. Keep it out of your magazine!

Matt Barclay
via email

[*Per your demand, we've put someone else on the cover this month. And yes, we've long suspected that Mitch Gallagher and Hugh Hefner are one and the same.*]

MY MOM IS A BETTER ENGINEER THAN YOUR MOM

Please! If my mother had recorded Jimi Hendrix through a toaster, it would still have been Jimi Hendrix. Mr. Kramer and Mr. Kolotkin need some perspective [see "Whodunnit" in Letters, October '00]. They would be nothing without the artists who really make the music. Their cat fight is annoying at best.

Terence Slemmons
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MIXING DISTORTED GUITAR

I'm having trouble getting a distorted guitar to "sit" in a mix. The amp is a modified Marshall 100-watt head through a 4x12 cab close-miked with an SM57, using a humbucker-equipped guitar. It's set loud, with bottom-endy EQ and a fair amount of distortion.

When I take low-mids out at the amp, the sound is too bright and edgy. If I turn the distortion down to take off the edge, I lose the tone I'm trying to capture.

If I just track it as it is and then try to EQ at the mixing stage, the guitar just sounds pathetic — again, no warmth at all. Furthermore, when I try to add more fader, it just seems to cloud up the mix; if I use less fader, the entire mix loses because there's no guitar.

—mriley

Try putting the speaker cabinet up on a road case or a chair — get it off the floor. Now that you can hear it, get the tone you want in the room. Now record it.

Equalizers, except when used in small amounts by people that are adept at using them, are evil. Avoid them.

Mind the relationship of the guitar to the other instruments — they all have to work and play nicely or it ain't gonna work. Is the bass interfering with the guitar? Is there a keyboard playing in the same area as the guitar?

One of my favorite "stupid pet tricks" for giant guitar sounds is to record an ambience mic with each guitar track. Put a "ducker" on the ambience track that's keyed off the lead vocal (and any other important vocal event), so when the singer sings, the guitars get a smidge smaller, and when the singer shuts up, the guitars rule.

—Fletcher

Sometimes you can get those guitars to work by using what I used to call the hockey sticks: Grab the high-pass filter knob and find out by sweeping it where the *nalgas* lies in the sound. You know, turn the knob to the right until you feel the sound wilt a bit, then go back a tad so the power returns. Compensate a bit with some low shelf if it seems necessary.

If you want "absolutely huge," I find automation very helpful. I give the faders a little push when the notes end and you feel the cabinet thump. That way you get that giant hit at the end of the notes, which tells the listener just how antisocial your guitar player is, and settle it back into music mode while the groove carries on. This is especially cool when you have some bus compression on the mix.

—whynot

SDRAM

I was reading some specs, and I found SDRAM of 100 MHz and of 133 MHz. What is this frequency? Is it a property of the memory or a property of the motherboard?

—tzouras

Those are motherboard speeds. New PC motherboards run at 133 MHz and all new Macs run at 100 MHz Bus speed.

—David Frangioni

If I buy a new motherboard that has a frequency of 133 MHz, can I use the SDRAM chips that I was using on my old 100 MHz motherboard?

—tzouras

Yes, you can still use PC100 on a motherboard that supports PC133; you just won't see the benefits. It's not recommended to mix PC100 and PC133.

—Randyland

Also, there are more than two types of SDRAM — make sure that whatever you're using is the same in all banks, ideally from the same manufacturer.

—Quin

How about when you "overclock" your motherboard? Does this speed up your busses?

—caiv

WEBLINK

Have a question you'd like answered? Visit Roger Nichols, George Massenburg, Ed Cherney, Al Kooper, and David Frangioni online at www.eqmag.com.

This is a confusing subject, as all motherboards are different; CPU, bus speed, BIOS, make, model, etc. all play into what can be overclocked and what can't.

On the new jumper-less motherboards, when the CPU is overclocked, the bus typically follows the increase. On older motherboards that have physical jumper settings, you can overclock just the CPU, leaving the bus speed the same. However, many times a combination that overclocks both the CPU and bus offers the fastest performance.

Keep in mind that, when you overclock, you're requiring components to perform outside their ratings. I do *not* recommend overclocking; problems may include, but aren't limited to, severe temperature increase, system unreliability, and overall instability. In many instances, the best option is a new CPU and/or motherboard.

—David Frangioni

MIXING STYLE

Does your mixing style vary for a ballad versus an up-tempo song? If the answer is yes, how?

—Swede

Good question. Never really thought much about that up to now. I suppose that since I use less, and different, reverb overall these days, the differences in approach to a mix are fewer. I still invariably start with a fast rough mix of everything that leads me to an idea of where to put the lead vocal. I then do a lot of the finishing on the lead before tweaking, say, drums. Unless there's a special instrument, or an instrumental lead, I'll approach it the same for just about everything I do.

But now that you mention it, mixing for 5.1 requires a different approach. I'm still learning what works, so I'll spend a *lot* of time putting instruments up, processing them, and finding some kind of cool space or placement for them. Then work with the lead, *then* go back and mix the track.

—George Massenburg

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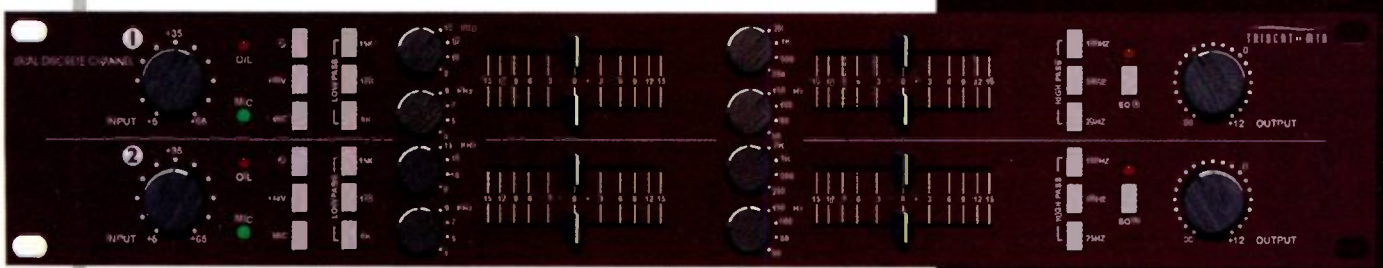
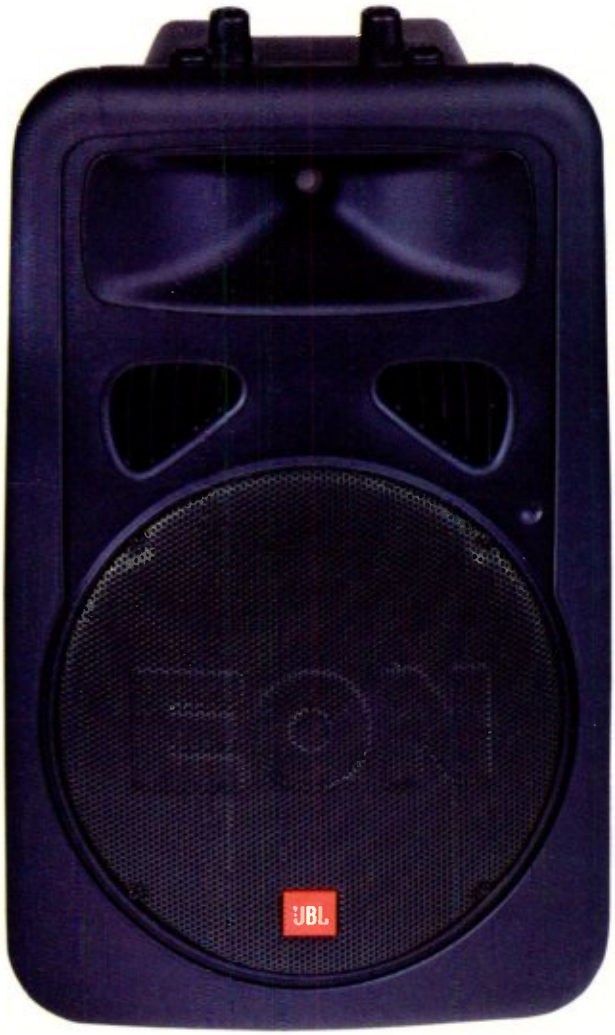
THE PRODUCT: Cakewalk Pyro
THE BASICS: MP3 and CD creation software
THE DETAILS: If you're into ripping and burning, you'll love Pyro. This Windows-based software allows you to convert your favorite audio into an MP3 or WAV file and to burn it on CD. Cakewalk's ESP (Environmental Sound Processing) technology allows you to quickly optimize the audio quality for the playback environment, and DirectX support allows Pyro to work with your favorite plug-ins for the application of real-time effects.
CONTACT: Cakewalk at 888-225-3925 or **www.cakewalk.com**. Circle *EQ* free lit. #102.

THE PRODUCT: Trident-MTA
THE BASICS:: Dual channel strip from the Trident A series
THE DETAILS: The vintage Trident A series console is still revered by many professional engineers for its memorable design and sound. Now it's been preserved and authentically recreated in a modern package, suitable for the digital studio. Features include a transformer mic preamp with the original switched input gain control, a set of three high pass and three low pass filters — all discrete Class A — classic inductive EQ, and an output gain control that ranges up to a peak output of +28 dB.
CONTACT: JoeMeek at 310-373-9129 or **www.pmiaudio.com**. Circle *EQ* free lit. #103.



THE PRODUCT: Line 6 DM4 Distortion Modeler
THE BASICS: Fuzz, distortion, and overdrive in a box
THE DETAILS: Featuring 16 models of classic and collectible fuzz, distortion, and overdrive effects — plus four user-programmable presets — the DM4 gives guitarists easy access to a set of world-class tones and controls for customization. Many of the effects were inspired by well-known stomp boxes such as the MXR MicroAmp, Ibanez Tube Screamer, ProCo RAT, Arbiter Fuzz Face, Vox Tone Bender, and Colorsound Overdrive. All processing is 24-bit, and bass, middle, and treble tone controls let you set the perfect grind or growl.
CONTACT: Line 6 at 805-379-8900 or **www.line6.com**. Circle *EQ* free lit. #104.

THE PRODUCT: JBL EON G2
THE BASICS: Live sound powered speaker system
THE DETAILS: Here comes the second-generation EON — the G2. The EON15 G2 pairs a 300-watt power amp with a 15-inch low-frequency driver and a 100-watt amp with a 1.75-inch compression driver. Also included is a built-in three-input mixer with a balanced mic/line input, two 1/4-inch phone line-level inputs, and dual-band EQ. A Mix Out feature allows the mixed output to be sent to an external mixing console. The appearance has also been updated, with an all-black finish.
Contact: JBL Professional at 818-894-8850 or **www.jblpro.com**. Circle *EQ* free lit. #105.



THE PRODUCT: Sony CDR-W33
THE BASICS: CD-R/RW recorder
THE DETAILS: Yeah, we know, there are lots of CD recorders out there, but how many of them have Super Bit Mapping processing? Just one — the rack-mountable CDR-W33 from Sony. But wait, there's more: features such as a wired remote control, onboard DSP for equalization and limiting, 24-bit A/D and D/A conversion, and even CD-Text support, which allows you to enter track titles from an optional PC keyboard — you can even use the keyboard for remote transport control. Digital I/O is both coax and optical.
CONTACT: Sony at 201-930-1000 or **www.sony.com/proaudio**. Circle *EQ* free lit. #106.

THE PRODUCT: Crest X-VCA
THE BASICS: Live FOH console
THE DETAILS: The aptly named X-VCA provides VCA control of all input channels and analog subgroups plus linked (stereo) dynamics on all subgroups. The console is available in 24, 32, 40, or 48 mono input channel configurations (each also includes four stereo line input modules). Each mono channel includes a variable high pass filter and four-band parametric EQ. Parametric output EQ and adjustable RMS limiters (to assist the engineer in handling local noise ordinances) are included on the mono and stereo outputs. A comprehensive MIDI scene mute system provides 128 computer-controlled sequenced scene mutes plus eight manual scene mutes.
CONTACT: Crest Audio at 201-909-8700 or **www.crestaudio.com**. Circle *EQ* free lit. #107.

THE PRODUCT: Audio-Technica ATW-7373
THE BASICS: Handheld condenser wireless system
THE DETAILS: Thought you couldn't get good studio sound in a handheld wireless system? Think again. The new ATW-7373 system from Audio-Technica combines the condenser element from their legendary AT4033 studio mic with the RF performance of their 7000 Series frequency-agile UHF system. The ATW-T73 transmitter provides excellent off-axis rejection and enhanced internal shock mounting, and the half-rack ATW-R73 receiver provides dual independent receiver sections for true diversity operation.
CONTACT: Audio-Technica at 330-686-2600 or **www.audio-technica. com**. Circle *EQ* free lit. #108.

THE PRODUCT: Eventide DSP7000 Ultra-Harmonizer
THE BASICS: Stereo multieffects processor
THE DETAILS: Building on the success of their DSP4000. this new Ultra-Harmonizer from Eventide offers 500 factory presets, including lush reverbs and the company's famous pitch-shifting algorithms. Both analog and digital I/O are provided (each with independent gain controls and metering). and all conversion is 24-bit/96 kHz. The DSP7000 is also compatible with the optional EVE/NET remote control unit, making it possible to freely edit your effects without ever having to leave the sweet spot.
CONTACT: Eventide at 201-641-1200 or **www.eventide.com**. Circle *EQ* free lit. #109.

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*Cubasis VST for Macintosh available later this year

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THE PRODUCT: Roland Studio Set
THE BASICS: Electronic percussion kit
THE DETAILS: Studio Set combines the heart of Roland's acclaimed V-drums — the TD-8 Percussion Sound Module — with lower-cost pads. You get the same great modeled sounds and editing control that allows you to shape individual drum size and depth, head type, and tuning, muffling, and even snare strainer adjustment. Included are three 10-inch dual-trigger pads, four 7.5-inch dual-trigger pads, a kick trigger, a hi-hat control pedal, a custom stand, and all necessary mounting hardware.
CONTACT: Roland Corporation U.S. at 323-890-3700 or **www.rolandus.com**. Circle *EQ* free lit. #110.

THE PRODUCT: TASCAM 788 Portastudio
THE BASICS: 24-bit hard disk recorder
THE DETAILS: My, how those Portastudios have grown. The TASCAM 788 features six-track simultaneous recording of uncompressed 24-bit audio and eight-track playback, plus an internal hard drive and eight-channel mixer. Each channel provides three-band equalization, and there are two independent internal effects processors.
CONTACT: TASCAM at 323-726-0303 or **www.tascam.com**. Circle *EQ* free lit. #111.

THE PRODUCT: Sennheiser Kick Pack
THE BASICS: Kick drum mic plus accessories
THE DETAILS: Want that whoomph of your bass drum to really power through? It all starts at the source, and the Kick Pack provides you with everything you need to deliver that bone-rattling low end. Included is an e 602 mic (from Sennheiser's acclaimed Evolution series), cable, and mini mic stand.
CONTACT: Sennheiser USA at 860-434-9190 or **www.sennheiserusa.com**. Circle *EQ* free lit. #112.

THE PRODUCT: Earthworks 1024
THE BASICS: Mic preamp
THE DETAILS: Said to be cleaner than most wire, the four-channel Earthworks 1024 boasts an incredible distortion spec of less than 0.0001% and a phenomenal frequency range of 2 Hz to 100 kHz.
CONTACT: Earthworks at 603-654-6427 or **www.earthwks.com**. Circle *EQ* free lit. #113.

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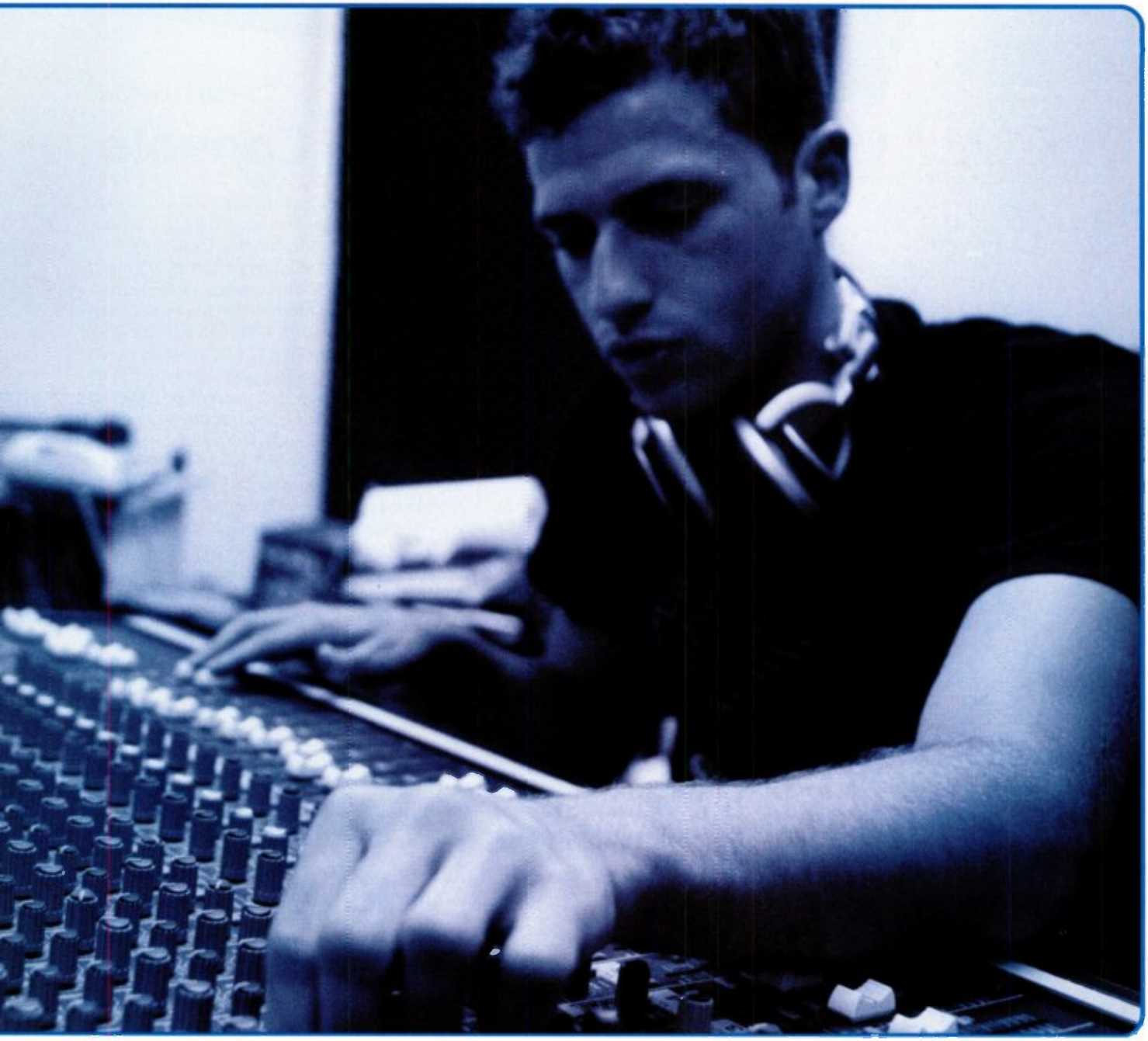

By Steve La Cerra

TASCAM DM-24 Digital Mixing Console

TASCAM made a lot of noise at the AES Convention several weeks ago with the introduction of their DM-24 digital mixing console. The DM-24 was designed to be the first affordable 24-channel/eight-bus console capable of 24-bit/96 kHz operation. Included in the DM-24 as standard are 24 channels of TDIF I/O, an ADAT optical I/O, two AES/EBU digital I/Os, and two stereo S/PDIF I/Os. A pair of slots on the rear panel allow the addition of AES/EBU, TDIF, or ADAT digital, or analog expansion cards. Analog-to-digital and digital-to-analog converters are 24-bit, while an internal 32-bit floating-point processor ensures true 24-bit audio performance.

Sixteen 100-mm faders control a total of 32 channels. Twenty-four of these channels feature a gate, four-band parametric EQ (with gain, frequency sweep, and bandwidth adjustments), and compressor. They also include a digital delay to compensate for microphone placement and digital converter delays when monitoring external analog signals. The remaining eight channels offer the same processing capabilities with the exception of dynamics. Any of these 32 channels can source from any of the physical inputs, including TDIF, analog inputs one through 16, the ADAT optical input, or an installed option card. The DM-24 is also capable of operating in a monitor mode where all 16 analog inputs may be used for recording, while 24 tracks of tape return may be monitored. This "pseudo-inline" mode is accomplished by splitting the channels into two groups. Inputs retain the fader, EQ, auxes 3–6, and dynamics functions; tape returns use the aux 1 and aux 2 busses to create a monitor mix.

In addition to the aforementioned TDIF and ADAT inputs, the DM-24 has sixteen analog inputs, each with XLR mic and 1/4-inch line level inputs, trim control, and 1/4-inch TRS insert jack. The analog master section of the DM-24 includes stereo XLR left/right master output jacks with 1/4-inch TRS inserts. Additional analog outputs include balanced 1/4-inch control room monitor outputs, unbalanced RCA studio monitor outputs, four assignable sends, and two headphone jacks. Four of the DM-24's six aux sends may be assigned to any of the four analog aux output jacks, while two of the aux sends may be assigned to internal DSP effect engines.

To help navigate the DM-24's front panel, there's an LCD screen and data wheel as well as four rotary "encoders" with LED indicators. The function of the encoders varies depending on what data page is being displayed in the LCD.

Rear-panel interfacing includes MIDI in, out, and thru jacks, plus a timecode input. Combined with the DM-24's internal automation, the timecode and MIDI in jacks allow the DM-24 to sync to incoming SMPTE or MIDI Timecode for automated mixing. Up to eight mixes may be stored in the desk. When a new mix is opened, the DM-24 automatically switches to automation "record" mode, so that any changes you make to the mix will be saved. All automation data may be offloaded via MIDI.

Other features of the DM-24 include word clock I/O, remote control and track arming of TASCAM DTRS machines via the onboard transport controls, RS-422 port, and a footswitch input for remote punch-in/punch-out capability. A cascade mode allows two DM-24's to be linked together and operate as a single console. ■

WHAT IS IT? A compact 24-channel digital mixer with 24-bit/96 kHz capability.

WHO NEEDS IT? Anyone interested in recording with high bit- and sample-rates.

WHY IS IT A BIG DEAL? The DM-24 brings a 24-bit/96 kHz hardware mixer into the project recording market.

SHIPPING: Spring 2001

SUGGESTED RETAIL PRICE: $2,999

CONTACT: For more information, contact TASCAM at 323-726-0303 or visit **www.tascam.com**. Circle *EQ* free lit. #114.

Packed

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David Mellor – Audio Media(UK) October '99

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Note: The graphic above is an early screenshot that is subject to change in the final version of the software.

By Steve La Cerra

Native Instruments Spektral *Delay*

Native Instruments recently announced the Spektral Series, an interesting and unique line of audio processing software. The Spektral Series differs from the vast majority of audio software in that it uses real-time FFT (Fast Fourier Transform) analysis in processing the signal. The first application in the Spektral Series is Spektral *Delay*.

As the name implies, Spektral *Delay* operates on the spectral representation of an audio signal. Through the process of FFT analysis, Spektral *Delay* divides the incoming audio waveform into as many as 1,024 distinct frequency bands. These frequency bands can then be processed individually; left and right audio channels may also be processed independently.

After Spektral *Delay* has created the frequency bands, these bands can be separately manipulated through use of several graphic editors. The first stage of signal processing is an input attenuation matrix. An Input-Amplitude-Matrix graphic editor allows a user to change the level of each frequency band over a range of more than 50 dB. This entire graph can be shifted on the vertical or horizontal axes via modulation, resulting in unusual filter sweeps across the frequency or amplitude ranges. Attenuating certain frequency ranges at the input means that the delay effect to those bands will be minimized, and the effect will be more apparent in other frequency regions.

Next, the spectrum passes through a Delay Matrix editor where each frequency band can be delayed individually for up to 12 seconds. You could, for example, delay the high-frequency audio bands for 300 milliseconds while delaying the low-frequency bands for only 100 milliseconds! The Feedback Matrix editor provides adjustment of the regeneration function with specific percentages of feedback for each frequency band. Through varying combinations of input filtering, delay times, and feedback for each audio band, it's possible to not only create interesting delay effects, but also unusual ambient environments that would be extremely time-consuming (if not impossible) to execute with a series of conventional delays. All of the graphic editors utilize tools that will already be familiar to many engineers, such as the pencil and hand tools. Real-time Spektrogram displays allow you to view the audio material at both the input and output stages of the effect.

Spektral *Delay* also supplies an LFO (Low-Frequency Oscillator) that may be assigned to any of the Edit Matrix or Input Modulation parameters. LFO shape can be selected from among six different waveforms, including sine, square, triangle, and sawtooth waves. Modulation may be set independently for the left and right audio channels. The LFO may be controlled via MIDI and can sync to an external clock source.

Spektral *Delay* can be used as a VST plug-in (insert or effect send) for PC or Mac, or as a standalone application supporting SoundManager, ASIO, DirectSound, MME, and DirectX drivers. An easy-to-use software development kit provides programmers with access to the spectrum for real-time manipulation, and input modulation plug-ins may be created using a third-party Advanced Programmer Interface. For end users, this means that Spektral *Delay* is open to development of plug-ins by other manufacturers. Native Instruments is also planning plug-in versions for the Digidesign RTAS and MOTU MAS formats. ■

WHAT IS IT? An FFT-based audio delay application.
WHO NEEDS IT? Anyone who wants something more than the "traditional" digital delay offers.
WHY IS IT A BIG DEAL? Spektral *Delay* allows you to set independent delay times for various frequency spectra.
SHIPPING: December 2000
SUGGESTED RETAIL PRICE: $199

CONTACT: Native Instruments products are distributed in the U.S. and Canada by Steinberg North America. For more information, contact Steinberg at 818-678-5100, or visit **www.native-instruments.com**. Circle *EQ* free lit. #115.

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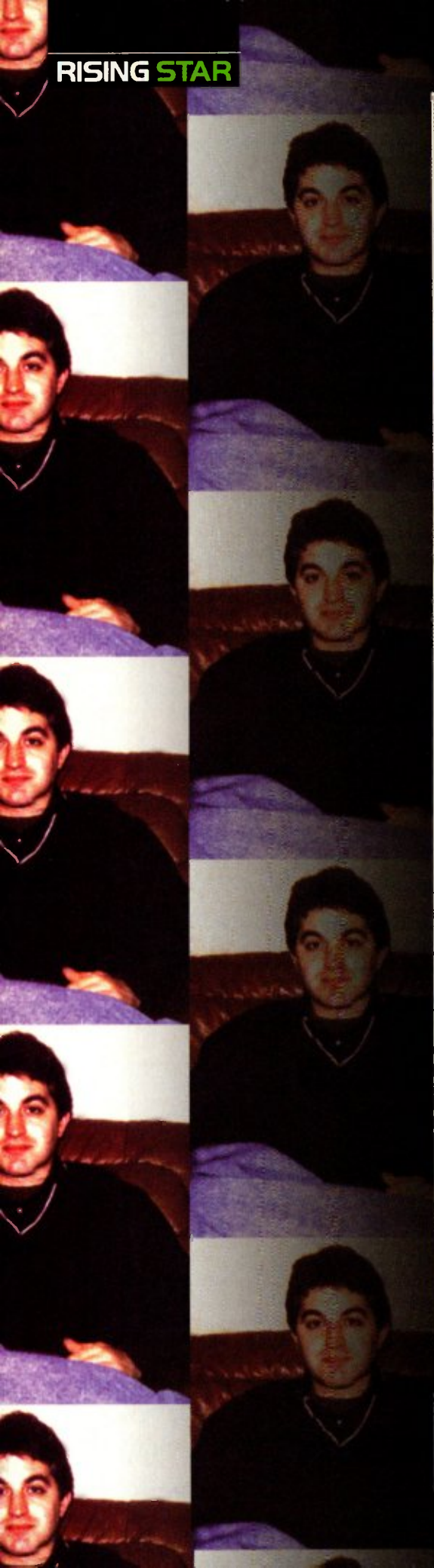

ANDEW FELLUS

EQ poses ten questions to an up-and-coming engineer

It's late on a Monday afternoon and two of the three rooms at New York's Right Track Recording are hopping, both occupied mixing the tracks of Elton John's recent Madison Square Garden performance — amazing when you consider that Elton left the stage not even 48 hours earlier. Hunched over the Neve Capricorn, ever-present cigar in hand, is legendary engineer Frank Filipetti (James Taylor, Carly Simon) and ably assisting him is this month's Rising Star, Andrew Felluss.

Felluss has been working at Right Track since his graduation from the Sound Engineering program at Columbia College in Chicago in 1997. After a year of paying his dues as a runner, he was promoted to assistant engineer and now puts in up to 100 hours per week, working on a variety of projects. "Right Track is great," he says, "because we get a full spectrum of work, from one-day overdubs to long-term album projects. I love not knowing what I'll be doing for whom from one day to the next."

EQ: How did you land your current gig?

Andrew Fellus: I faxed a well-written resume with a respectful cover letter...I think.

How did you get started in engineering?

I realized how much I loved the sound of music, as opposed to just the music itself. However, this doesn't imply that I enjoy listening to bad music recorded really well.

Where do you see yourself in five years time?

I'll probably stay in Manhattan. What I'll be doing then, I can't say, as careers in this business seem to develop unpredictably.

What are your ultimate career goals?

Ultimately, I'd like to be involved in music as an engineer/producer/arranger/writer — and also get paid for it.

Who are your heroes in engineering and record production?

I have an immense respect for the many great engineers and producers I have been lucky enough to work with — people like Frank Filipetti and Phil Ramone — who I have learned so much from.

What's your favorite current recording, and why?

To Bonnie from Delaney by Bonnie and Delaney. I love the feeling on that album, the way the players are so attentive to the music they're playing, as if nothing else mattered for them at the time. It sounds pretty good, too.

If you were stranded on a desert island and could only take one piece of studio gear with you, what would it be?

Well, the only thing that could survive the sand would probably be a Shure SM57 — or maybe a Lexicon PCM-42!

What's the coolest recording technique you've discovered?

How to have the tape rolling on time. It's a beautiful thing when the artist plops down to play and everything is set and sounds good.

What's the best piece of advice anyone ever gave you?

Creativity should not defined or limited by technology.

What's the best advice you can give our readers?

Good work speaks for itself.

WEBLINK

E-mail Andrew at afellus@accesshub.net.

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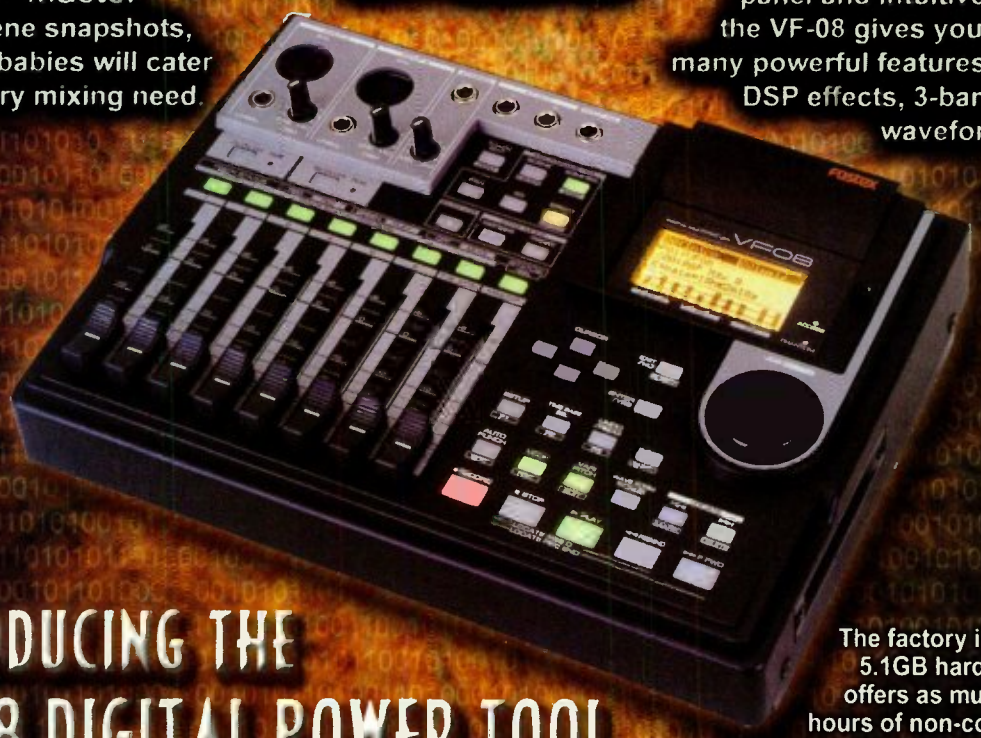

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SLANG

WEBLINK

Visit the Slang Music Studio Web site at www.slangmusicgroup.com.

Slang

Street talking in downtown Chicago

By Steve La Cerra

STUDIO NAME: Slang
LOCATION: Chicago, IL
KEY CREW: Vince Lawrence (producer and owner), Gerald Lott (director of operations); Kris Anderson, Eric Sagarin, and Judson Snell (engineers/programmers)
CREDITS: Sisqo, Whitney Houston, R. Kelly, KMFDM, Kelly Price, The Crystal Method, Donna Summer, 112, DJ Accucrack, Lina, Joe, Absolute
MIXING CONSOLE: AMEK Big 28 [2], with Supertrue Automation
MONITORS: KRK E8, Tannoy System 8, Genelec 1034B, 1031; Event 20/20, Urei 801
AMPLIFIERS: Hafler P3000 *Trans*nova, Hot House S400, Alesis RA-100, Rane HC6 headphone amp
RECORDERS: Otari MX80 two-inch 24-track, DTR-85 DAT; Alesis ADAT XT20 [3], Panasonic SV3700 DAT, TASCAM CD RW-5000 CD Recorder, 112 Cassette Deck
OUTBOARD: Aphex Expressor [7], Dominator II, Stereo Compellor [3]; API 550B Parametric EQ [10], Drawmer DS-201 Dual Gates [8], DS-404 Quad Gates [5], M500 Dynamic Processors [2]; Roland SN 550, TC Electronic Finalizer Plus
EFFECTS: Lexicon LXP15, Eventide H3500 [2], H3000se; Roland SDE1000, Antares ATR 1 (Autotune)
MICS: Electro-Voice RE2000 [2], RE20; Neumann U 47
MIC PREAMPS: Neve 9098, Grace 801 eight-channel mic pre
SAMPLERS/KEYBOARDS/MIDI: Akai S5000, MPC3000 [2]; Access Virus, Kawai K5M, Korg TR Rack, Kurzweil 1000-PX, Novation Supernova, Oberheim Matrix 1000, Matrix 6; Quasimidi Sirius, Studio Electronics SE-1 [2], Waldorf Microwave, Pulse; Roland TR-808, JV-2080 [2], M-DC1, JV-1080, MKS-50 [2], D-110, U-220, JV-880, JP-8080, MC-505, VP-9000; Emu Orbit, Morpheus, Vintage Keys, Planet Phatt
DAW EQUIPMENT: Digidesign Pro Tools Mix Plus, DSP Farm Cards [3], 888/24 I/O [3]; Sonic Solutions Sonic Studio HD
VIDEO: Sony VO-5850 recorder, 32-inch monitors [2]; Time Line Microlynx Synchronizer
INSTRUMENTS: Drum Workshop kit with 20x18, 10x8, 14x12 drums; Paiste Signature Series cymbals
INSTRUMENT AMPLIFIERS: Fender Twin, SWR 750, Goliath 2
SOFTWARE: MOTU Digital Performer 2.7, Emagic Logic Audio Platinum 4.5, Cubase VST v5.0, Opcode StudioVision 3.5, MasterList 2.2, Sonic Studio 3.5. Plug-ins from Waves, Bomb Factory, Focusrite, Antares, Drawmer, Access, Serato, Metric Halo, Line 6, TC Electronic, Digidesign, Arboretum, Aphex, Kind of Loud Technologies, McDSP
EQUIPMENT NOTES: Lawrence's favorite elements of Slang "are the large studio monitors, which allow me to recreate the levels and feel of a nightclub atmosphere while still maintaining a near-flat perspective when mixing or mastering."
PRODUCTION NOTES: Originally Lawrence (a pioneer in "house" music) was content to house his equipment in the basement of a loft building on Chicago's Near-West Side. At that time (working in a space without a separate control room), he found his way into doing commercial music for ad agencies. "I found I was spending a considerable amount of time and money 'finishing' projects at larger studios," he explains, "so I figured it made more sense to have one! Coincidentally, Chicago Trax Recording was moving into a new location and had space available for long-term rental. R. Kelly took one side and we took the other."

Vince immediately began building his dream

▶ continued on page 126

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CIRCLE 78 ON FREE INFO CARD

Sound Spa Recording

By Steve La Cerra

Take a break at New Jersey's Sound Spa

STUDIO NAME: Sound Spa Recording
LOCATION: Edison, NJ
KEY CREW: Steve DeAcutis (owner and engineer)
CREDITS: Corey Glover (Living Colour), Cyndi Lauper, Tony Camillo, Joe Lynn Turner, Terry Bozzio, Laura Branigan, Kenwood Dennard, Anthony Jackson, Max Norman, and The Stevie D Band
MIXING CONSOLE: Alesis X2 with Audio Upgrades modifications
MONITORS: JBL LSR28P (powered full-range) [2] with LSR12 (powered subwoofers) [2]; Tannoy PBM8, Urei 811c; Fostex T-20, T40 headphones ("they never blow up")
AMPS: Hafler Pro 5000, BGW Model 1000, Crown DC 75, ADA B200s
RECORDERS: MCI JH16-24 two-inch 24-track, JH-110 two-track; Studer A-80 VU 1/2-inch two-track, Revox PR-99, A-77 analog two-track, B-77 analog two-track; Sony PCM2600 DAT
OUTBOARD: Cranesong HEDD 24-bit A/D-D/A, Alan Smart C-2 SSL-type compressor, JoeMeek SC2, Neve 83046 compressor, Empirical Labs EL-8 Distressor [2], Audio Technologies Tubelink [2], mono compressor; EAR 660, dbx 163 with Audio Upgrades modifications [4], 1531x 31-band EQ, Subharmonic Synthesizer, 463x gate [2]; Ashly SC-50 compressor, SC-40 EQ; Behringer Composer, PEQ305 [2]; DOD R-825 (compressor), Valley Audio Micro Comps [3], Manley Massive Passive, DigiTech MEQ-14 MIDI EQ [2], NEI 34 parametric EQ, Soundcraft TG3044-R, Aphex Aural Exciter, 622 gate; Korg KEC-42, Symetrix 562 gate
EFFECTS: Lexicon 224XL, PCM60, PCM90; Roland R880, SRV2000, DEP5, SDE1000; Eventide H3000D/SE, ART EXT, 01A; Alesis Quadraverb, MXR DTL, Flanger/Doubler ("blueface") [2]; DigiTech RDS1900 delay
MICS: Neumann U 47, U 87, KM 54; Sony C-800G, Soundelux U95, Røde Tube Classic, AKG C451, C5900 [2], D112, D3400 [2]; Shure SM58 [2], SM57 [4], Beta 57 [2], Beta 56 [2], Green Bullet, Beta 52, SM98 [3], SM7, KSM32 [2]; Audio-Technica AT4033, AT4060; beyerdynamic M201, Sennheiser MD421, Uncle Alberts Tube DI
MIC PREAMPS: Neve 33114 [3], Amek 9098 [2], Audio Technologies TMA2 stereo tube mic pre [2], Sytek MP4 [4 channels; 2 with Burr Brown IC option]
SAMPLERS/KEYBOARDS/MIDI MODULES: Oberheim Matrix 1000 [2], Korg X5DR, Emu Proteus, MOTU MTP AV, Simmons MTM
COMPUTERS: Pentium III/500 MHz with 384 MB RAM and 30 GB hard drive
SOUND CARD: ADB Multiwave Pro 24
STUDIO NOTES: According to Steve DeAcutis, "One of the appealing factors of Sound Spa is the drum room. Even though the actual drum room is only about 200 square feet, I place room mics in the adjoining room and, by the time the drum sounds hit the wall and make their way into the adjoining room, you get a natural delay of about 50 milliseconds to the room mics — which when added to the close mics really opens up the kit. It was actually by accident that I discovered this. While recording some new material for my band I noticed the sound of the drums making their way to the vocal mic in the next room. I remember saying to myself, 'man the drums sound huge today,' later discovering the Bonham-ness was coming from the vocal mic. A happy accident to say the least."
EQUIPMENT NOTES: DeAcutis continues, "It is really nice to be able to get audio into and out of my computer using the Cranesong HEDD A/D-D/A, thus marrying the world of two-inch analog tape with the hard-disk editing world. Locking the computer to the two-inch machine enables endless editing, limited only by your imagination." ■

WEBLINK

You can visit the Sound Spa Web site at www.soundspa.net or go to mp3.com to hear The Stevie D Band and other Sound Spa artists.

RCA PB-144

PHOTO BY WES BENDER

RCA PB-144 Photophone Velocity Mic

MICROPHONE NAME: RCA PB-144 Photophone Velocity Microphone (MI-3015-B)
FROM THE COLLECTION OF: Bob Paquette, The Microphone Museum, Milwaukee, WI
YEAR OF MANUFACTURE: Circa mid-1930s
TYPE OF MIC: Ribbon
FREQUENCY RANGE: 30 Hz to 15,000 Hz
DIRECTIONAL CHARACTERISTICS: Bidirectional
EFFECTIVE OUTPUT LEVEL: 400 microvolts across a 250-Ohm load, for a sound pressure of 10 dynes per square centimeter
OUTPUT IMPEDANCE: 200 Ohms
EXTERIOR FINISH: Black nickel
DIMENSIONS: 8.25 long x 4 .6875 wide x 3.25 deep (inches)
MOUNTING: Suspension fitting or MI-3022 mic stand adapter
MIC NOTES: In late 1931 and early 1932, RCA produced the Type 44A microphone, which was their first permanent-magnet ribbon mic. The Type PB-144 Photophone Velocity Microphone is a slightly modified version of the 44A that was introduced shortly after the 44A. Intended primarily for situations where television or film cameras were involved, the PB-144 was generally leased (not sold) to Hollywood film studios. It became widely used on movie sets where it was undesirable for the microphone to appear in the picture.

Although this particular PB-144 is shown with the MI-3022 stand adapter attached, a suspension fitting (RCA catalog number UP-4212) was also available. The suspension adapter allowed the microphone to be hung upside-down from a cable over a film set — where it would be out of camera's view. A careful look at each side of the PB-144 reveals a small metal fitting that RCA referred to in one of their catalogs as a "staycord eyelet." These eyelets could also be used to suspend the mic and are visible just above the knurled pivot nuts in the photo.

The PB-144 was available in two different finishes: a bronze version (RCA catalog number MI-3015-A) and the black nickel version shown here (catalog number MI-3015-B). As with most microphones in the '44 series, the PB-144 exhibits a boost in the low frequencies when placed less than four feet from the sound source. A properly tuned PB-144 yields a virtually flat frequency response from 20 Hz all the way out to 20,000 Hz.

Technical information furnished through the courtesy of Arthur Garcia and Bob Paquette.

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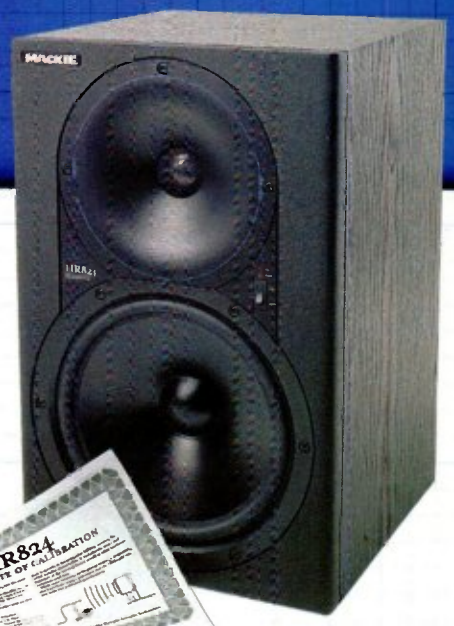

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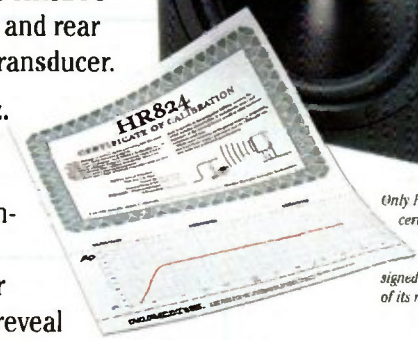

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CIRCLE 35 ON FREE INFO CARD

Making *Righteous Love* with Joan Osborne

Mitchell Froom

SUSPECT:	Mitchell Froom
OCCUPATION:	Composer, producer, arranger, keyboardist.
ANCESTRY:	Romanian/Russian Jewish.
RESIDENCE:	Los Angeles.
DIET:	No meat.
PECULIAR HABITS:	Refuses to eat the last hors d'oeuvre.
NOTES:	The versatile Froom has produced Los Lobos, Crowded House, Elvis Costello, Richard Thompson, Suzanne Vega, Ron Sexsmith, Bonnie Raitt, and Sheryl Crow, and he has just co-produced the new Joan Osborne album, *Righteous Love,* on Interscope Records. Drums: Pete Thomas; Bass: Davey Faragher; Guitar: Val McCallum; Sax: Steve Berlin; Keyboards: Froom; plus assorted guests.
PHOTO LOCATION:	Studio A, Sound Factory, where the album was recorded.
CONSOLE:	Custom API.

Mr. Bonzai: How did you get involved with this album?

Mitchell Froom: We talked about working together when she [Joan Osborne] was starting the process — we kept in touch and finally the time opened up for both of us. I was living in New York at the time, and so was she. We decided we would try it out informally. We worked for ten days in a preproduction phase, listening to all the tapes that she had, and then decided to work for a few weeks in Los Angeles and see if everyone stayed enthusiastic. This is the way I prefer to work because it puts less pressure on the situation — it puts the focus more on the music.

You mentioned the preproduction — is that when you chose the songs for the album?

Well, before the preproduction stage, I had her send me all the tapes she had made. I liked quite a lot of the songs and the ideas, but, for whatever reason, they weren't fully realized. I had some time to come up with concepts on how to record certain songs. In preproduction, we talked that through.

You recorded here in L.A. at the Sound Factory — who are the musicians?

Pete Thomas is the drummer, who was in the original Attractions, with Elvis Costello. Pete's probably worked on 16 or 17 records with me, on Los Lobos's *Colossal Head* and *Kiko,* and many others. The three guys — Pete, Davey Faragher on bass, Val McCallum on guitar — have worked together in different ways with different people. They've all worked with Sheryl Crow and now are working with Vonda Shepard on stage and on the TV show [*Ally McBeal*]. Pete always tries to put together a group wherever he lives. Because they're all living in L.A., they decided to put together a group. They perform as a trio, and call themselves Jack Sh*t. They're fantastic — somebody ought to sign them.

Incredibly tight sound....

They have played together so much. On this record, for the first time, I felt that the sound was much bigger than the sound of the individual musicians. Between Davey and Pete, particularly, they developed their own science of how to play together. They really know how to make a noise that sounds like a band, a very attractive sound — it doesn't sound like studio musicians.

How did the basic tracking proceed?

We worked very quickly. On quite a few songs we worked with loops, but basically, all the time, everyone was playing the song and Joan was singing live.

Minimal overdubs?

Sometimes more, sometimes less, but we tried to figure out how to make the sound pretty much on the spot, whether we were playing along with a loop or not. We wanted to have the feeling that when we came in to listen, it would sound like a record.

How long did the basic tracking take?

We would record one song at a time and then do overdubs. Each one took a few days.

There seems to be a Middle Eastern

MITCHELL FROOM PHOTOS BY MR. BONZAI

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WHERE THE FUTURE'S STILL WHAT IT USED TO BE

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influence on a few songs...

Joan's a big fan of Indian and Pakistani music, and Nusrat Fateh Ali Khan. She studied with him and had a few songs that were very much influenced by this type of music. But the decisions made in the context of making the record were to only present those things as musical hybrids, not her just singing in that way. It was used as an effect, as in the blues song "Hurricane." She sings in an Indian way — I liked it because it shows a link between American blues and Indian music. By putting them together, you understand that there is a similar soul at work. The other one was "If I Was Your Man." It all came out of her love for that singing, and having studied it.

Your engineer was John Paterno, a protégé of Tchad Blake and you?

He worked with us for a long time. On the *Colossal Head* record, John did quite a bit of the first engineering. Tchad cut the tracks, but John was progressively doing more overdubs. He was incredibly overqualified at that time — a second engineer way beyond that point. He's a great engineer.

WEBLINK

Questions or comments for Mr. Bonzai? Email him at mrbonzai@mrbonzai.com.

The album was mixed by Bob Clearmountain. What do you think Bob brought to the party?

Obviously I work with Tchad most of the time, but I've worked with Bob four or five times — he mixed a few Crowded House records, and also the recent Corrs record that I worked on. Technically, Bob may be the best mixer there is. I was really excited

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about what we were doing with Joan, so before anything I brought Bob the rough mixes, which I thought were pretty great. I was trying to get him to conceptualize — he's a guy who mixes all the time — so I wanted to see if he could come up with something that might be particular for this record. He did it — a bit rawer than he normally mixes, and it's still very much "in your face" and aggressive, and it's very well put together. Beautifully mixed. "Angel Face" is an especially beautiful mix.

Powerful album. Seems like you have some instant classics, as if you've heard the song before — but you know it's the first time.

You mean like "Righteous Love"?

Right. My editor here at *EQ* thought the album had a certain "roots rock" feel....

Well, the basic concept was to make a modern record, but one that was suitable for Joan's voice and her music. Other people do this, like Macy Gray and Sheryl Crow — they make very modern records that remind you in some way of what you loved about older records, without sounding retro. That was the agenda for us. When we were originally talking with the band, we wanted it to be a very outgoing record.

The thing about Joan is that the band can play with tremendous energy and not overpower her in any way because she's so dynamic. That's a freedom for musicians. On a lot of the records I do, the singer isn't that commanding. They are powerful in their own way, but you have to hold back in order for the singer to be able to dominate the music.

I talked to the band like this: "We're the young Rolling Stones, we're the young Beatles. We want people to really like us. We're not setting out to be too clever, or too arty, but we love what we're doing and we want other people to like it, too." Which is quite different from calculating a "hit." I was mainly talking about enthusiasm and the attitude.

Very organic.

And very outgoing — interested in pulling people in. I didn't want them to say, "Hmm, that's a very interesting record," and never put it on again. This is more of a party record, really.

Let's take a look at the single, "Love Is Alive," originally recorded by Gary Wright of "Dreamweaver" fame.

The way that it happened was Jack Sh*t was playing Tuesday nights at The Mint, and, after cutting the first tracks, Joan just loved the band so she started going down and sitting in with them. The first night she sang "Just My Imagination," then a Hank Williams song, whatever, and that led to an open environment in the studio. They'd just be goofing around with songs. We had talked about doing a cover song, even though it isn't normally my favorite thing to do. You shouldn't do it unless you can reinvent the song in some way. Otherwise, it's a bit gratuitous.

Was the original song a big hit?

I think it was pretty big, following

▶ continued on page 126

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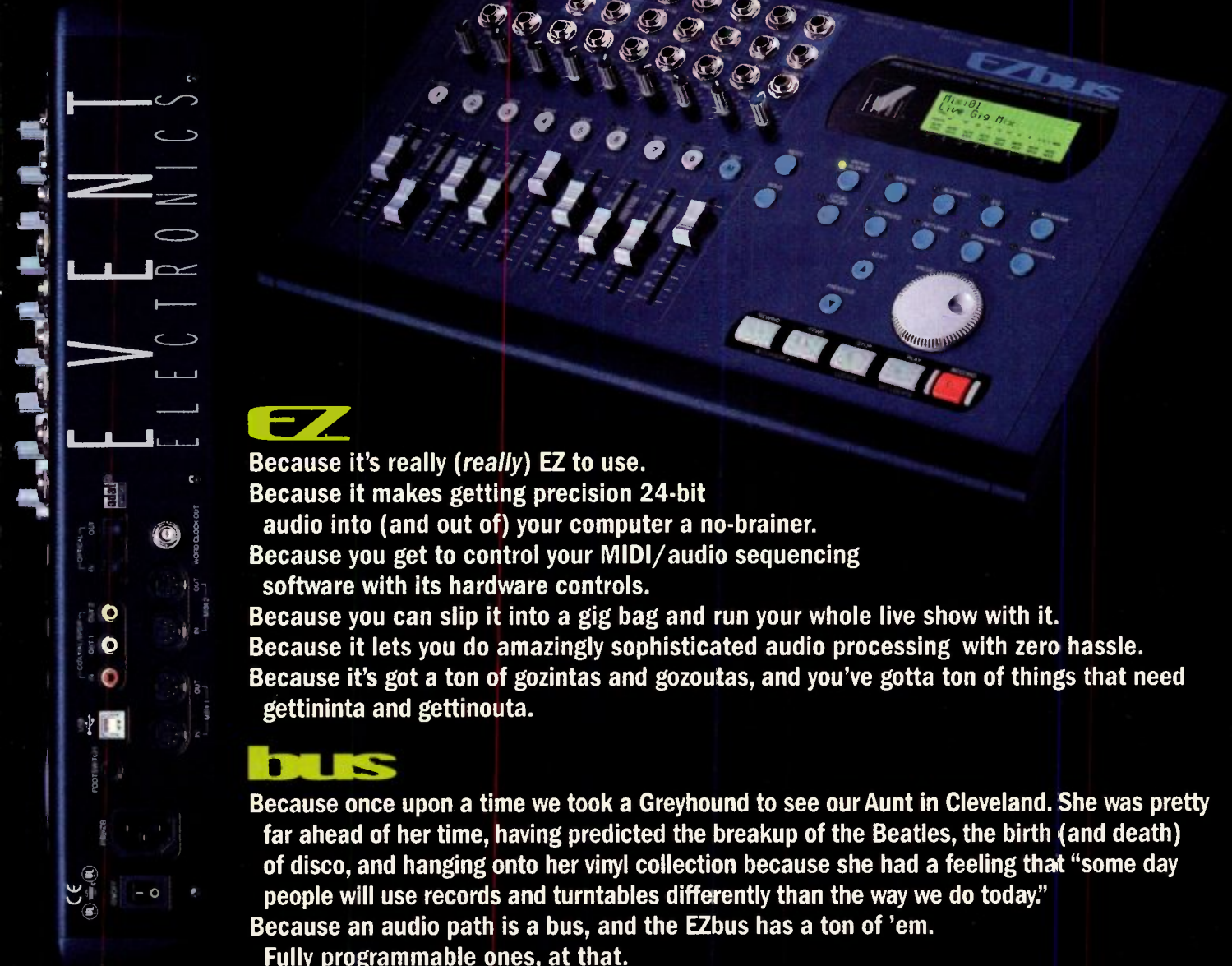

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CIRCLE 18 ON FREE INFO CARD

Getting great vocal takes and more

Stephen Hague

By Howard Massey

With one foot in England and the other in his native U.S., Stephen Hague has a unique perspective on the art of making records. Keyboardist and cofounder (with Jules Shear) of the short-lived, late-'80s cult band Jules And The Polar Bears, Hague soon forged a career as one of the most prolific alternative music producers. In addition to crafting hits for Erasure and Orchestral Manoeuvres In The Dark, Hague collaborated with the Sex Pistols' infamous manager Malcolm McLaren and equally infamous lead singer Johnny Rotten on several of his post-Pistols Public Image Limited offerings. Work with other new wave/next wave artists followed, including Jane Wiedlin, Pere Ubu, New Order, Siouxsie And The Banshees, and, more recently, with English chart-toppers Blur, Manic Street Preachers, and Marc Almond. In between, he's even found time for a few mainstream projects, including a string of albums with the teen-idol Pet Shop Boys, as well as Robbie Robertson's 1991 offering, Storyville.

We spoke with Hague shortly before he was to leave his project studio in Woodstock, New York and begin yet another six-month journey in England. Despite what had to have been a hectic time, he calmly shared his views about the art of making hit records on both sides of the Atlantic.

EQ: You came into production from a musical background as opposed to an engineering background. How do you think that changes your approach to making records?

Stephen Hague: I've been on sessions as a player when the producer was primarily an engineer, and I always found the lines of communication to be easily confused. Often you wouldn't know exactly what the guy was getting at — he'd be after more of a sensation than dealing with the specifics of musical arrangements or things like bar structure. Whereas when you're on a session with a producer that comes from a musical background, you're talking the same language right from the word go. As a producer, I've worked with several excellent engineers who've struggled with things like, "Can you take it from bar three of the chorus?" and things like that. I always feel for them because they have to feel a bit outside the thing. And then I've worked with other engineers who had quite a straight-up musical background — one in particular was David Jacob; he was able to relate to string players on a level that I couldn't.

I think that a producer who has a background as a musician has a sympathetic view of the players and the comfort levels of the session, and also has a better grasp on the line of communications. I find I tend to be more sensitive musically overall. I'm not saying that they can't be great producers, but when you look at a lot of engineer/producers, they often end up coproducing with a quite strong-willed artist. Someone like that can be successful, but generally only if they team up with someone who provides a strong musical presence in the studio.

One common thread that seems to run through a lot of your records is that the artist always sounds very relaxed; they always sound like they're enjoying being there and as a result they give a great performance. What kind of techniques have you come up with through the years to elicit the best performance out of artists?

Well, there's always a vibe in the studio, although I'm not one of those kind of guys who does a lot of scene-setting. One really important thing in the studio environment is that everything works, because there's nothing worse than starting to get someplace and having a piece of equipment go down. But beyond that, just try and keep it relaxed and not make it too precious or pressurized. There are situations where the schedule has you under the gun, and things have a different dynamic.

But in general, particularly with vocalists, I always stress the fact that the singing can take place any time they want, for the most part, and at all different points across the running of the project. I've always found it dangerous to set

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CIRCLE 45 ON FREE INFO CARD

aside a week where you have to do all the backing vocals or all the vocals, because that's when the vocalists tend to get sick. [*Laughs.*] I'll also do a lot of takes with the vocalist so as not make them feel like, if they blow something, then they can't go on. I don't like that process where you keep singing the first verse over and over again and you keep dropping in and you grab a line here and there. I like to do linear takes, and as many as they've got in them. People usually peak after a few takes, and then you might do a couple more where you might catch a few things. Afterward, I'll sit down and I'll do a comp of the vocals to one track and then listen to it with the artist. At that point, we may find that we got some of it but not all of it, so I'll often do another round of vocals, but usually at a later date. It's all designed to make it so they are never really on the spot. That's actually the opposite way that a lot of great records were made in the '60s, when they would go in for three hours and come out with something that we still listen to today. But it's just a way of doing vocals that works for me.

What do you listen for in terms of a great vocal take? When do you know it's nailed?

That's one of those quite abstract things, like so many times during this process. It's very, very subjective and very much a matter of taste. Sometimes I'll hear records where I will just be sure that the singer could have delivered something more, but they might be very successful records. So it's sort of organic on one level, where what's right for the track is not necessarily the most blazing, over-the-top vocal performance. It's not always the one where you're singing your guts out all the time, which I think can be a problem for a few artists out there right now. It's a very subjective thing and it has to do with the nature of the song and the session and the singer.

Some of the work I did in the mid-'80s was with some English acts where the singers weren't really singers *per se.* There was a really charming English thing — you know, that kind of "pretty boy who can't quite sing" thing — and I would often work really hard to get those sounding confident and upfront from somebody who's not actually confident or upfront. That's a case where you do lots of vocal takes and not worry about pitch and all that stuff, because I could alter the pitch later on in certain lines when the moment was there but the pitch wasn't. Having gone through that process with me — after I see them through it — then their confidence level can go up because they can see, "Well, I can sound good." That makes a difference to the session, particularly if you're doing an album. I always make a point with somebody who's not a great singer to try and get a couple of really good vocals together early on, whatever it takes, just so they have those under their belt and they feel better about themselves.

I don't like to over-analyze things as we're working. I'll say really simple things, like, "I think you should hit the chorus a little harder," or "I don't think you're getting the most out of that line." I'll make really simple suggestions — not particularly artistic suggestions as much as practical nuts and bolts kinds of things like louder, softer. Just to get somebody in the right ballpark and then often, when they're settled into the right basic way of singing it, that's when the multiple takes will start to pay off. Then you can always choose the best part.

> "WHAT'S RIGHT FOR THE TRACK IS NOT NECESSARILY THE MOST BLAZING, OVER-THE-TOP VOCAL PERFORMANCE."

Do you go out in the studio and listen to the voice before recording it? Do you audition different mics, or do you leave that up to the engineer?

I certainly approve the mic selection as we go along. Of course, some singers sound better on some mics than others. With Chrissie Hynde, I actually used a Shure Beta 88, which is a handheld mic, a stagey sort of thing, but there was something about it. It wasn't very detailed, but she has so much character in her voice that I didn't miss that part of it at all. Other people really only come to life on a really expensive Telefunken. Often with an album project that's just beginning, we'll set up five or six mics and just run through a couple of things while switching between them. You can usually tell pretty quickly. It's rare

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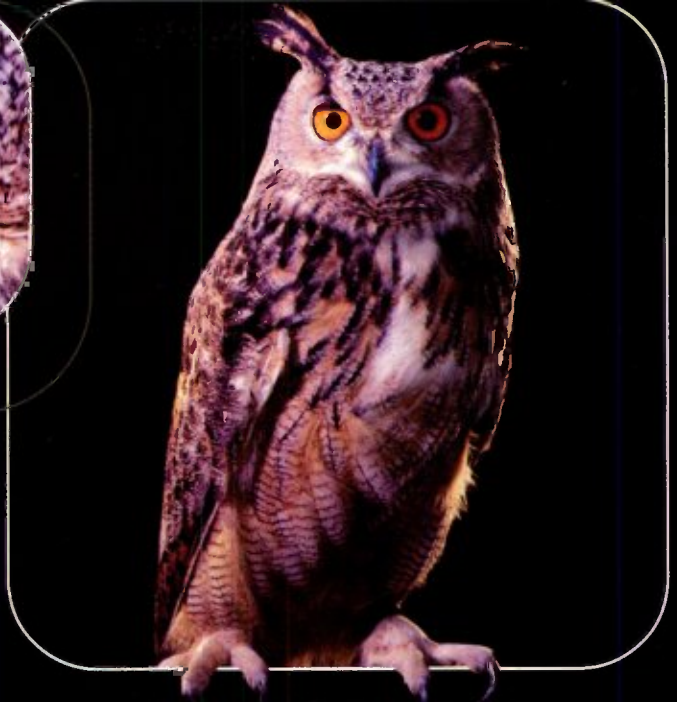

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that we'll be in the middle of doing vocal takes and I'll change the mic.

At times I've even used vocals or parts of vocals off low-quality demos, and you can almost always get things to match up if you really need to. I'm not downplaying the importance of mic selection, but, on another level, what they're putting out is the most important thing. As long as, technically, it's not getting in your way, like major "p's" popping or sibilance. With some singers, the sibilance thing can be a factor in certain mics that you'd want to avoid.

Do you record vocals with compression?

Very, very light compression. For the past couple of years, I've usually been recording vocals to a Focusrite Red as the preamp. I usually bypass the mixing desk for most things — with drums, of course, you can't really avoid it.

> "PEOPLE COULD NOT WAIT TO GET AWAY FROM ACETATE WHEN TAPE CAME ALONG, SO NOW I WONDER WHY EVERYONE'S STRUGGLING WITH LETTING GO OF ANALOG."

So I just use a little bit of compression. That's one thing to really watch out for, because if you record something with too much compression, you can never get rid of it. Whereas if you just record it in such a way that you are not peaking out in your recording format, then you can add as much as you want at any point later in the process. But you can never, never get rid of that thing when someone sounds like they've got their face pressed up against a plate of glass; it's not always a pretty sight. On some things, it's perfect, and some singers that I've worked with like to hear a lot of compression in their 'phones while they're singing, but that's something that you just set up on a sidechain so that, when they are getting their foldback, it can be heavily compressed or really bright. Whatever they like to hear that gets them to do it, that's what I always try to give them.

You're primarily a keyboard player. How do you approach recording keyboards?

I have my setup configured in such a way that, when I'm looking for sounds, I take a signal out of the master MIDI controller into all my gear and then start auditioning with everything playing. Sometimes that can speed things up: Instead of going through the libraries of one machine, I'll occasionally stumble on combinations that work. I'll often go through amps or effects pedals; I've got a [Line 6] Pod and I've been using that quite a lot for keyboards. I also use the Roland G3 Leslie simulator. It has an overdrive function that's not like any distortion box I've ever heard. I generally use it to emulate the sound of a rotary speaker being driven, but I often stop the rotary effect and just use the overdrive. I also went though a period where I was buying lots of those little tiny toy amps — the little plastic Marshalls and things like that — and overdriving those and putting a mic on them, sticking them in back of a room under a blanket. But everybody's doing all those kinds of tricks now — environmental things like putting an amp and a speaker out in a stairwell or in a chimney or something. If you're working in a project studio, you can try experiments like putting a Pignose in the shower and that sort of thing.

How do you typically record acoustic piano?

It depends on whether the piano is carrying the track. If that's the case, I'd often want to get the big professional well-miked sound. But I also like mono piano signals. I find the right place to place a relatively non-dynamic mic and then compress it. I also record quite a lot of not particularly good pianos; spinets and uprights and stuff like that. Instead of struggling to get them to sound like a Steinway with four mics and loads of great outboard, I'll just put up a mic in a sympathetic spot around it somewhere.

Also, sample-wise, piano is getting a lot better now. The [Nemesys] Gigasampler has a stunning piano sample, so all that's getting pretty sophisticated.

Are you doing a lot of digital recording?

I've been digital since 1984. I was one of the first guys over in England that was using the Sony 3324's — I had two of them, although I don't use them anymore. I never actually owned their 48-track, but I use

it a lot, particularly when I get to the mixing stage. The Sony's can get a little crunchy up top, but that just became part of what I liked about them after awhile. But for the past three years, I've been using [Otari] RADARs. They can get a little cranky sometimes, but I love them — they're really good machines. For a lot of guys moving over from analog, I would say the RADAR is the closest — it does a bit of that thing that analog does.

I think analog is one of the great overmystified formats. People couldn't wait to get away from acetate when tape came along, so now I wonder why everyone's struggling with letting go of analog. People know what it does to the signal — I use analog tape machines basically as a piece of outboard gear. I'll set up a Studer really, really hot to smash it onto the analog and then bring it back into digital.

Do you use tube gear the same way?

Not too much, no. When it comes to mix time, then lots of different outboard gear comes into play, but in the recording process, I like to use the Focusrite stuff — I've got their stereo mic preamps and compressors, plus some API things — and I think that sounds really good. I like to go through that kind of gear for the tape path.

Do you mix to analog?

I mix to DAT and half-inch analog at the same time, and, while I often use the half-inch, certain kinds of program material just sound better off the DAT.

So you'll multitrack digitally and then mix in the analog domain.

Yeah, that's the general rule, though I sometimes use the DAT mixes. I will use an analog console and analog outboard gear during the mix; I mix on an SSL, more or less exclusively.

Is the mix something you leave to your engineer, or are you very hands-on?

I'm very hands-on, though I don't like to set the mix up. There are two or three people that I like working with; we kind of know what to expect from each other. I really like someone to go in initially without me being there. Sometimes I'll go in when we're starting, just to say I have this or that in mind — so we don't have to backtrack later on — but as far as getting the bass drum sound together and establishing the spatial aspect, I know how to do it, but I just don't enjoy it. I think there is quite a valuable moment when I walk in and hear the mix the way they've set it up — it allows me to immediately spot the things that are not working for me. In the case of these guys who I work with regularly, there is almost always something that I wouldn't have heard quite like that — I wouldn't have set it up that way myself — but then I'll really like it. You can always put it back the way you would have had it, but you wouldn't get that moment where someone else contributed.

I do all my own [fader] riding, though. Once the mix is set up, I sit down for a few hours and I establish all the final relationships. It's like everything else in this process — it's just a matter of taste. I certainly leave it to the engineer as to whether something is going to actually hit the mix tape okay as far as levels and signal-to-noise ratio and all that sort of stuff. Sometimes I'll consult someone and say, "Is this going to be okay in the cut, compared to the hi-hat brightness?" and those kind of technical questions, but other than that it's really just a taste thing. I just try to make it sound like I was always hoping it would sound.

This interview is excerpted from Howard Massey's new book *Behind The Glass*, now available from Miller Freeman Books.

Recording an acoustic bass quartet requires careful planning

Recording BassRespanse

By Benjamin Tomassetti

BassRespanse is an acoustic bass quartet playing primarily improvisational music. With such unique instrumentation — four upright acoustic basses — and artistic focus, I welcomed the challenging prospect of recording this ensemble. My goal was to capture the improvisations in as clean a manner as possible, and to provide the musicians with a recording environment that promoted creativity.

Physical Setup

The group was recorded in an acoustically isolated, rectangular room with a parquet wood floor and some acoustic treatment on the walls and ceiling. The overall effect is a moderately dry space with ample early reflections. In one corner of the room is an iso booth, which changes the shape of the main recording space. Each performer was set up in a corner of the room in front of an acoustic baffle. These baffles were placed to "cut the corner" of the room in an attempt to eliminate bass build-up (the floor plan of the session is illustrated in fig. 1).

After watching each player warm up on their instrument, I listened for the sweet spot on each bass. It should be noted that these musicians regularly use "extended" techniques and employ auxiliary percussion instruments as musical implements when playing. With that in mind, I had to be very careful with mic placement in order to capture the most accurate sound of the instrument while simultaneously keeping the mic from being hit or in the way of the various techniques. The microphones used were two Neumann U 87's set to cardioid and two AKG C414 B/ULS's, also set to cardioid. None of the mics had their pads or bass roll-off filters engaged. The microphone preamps I used were those in a Soundtracs Solitaire console, and the session was tracked to a Studer A-80 Mk III analog multitrack running BASF 911 tape at 30 ips. No noise reduction was used.

Microphone Placement

Watching the four performers play and listening intently to each individual instrument was arguably the most crucial part of the entire process. My goal was to capture the desired sounds without the use of EQ; this was accomplished with mic selection and placement.

On the first bass, an AKG C414 was set up approximately 12 inches in front and 8 inches above the bridge of the instrument, tilted somewhat upward toward the fingerboard. When compared to the other three bassists, this player has a fairly bright tone, used more auxiliary percussion instruments, and also slapped the sides of his bass as hand percussion. This instrument was panned hard right in the final mix.

The second player was also recorded with a C414. The mic was placed a little closer to the bass and a bit higher above the bridge than with the first bass. It was pointed more or less straight at the instrument. This player was not as physically energetic in his movements, and didn't employ as wide an array of other percussion instruments. He did occasionally hang a small set of bells from one of the bass' tuning pegs. These bells were accurately recorded by the C414 and required no special treatment to be heard in the final mix. This instrument was panned midway between hard right and the center in the final mix.

A Neumann U 87 was used to record the third bass. The mic was placed approximately 10 inches in front and 10 inches above the bridge, and angled slightly toward the left shoulder of the instrument, providing a clean, woody sound. This performer used no auxiliary percussion instruments; the track was panned midway between center and hard left in the final mix.

The fourth instrument was also recorded with a Neumann U 87 positioned around 14 inches in front of the instrument, approximately eight inches above the bridge. The microphone was aimed slightly to the left side of the instrument, midway between the shoulder of the bass and the f-hole.

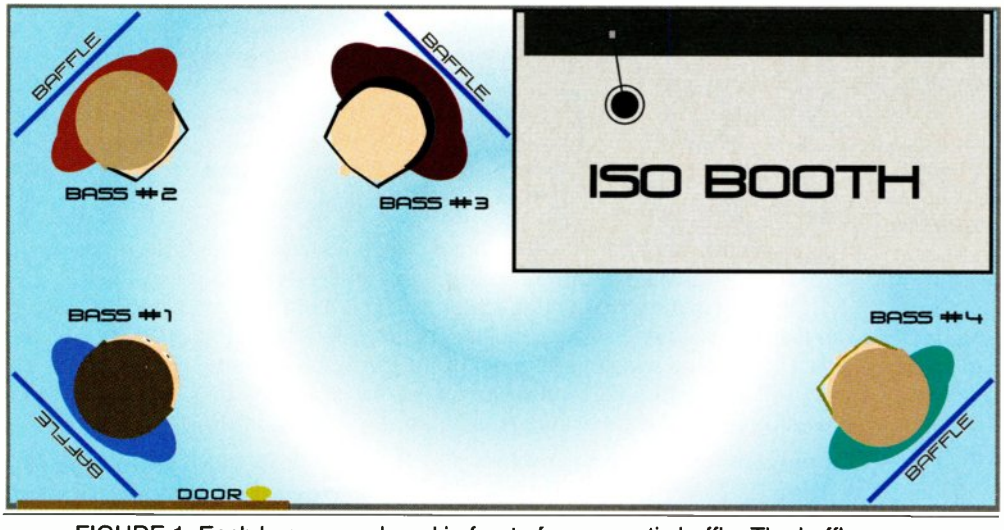

FIGURE 1: Each bass was placed in front of an acoustic baffle. The baffles were set up to reduce bass build-up in the corners of the room.

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This produced a woody sound with a fair amount of attack during pizzicato passages. This player was the most physically aggressive of the four musicians. He tended to move while he played, so it was a balancing act to capture the sound of the instrument, strive for acoustic isolation, and keep the microphone out of harm's way during the more "vigorous" musical moments. The fourth bass was panned hard left in the final mix.

One of the pieces included a guest vocalist improvising poetry with the other musicians. She was recorded through an Electro-Voice RE20 microphone placed approximately six inches in front of her. Since she was in the main room with the ensemble, it was important to have as natural a microphone as possible, with minimal proximity effect and adequate off-axis rejection. The RE20 proved to work quite well for the situation, and everyone was pleased with the vocal track.

Cue Mix and Performer Comfort

Typically, classically trained musicians are uncomfortable wearing headphones and listening to themselves through a headphone cue mix. Because the nature of their music is improvisational, it was vital that the players were as comfortable as possible. I chose not to use headphones — the musicians received all of their musical cues acoustically. For communication with the control room, a set of headphones was given to the fourth bass player, who then communicated to the ensemble. This worked well, and didn't hinder the musicians in any way.

The Mix

Neither punching nor comping were employed during these sessions, and there was very little digital editing in postproduction — the editing that did occur was primarily to remove the occasional "pregnant pause" from a take to create a more flowing musical texture. The last piece, which included two guest saxophone players, was edited in order to fit it onto the CD, but that was the only one with any substantial editing.

The mix was somewhat complicated, not because of outrageous processing and effects, but because the musical textures were complex, and shifted rapidly during the heat of the improvisations. Artistic decisions as to the foreground, middle ground, and background musical content had to be made many times throughout a single composition. And it should be noted that, because the musical textures were complex and active, multiple interpretations were valid. Fortunately, there were few instances of disagreement during the process, and on those occasions where there were differing viewpoints, a consensus was fairly easy to reach. Each of the individual bass tracks was judiciously compressed during the mix and a touch of reverb was applied. The overall affect is a clear, natural sound with ample separation between the instruments.

"THE MIX WAS SOMEWHAT COMPLICATED, NOT BECAUSE OF OUTRAGEOUS PROCESSING AND EFFECTS, BUT BECAUSE THE MUSICAL TEXTURES WERE COMPLEX, AND SHIFTED RAPIDLY DURING THE HEAT OF THE IMPROVISATIONS."

The Ends Justify the Means

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Dr. Benjamin Tomassetti is the director of the Audio Technology Program at American University in Washington, D.C. He may be reached via email at benji@american.edu.

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LAVISH LIFE

A VISIT TO THE STUDIO HIDEAWAY OF SCOTT WEILAND OF STONE TEMPLE PILOTS

WORDS BY ALAN DI PERNA PHOTOS BY CHAPMAN BAEHLER

LAVISH LIFE

SCOTT WEILAND

FROM THE OUTSIDE, LAVISH STUDIO IS NOTHING REMARKABLE — JUST A SQUAT, ONE-STORY BUILDING IN A BLEAK INDUSTRIAL AREA OF BURBANK, CA. BUT INSIDE, IT'S LIKE AN ARABIAN NIGHTS FANTASY. RED AND GOLD CHINESE LANTERNS HANG FROM A CEILING SWATHED IN SCARLET SILK. ORIENTAL CARPETS COVER THE FLOORS AND CEILINGS...

"The studio started out with an idea I had," says its owner, Stone Temple Pilots lead singer Scott Weiland. "Just the general concept of creating a vibe. On the technical side, things grew from that point."

Lavish is where work proceeds on the numerous projects that Weiland tends to have going at any given time. Outside the world of STP, he has done production work on the new Limp Bizkit album, *Chocolate Starfish and the Hot Dog Flavored Water*, and its predecessor, *Significant Other*. The prolific singer and songwriter is always at work on some solo track or other, including soundtrack tunes for the recent features *Ready to Rumble* and *Austin Powers: The Spy Who Shagged Me*. And he recently finished production on the inaugural release from his new label, Lavish Records. It's the debut album from hip-hop duo the Underdogs, one of whose members Weiland met while serving time in a Los Angeles correctional facility in 1999, on drug-related charges.

Weiland's problems with heroin addiction are as legendary as his keen fashion sense. But while the singer is dressing as sharply as ever these days, he's been clean and sober for over a year. He's recently remarried to model Mary Fosberg, and expecting his first child. Keeping busy is an important part of Weiland's recovery process. Recently, he has been keeping on top of a full touring schedule with STP and a long list of projects at Lavish.

"It has a lot to do with being active and pursuing my muse," he says. "It's a great feeling to be inspired. Whether you're inspired to make love to your wife, inspired by the upcoming birth of your first child, inspired to write a song, or to be an instrumental part in the making of someone else's album."

Lavish Studio got started in 1997, around the time Weiland began recording his first solo album, the fiercely experimental yet infectiously melodic *12 Bar Blues*. "The studio was originally in my house," he says, "in one of my empty rooms. But my ex-wife [Janina] quickly tired of that. And that forced me into moving into the Burbank space before I was actually planning on it."

One of Weiland's first moves was to equip the studio with a vintage Neve broadcast console: ten channels of 1066 input modules. "I searched all over the United States

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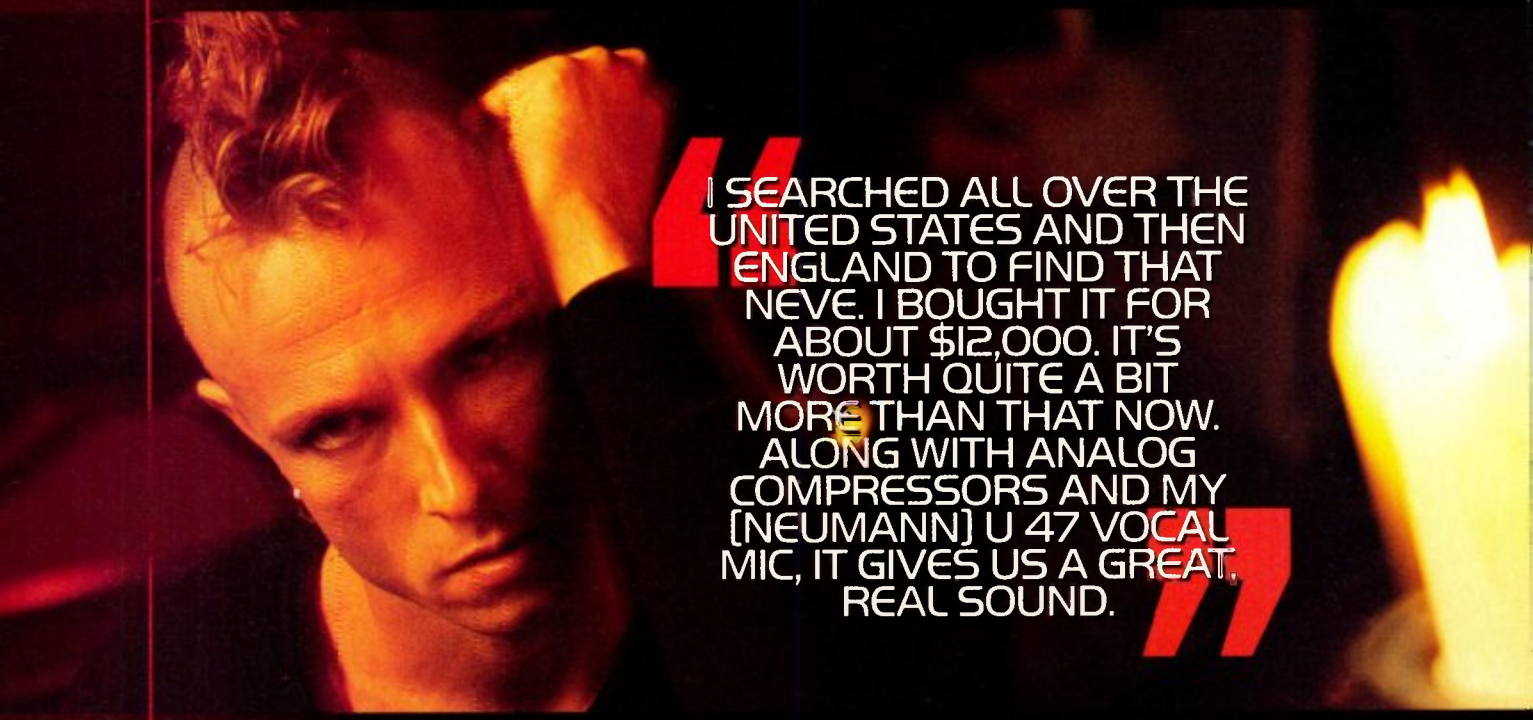
LAVISH LIFE



and then England to find that Neve," says the singer. "I got an amazing deal. I bought it for about $12,000. It's worth quite a bit more than that now. Along with analog compressors and my [Neumann] U 47 vocal mic, it gives us a great, real sound."

A Studer two-inch 16-track machine provided the ideal complement for Lavish's Neve board. Although Weiland has since gotten into Digidesign's Pro Tools, he was fascinated by tape editing during the making of *12 Bar Blues*. "It was how the Beatles must have felt making *The White Album*," he laughs. "It was an experimental art project. We would submix things down onto a half-inch machine and then splice tape to change arrangements and create loops. So everything was done the old-fashioned way on that record. A lot of cutting tape and then slamming things back down onto the two-inch machine."

Producer Daniel Lanois (Bob Dylan, U2) got involved in the latter stages of the project. "I came in on Scott's invitation to mix part of *12 Bar Blues*," he recalls. "And I found his music to be real inventive. In fact, there's a specific song of his, 'The Take,' that I've always admired. In terms of production, Scott pretty much did that song all on his own."

Lanois pronounces Lavish "a cool little place. One thing you gotta say about that little Burbank studio is that it's got a great sound. That's the kind of thing you just get lucky with. They moved into a warehouse. They built a stage. And it just happens to have this really good, dense musical sound."

But shortly after *12 Bar Blues* was completed, Lavish Studio — and its owner — fell into a dysfunctional state. Weiland was in and out of rehab facilities, and his studio was literally ransacked by hangers-on. All that changed, however, with the 1998 arrival of Doug Grean, Weiland's current partner in Lavish.

"When I got here there was a broken two-inch 16-track and lots of missing equipment," Grean recalls. "You know, the mic pre and EQ modules on the Neve consoles can be removed. They used to be worth two grand apiece. Now they're probably worth more. And Scott's were all gone. So me and Scott's manager and a couple of other people had to hunt down the people who'd taken the gear and get some of it out of pawn."

An L.A.-based guitarist, producer, and engineer, Grean met Weiland through his (Grean's) older brother, who was running the kitchen at Impact, a Pasadena rehab facility where Weiland underwent treatment.

"Scott made me a proposition," Doug recalls. "He knew I was a recovering addict, too, which I think was important to him. So we worked out a deal. I had a little ADAT studio over in Culver City. I ended up bringing all my recording gear over to Scott's studio."

Under Grean's management, Lavish has become a fully functional recording facility — considerably more advanced than it was at the time *12 Bar Blues* was recorded. The heart of the current setup is a Pro Tools Mix system that runs on a Macintosh 9500 tweaked out with a G3 upgrade card, extra monitor card, 36 GB of hard drives, three tape drives, and a 4X CD burner. Two Digidesign 882's provide A-to-D and D-to-A conversion.

Although the 9500 is an older

SCOTT WEILAND

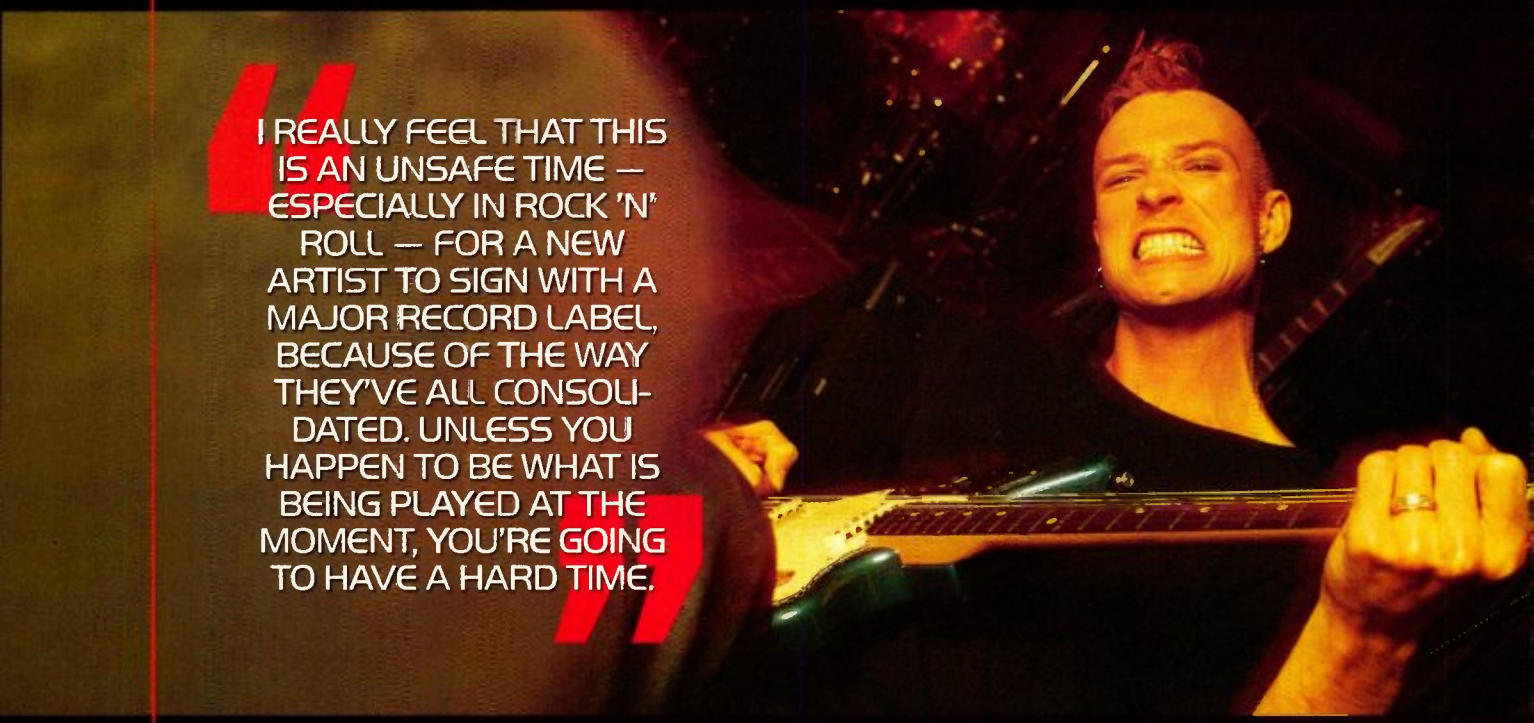
Mac, Grean says he prefers it to some of Apple's new models when it comes to Pro Tools applications: "The problem with those G3 and G4 boxes is that they only have three expansion slots. Whereas the 9500 and 9600 were the biggest Macintosh chassis ever made. They have the most RAM and certainly the most PCI slots. You can't beat them for that. But, having said that, I'll probably eventually go to a G4 anyway."

Lavish's Pro Tools system is supplemented with all the usual satellites: three Alesis ADATs left over from pre-Pro Tools days, and a MIDI rig that includes an Alesis S4 Quadrasynth Plus and Oberheim Matrix 6R tone modules, an Alesis QS6 as master keyboard, and Opcode 128X MIDI interface. "We don't really do that much MIDI stuff," Grean says. "There are maybe one or two MIDI tracks on each of our sessions. It's mostly audio."

The ADATs still come in handy: "When Stone Temple Pilots were in rehearsal for *No.4* [their most recent studio album]," says Grean, "I gave their sound guy a couple of ADATs and he would make these rough tapes of the songs with no vocals. We'd bring them into the studio here, turn the machines on, and Scott would write all the vocals here. This way, he didn't have to deal with the whole band watching him write the words and the melodies. And then I would mix that down onto DAT and it would go over to Brendan [O'Brien, STP's producer]. It worked really well for them. In the past, I understand, Scott used to wait until the last minute to write the words and melodies. So he'd be writing in some big studio, which is obviously more expensive, stressful, and risky. What if he didn't come up with anything?"

Weiland and Grean have combined Lavish's digital recording rig with an analog front-end. In addition to the ten channels of Neve 1066 modules, the studio is stocked with a good supply of tube mics and pres. "We have a Neumann U 47, a Groove Tubes

LAVISH LIFE



"I REALLY FEEL THAT THIS IS AN UNSAFE TIME — ESPECIALLY IN ROCK 'N' ROLL — FOR A NEW ARTIST TO SIGN WITH A MAJOR RECORD LABEL, BECAUSE OF THE WAY THEY'VE ALL CONSOLIDATED. UNLESS YOU HAPPEN TO BE WHAT IS BEING PLAYED AT THE MOMENT, YOU'RE GOING TO HAVE A HARD TIME."

SCOTT WEILAND

System Three tube mic, some [Shure SM]57's, and some Earthworks mics that are hot," elaborates Grean. "We also have a stereo tube mic pre that's custom-made by a guy named Bob Moran and an [Urei] LA-3A. All the guitar amps that we have here are tube amps. We've got a Vox AC30, a Fender tweed from the early '60s, a Mesa Boogie, and a Groove Tubes. So we use as many tubes as we can on the front-end and go right into Pro Tools."

"My favorite mic for my own voice is the U 47," Weiland adds. "At times, I like using the natural compression that takes place on an old tube mic, just as an effect. If you ride the Neve pretty hot so the mic is very sensitive, and then get right up close, you can break up the sound and get a bit of fuzz, kind of like what John Lennon used to do on some of the mid-to-later Beatles recordings, like 'Revolution.' And sometimes I'll use a U 47 to sing the choruses of a song and get a really fat, massive, warm sound. But then, for the verses, I'll sometimes sing through a condenser mic or a little drum mic or a mic through a guitar amp just to change the tone. It's always interesting to experiment with mics that are less conventional. My biggest influences as a singer would probably be David Bowie, John Lennon, and Jim Morrison. And two out of those three — Lennon and Bowie — had several different voices that they would use for different songs or even different parts of the same song. I picked up on that — the concept of using my voice as an instrument. So there are different mics I use to get those different vocal sounds.

"And also different effects. When I'm getting a slap-back effect, I like to use actual tape delay. I like those old Echoplex systems. And I also like to use guitar pedals for vocals. You can get some interesting sounds that way. Of course, I use the Eventide [Harmonizer]. It's a pretty standard thing. Everyone uses it because it seems to do so much. But what I don't like, in recording vocals for albums, is using the Eventide to double a vocal part. I do that as little as possible. It just seems to be such an overused sound. When I've worked with Fred Durst, as an assistant producer on the last two Limp Bizkit albums, I tried to inspire him not to rely on the Eventide doubler so much. Singers will sing with a little bit more passion, a little bit more authority, when that's not being relied on. To get a fat, double sound, if that's needed, the best thing is to just double-track it — sing the part twice."

Weiland is a fan of innovative effects processing on all sound sources, not just vocals. For these purposes, Lavish is equipped with an Alesis Quadraverb Q20 and Midiverb 4, a Yamaha Rev 7, a dbx 153IP EQ, and a dbx 166 compressor, among other things. "Our current favorite is the SansAmp," says Grean. "We use it for everything but guitars. The more f*cked up Scott and I can make something sound, the better we like it. That's why we get along so well. Another big favorite right now is the Access Virus [synth]. And my favorite guitar pedal at the moment is the [ElectroHarmonix] Dr. Q. Anything that gives you any kind of filter effect is great. We totally abuse it."

All this sonic mayhem is monitored through a Soundcraft Ghost LE 32 x 8 console connected to a pair of Mackie HR824 powered monitors and Yamaha NS10M's

driven by a Crown DC300A power amp. "But for anything that's going to be major release — like Scott's tracks from *Ready to Rumble* and *Austin Powers* — I'll go over to Cello to mix on their GML-automated Neve console," Grean adds. "All the tracking, overdubbing, and edits we'll do at Lavish, taking all the time we need. Then I just bring my hard drive to Cello and mix in one of their rooms. I always rent in a Pro Tools rig. We spend one day there and it costs us two grand plus the rig. As opposed to spending five days there at two grand a day."

For the *Ready To Rumble* soundtrack, Weiland collaborated with former Beastie Boys turntablist DJ Hurricane on a cover of the Queen classic "We Will Rock You." "It's a shame the track went to such a crappy movie," Weiland shrugs. "It was their idea [the film music editor's] to do that song. They spoke with Hurricane about it and he put down the original beat and sent it over here. Then Doug and I embellished the rest."

"There are four different drum loops on there," Grean elaborates. "Two came from Hurricane and two came from me. Then there's one loop of real drums, played by Scott's brother Michael, in the choruses. We took it to Cello and one of the tracks was pumped through a Fairchild [compressor]. Magic."

Weiland's heavily layered vocals and Grean's guitar were both processed through the Virus. But beyond affording Weiland a creative outlet, side projects like these also help fund Lavish. "I divert a chunk of what I make — including the two Limp Bizkit records I helped produce — into the Lavish Records account to keep things going. With those things, we've done pretty well."

By this point, Weiland has become a valued member of the Limp Bizkit production team, having contributed to both the mega-platinum smash *Significant Other* and the band's new album, *Chocolate Starfish and the Hot Dog Flavored Water*. "Both times they called me when they were

THE DRUMMER'S DOMAIN

Scott Weiland isn't the only member of Stone Temple Pilots with his own recording facility. STP drummer Eric Kretz has a full-blown project studio built into his home in the San Francisco Bay area. It's been the site of many STP demo recordings and of a project that Kretz recently produced for local rock band Man Made God.

"I started 10 or 12 years ago with the good old TASCAM four-track," says Kretz. "And things just grew from there. Working with great engineers like Brendan O'Brien, Nick DiDia, and Jack Joseph Puig in STP, you get a lot of great tips on what gear to buy."

Kretz is particularly proud of his vintage Neve sidecar, a broadcast 1073. "It came out of the BBC," he enthuses. "I got it from some of the crew guys from the Rolling Stones. They've been smart enough to find these pieces from all over the world. They buy them, resell them, and, of course, make a killing. So many boards sound technically correct, but they seem to lack character. But as soon as you plug into a Neve or the Tube Tech preamp, which I also love, it's so easy to get a good sound. All you need is a mic, mic pre, and compressor."

Kretz uses his Neve as a front-end to three TASCAM DA-88's fed with Apogee converters. "But I'm going to get either an Otari or Studer two-inch [analog 24-track] machine. From working on two-inch with Stone Temple Pilots, I know that that sounds so much better. I might combine a two-inch machine with one of the new TASCAM DA-98's."

In addition to the Tube Tech mic pres, outboard gear at *chez Kretz* includes Demeter mic pres and vintage dbx, Pultec, and Teltronix compressor/limiters. "I've also got a Roland Space Echo," he adds, "which is always a great thing for softening up a digital signal a little bit."

The studio's Mackie digital eight-bus console is used mainly for monitoring, according to Kretz, although he did use it to mix the Man Made God project. "I needed the automation," he says. "One of the challenges in recording that band is that they tune their guitars down to A. So there was just this humongous low end. The challenge was to have clean low end that wouldn't get too muddy. Marshall cabinets really rattle when you tune a Les Paul down that low."

For monitoring, Kretz has Tannoy PBM12's and Yamaha NS10M's, driven by a Hafler power amp. He mixes to a Panasonic DAT machine. The studio's main room is an approximately 40 x 15 space that accommodates both control room and instruments. The latter include a Hammond B3 and Wurlitzer electric piano. There's also a 14 x 10 cedar-lined iso room, which Kretz uses for guitar amps and also for his drum kit.

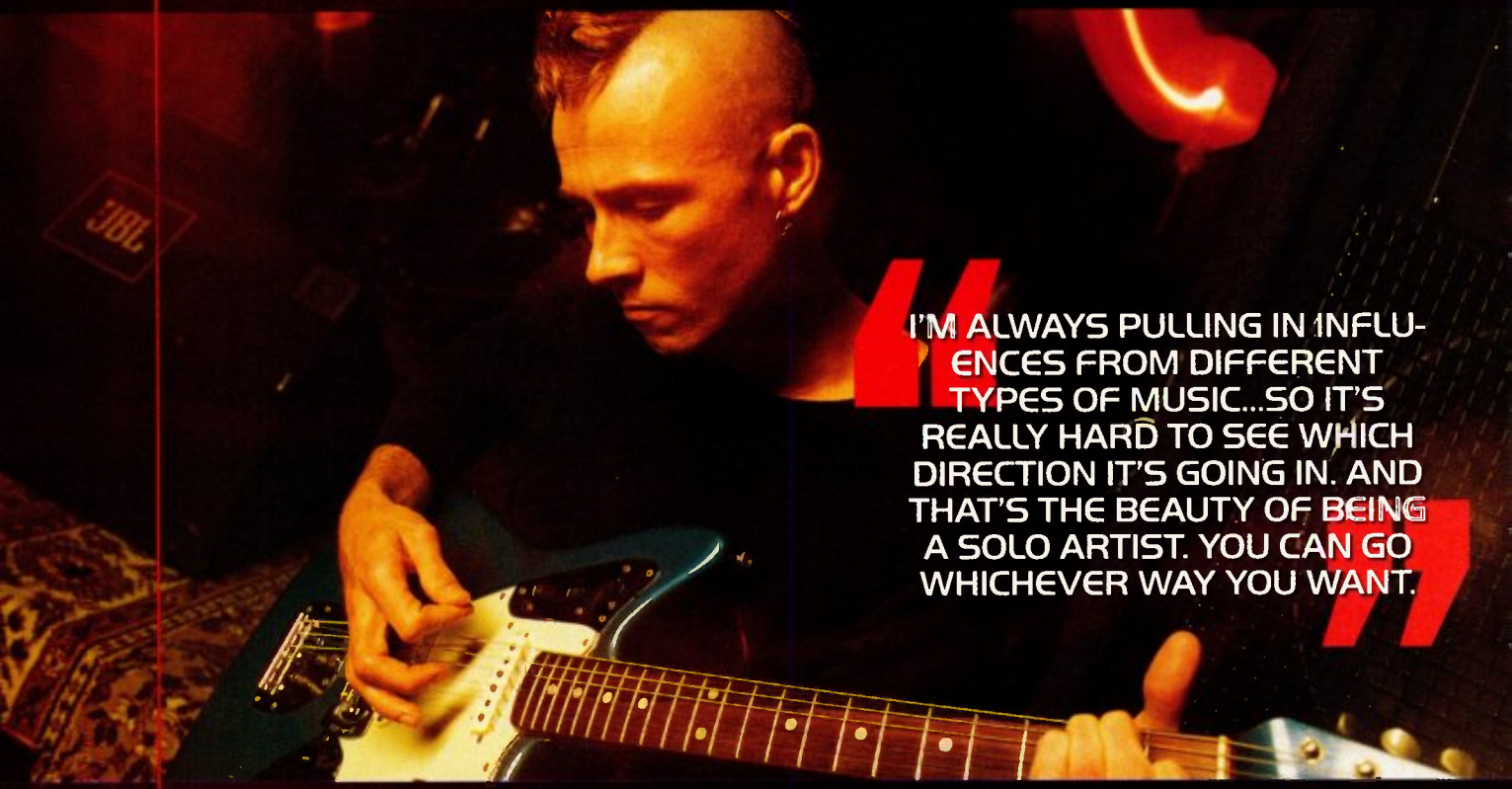
He has a good mic selection, and favors an AKG C414 for kick and Beta Shure 57's for snare. "They have a great upper midrange bite for snare," he says. "For overheads, I might pull out [Neumann U] 87's, 67's, or my [Sony] C-12. But I'm really impressed with the tube mics Gene Lawson is making, and I have some of those as well. Seven out of ten times the Lawson mic works, and it's not [as expensive as] the C-12. We used that mic a lot on STP's *Purple* album. Most of the gear I have was tried out either on the STP records or the Talk Show record." *[Talk Show was the band that Kretz put together with STP guitarist and bassist Dean and Robert DeLeo during an STP hiatus in 1997–98.]*

Kretz uses a Tube Trap to the shape acoustics in his main room. "It's a rectangular room, and the reflections were killing me," he says. "There are windows on one side, which overlook lovely San Francisco. But, unfortunately, windows aren't the greatest thing acoustically. Especially at a 90-degree angle to a wall. The big question was should I put $10,000 into redesigning a room in my house, or am I eventually going to outgrow this anyway? I'm already at that point, so the Tube Trap was a good interim investment. They sound good and you can put them anywhere."

For the moment, Kretz is staying put. His house is built into a hillside and the studio rooms are on the lower level. "The studio is embedded into the earth deep enough that I haven't had any noise complaints from neighbors," says Kretz, "as long as I'm not banging on drums past midnight. Also, it helps to have neighbors over 60. They don't hear too well."

Although Stone Temple Pilots are in full swing once again, Kretz, Weiland, and the De Leo brothers all have plans to do outside production work with up-and-coming artists. "There's a lot of creativity in this band," says Kretz. "It's good to have a few different outlets for it." *—Alan di Perna*

LAVISH LIFE



"I'M ALWAYS PULLING IN INFLUENCES FROM DIFFERENT TYPES OF MUSIC...SO IT'S REALLY HARD TO SEE WHICH DIRECTION IT'S GOING IN. AND THAT'S THE BEAUTY OF BEING A SOLO ARTIST. YOU CAN GO WHICHEVER WAY YOU WANT."

mid-way through the recording of the album," Weiland notes. "On *Significant Other,* they were working with Terry Date as engineer and co-producer. Terry is a great rock engineer. He knows how to get really fat, massive sounds. But I think that his strength is more in the area of being a sonic guy. And I think they wanted someone who had more of a musical background [as co-producer]. Which is where my strength lies — in melody, arrangement, and song structure. I feel that they really wanted to push the envelope and show that they were a little more than just a rap/rock group. And I think they did that on a few songs. Unfortunately, those weren't the singles that were released to radio, except for 'Rearranged.' That was a song where I definitely got Fred inspired to sing a bit more melodically."

On *Chocolate Starfish,* Weiland was called in to help snap Durst out of a much-publicized case of writer's block, which had pushed the album far past its initial projected release date. "It happens to the greatest," says Weiland of Durst's predicament. "So they called me up and I came down to the studio and we bashed a few things out right away. I think I helped him to respark the creative process. To dig deep. Inspired him to come up with stuff that was fresh and exciting. 'Cause they have a lot to live up to on this album."

As Weiland grew more confident and experienced as a producer, it seemed a natural progression for him to start his own label. "It first began as Flaming Music Productions, and that grew into Lavish Records," he says. "Because I began getting involved in producing groups, I began having the opportunity to sign some groups. I really feel that this is an unsafe time — especially in rock 'n' roll — for a new artist to sign with a major record label, because of the way they've all consolidated. Unless you happen to be what is being played at the moment, you're going to have a hard time. There are very few A&R people left who have any sort of vision, or who are allowed to have any sort of vision, based on the restrictiveness of radio formats and MTV. There aren't really people out there looking to break engaging new artists. And I think that's really sad. Pop culture is being force-fed a lot of sh*t. Everything is sounding very monotonous. I really feel that the indie route is the only option for a great band that doesn't sound like Korn, Limp Bizkit, or Creed. And I don't necessarily mean having independent distribution. You can be signed with an independent company that's going to look after your interests and then use the distribution arm of whatever major label best suits your interests."

Weiland is currently developing a power-pop/punk group called Superunit. But the first priority project for Lavish Records is the Underdogs, whose gangsta rap credentials are certainly valid.

"I met one of the guys while I was in jail," says Weiland, "and we became close friends. His name is Chucudi Ubani, a.k.a. SD. He's from Inglewood — the

real deal. And from a different side of the street than I'd experienced living. But we had some things in common getting through the situation we were in. We got in around the same time and got out around the same time. I knew he was a rapper and unsigned, and that he has a partner, Antoine Strong, a.k.a. Foe. But I never asked him to rap for me until about two months after we'd been in there. We were out in the yard one day and I said to him, 'The anticipation is killing me. You gotta just let me hear what you're able to do.' I just sort of busked a faux beat out of my mouth to the best of my ability — which isn't great — and he just freestyled over it. I was really quite taken aback. His words were, 'If you think this is something, wait till you see my partner and I together.' So I said, 'If your partner is anywhere near as good as you, when we get out of here I'll take you over to my studio and record you.' So I got out and I got them down to the studio. We recorded a few demos with DJ Lethal from Limp Bizkit, a few with DJ Hurricane, and a few on our own."

"We actually went out and bought an [Akai] MPC 2000 [hardware sequencer/sampler] fully blown with RAM and everything," says Grean, "so they could fly out here from Atlanta, just bring their Zip drive, plug it in, and go. Then we tracked the vocals and did the mix here. It's been an effort to get this whole thing done. Because we're not rap guys. We're white rock guys."

But Weiland pronounces the project, "a lot of fun to do. And completely non-restricting. Within pop music or rock 'n' roll, you're limited to a key and a chord progression. But in building hip-hop beats there really are no rules. Now that the record's just about finished, we've been talking to Interscope and TVT about distribution, trying to figure out what will be the best situation for the Underdogs and for Lavish Records. It's quite a thrill to be a partial facilitator in making someone's dreams come true."

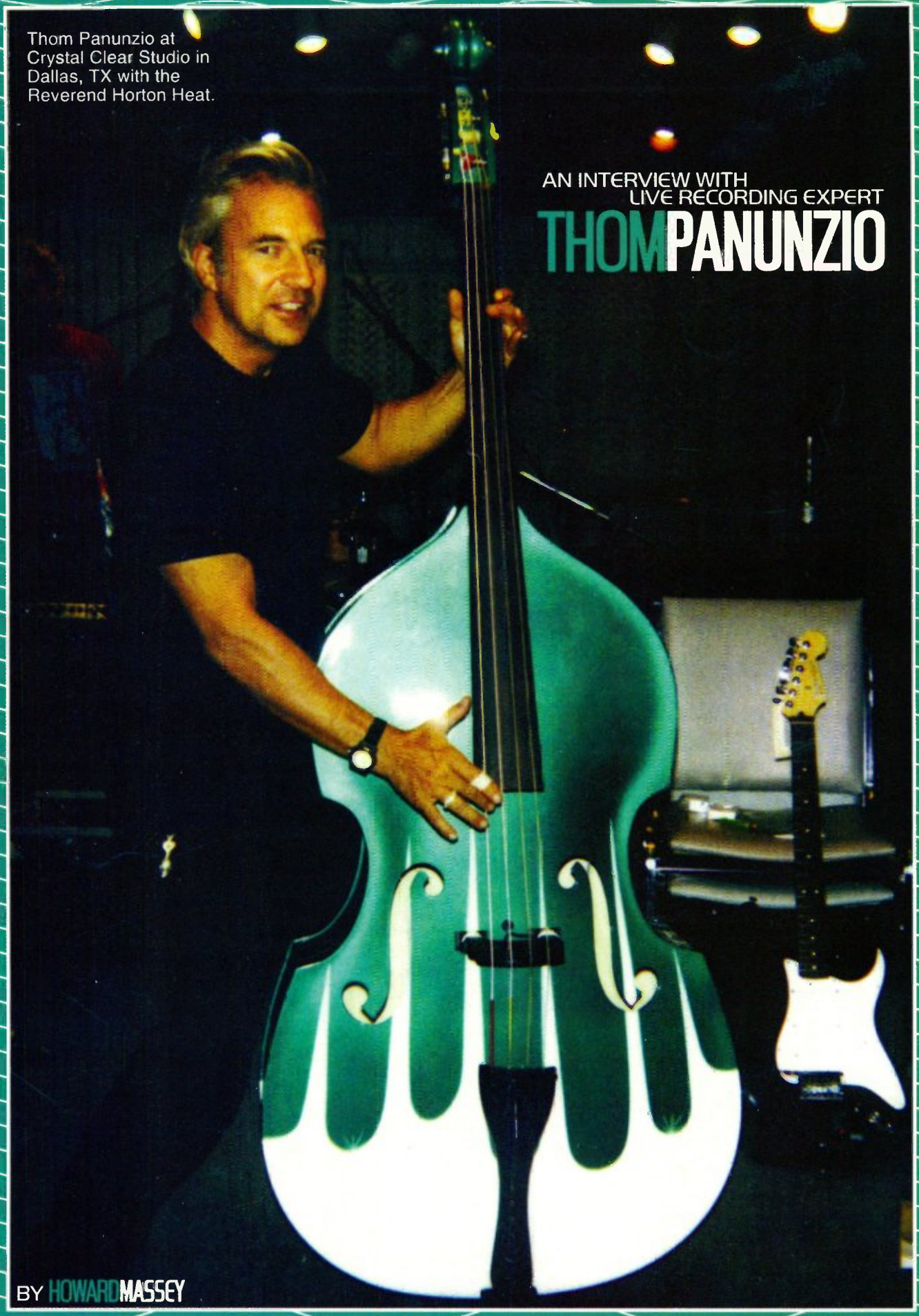
Weiland also uses Lavish Studio to turn his own musical visions into realities. "We've been working on Scott's next solo record," says Grean. "We have about eight or nine songs that are potential solo record songs." The engineer adds that work on new songs has continued even while Weiland has been on the road with Stone Temple Pilots:

"Two weeks ago, Scott came into town for a few days. He said, 'I have this idea for a song.' He just sang me some guitar parts and did mouth percussion for the drums. After he left, his brother Michael and I put all the parts together. I just FedExed it to him in Chicago. He'll listen to that rough draft, make some notes, and we'll change whatever he wants. It's not a real fast way of working. But by the time he comes off the road, we'll have quite a bit of the record done. We'll probably just have to cut vocals, maybe do some arrangement in Pro Tools, and then go mix somewhere."

But Weiland cautions that it still might be quite awhile until the long-awaited sequel to *12 Bar Blues* sees the light of day: "I'm always writing songs and stockpiling them. But, honestly, I don't have a clue when I would put out another record because of the level that STP is functioning at right now. We're just now beginning to get back to the level that we left off at. [*The band went on hiatus in 1997 in the wake of Weiland's problems with addiction and returned to action in March of 1999.*] It's such a joy to be working with these guys again, and we've been really busy."

But is the material that Weiland's stockpiling as experimental as *12 Bar Blues*?

"That's hard to say," he laughs. "I'm always pulling in influences from different types of music...so it's really hard to see which direction it's going in. And that's the beauty of being a solo artist. You can go whichever way you want. That's one reason why I admire Beck so much as a performer, songwriter, and producer. His stuff is such a montage of sounds. My stuff doesn't sound like Beck, but it has a similarity in so far as it's a scattered mess — a potpourri of sonic designs that have great melodies and lyrics." ■



Thom Panunzio at Crystal Clear Studio in Dallas, TX with the Reverend Horton Heat.

AN INTERVIEW WITH LIVE RECORDING EXPERT

THOM PANUNZIO

BY HOWARD MASSEY

Talk about being thrown in on the deep end: The very first session Thom Panunzio ever assisted on was a tracking date for John Lennon's Walls And Bridges *album. That's the way it was when you hung out in New York's Record Plant studios in the mid-'70s. Scant months later, Panunzio was watching (and helping) history being made as a fledgling artist by the name of Bruce Springsteen prepared to take the world by storm with* Born To Run.

Training under some of the top guns in the Big Apple — Jimmy Iovine, Shelly Yakus, Jack Douglas, and Bob Ezrin, to name a few — prepared Panunzio for his own stellar career as a producer and engineer. He soon became one of the leading experts in the vagaries of live recording, working with Link Wray on Live From El Paradiso, *with U2 on* Rattle And Hum, *and, more recently, with Black Sabbath on their* Reunion *album and on the live Ozzfest releases. These days, Panunzio is based in the sunny climes of southern California, but his Yankee cap and Jersey accent belie his roots as a Noo Yawker, through and through.*

THE DEEP END OF THE POOL

THE DEEP END OF THE POOL

EQ: As an East Coast guy who's now living in L.A., do you think there's an East Coast sound as distinct from a West Coast sound?

Thom Panunzio: Sounds represent people's cultures, their neighborhoods, their environments, but right now I would say I see less difference [than before]. The world is more the same because of the Internet and computers — everybody in the Midwest knows what we're doing in California. When I first heard sounds from England when I was a kid, it was, "Wow!" Now everybody knows what's going on in England even before it's a hit.

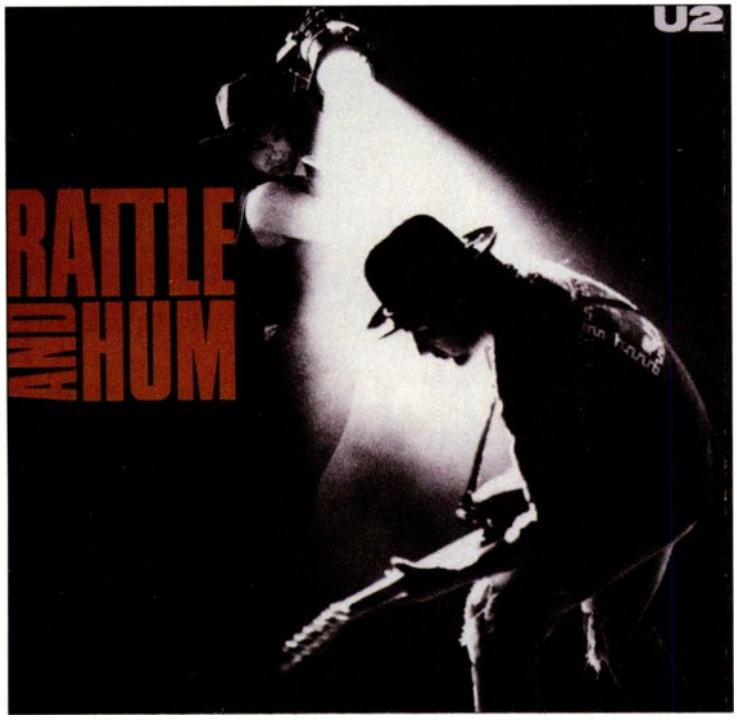
But do producers in L.A. approach making a record differently than producers in New York?

I think it's pretty much the same thing. When the sound needed to get bigger in the '80s, the rooms got bigger in California and they got bigger in New York. When kids started making records — hip-hop records or things with drum machines — it seemed like they did that because it was a cheap way and the only way to express themselves. They didn't have the money to go get real drums and go into a real studio and do it, and it became universal once somebody figured out you could spend four thousand dollars instead of four hundred thousand dollars to make a record if you had these tools.

It's the same thing now with computers and Pro Tools; there are Pro Tools rooms East Coast and West Coast. You can take your floppy disk or your hard drives and go from one room to another, from New York to L.A. In fact, you can be in L.A. and record in New York! The technology has advanced so much and everybody's using it to the utmost. There are people making records just with Pro Tools, and they're doing it on the East Coast as well as on the West Coast.

One of the hardest things for the novice is getting sufficient low end but getting it tight enough so it's not flabby and woofy. What techniques have you come up with for achieving that?

Panunzio is partly responsible for U2's successful *Rattle and Hum* live disc.



A lot of times, you can't do it with just a bass guitar — you've got to put some kind of low synth in with it, or you need to add a subsonic booster from a piece of outboard gear. On rap records and stuff, that's how they get that low end; that's not bass guitar — they've got toys that are adding all kinds of low end, and they use a lot of low-end synthesizer. That's the way industrial music or any of the new real aggressive hip-hop music is made. The bottom is still there, like on other rap records, but you also have the other aggression on top of it. Basically, you've got to add stuff with the bass guitar.

Do you compress bass during recording and again during mixing?

Yeah, I like to limit bass a little bit on both. You just hear it better; it makes it punchier, and it's easier to mix up a little louder.

What sort of compressors do you use?

If I want something fast, I'll use a dbx 160 — that always worked for me. But if I want a great big bass sound, I'll use old Neve limiters on both the direct and the mic.

What kind of compression ratios do you use on bass?

It depends so much on what the guy's playing, so I don't have any standard settings. If I have a Fairchild on the bass, I would set it differently than if it was a 160. I also work in Jackson Browne's studio when I can get in — it's one of my favorite studios — and they have a lot of the old original Record Plant gear. Their old Raytheon limiter really works well on the bass — it's big and ballsy yet clean — but you don't see those in too many places.

Do you prefer analog tape to digital recording? Tube to solid-state?

I like to combine both worlds, but when I'm recording I like to get big, nice warm sounds, and it seems like the old tube gear works really well for that. I love working on SSLs; I think they are the best tools ever made, and I love the sound of them, but I like to combine the old and the new. If I can, I'll record at least the basic tracks on 16-track tape; I'll then take that tape and transfer it onto a 48-track digital, and I'll put the 16-track tape away so it won't get used at all until it's time to mix. Then you take it out and you rock! Your digital tape — which has been run a few thousand times through the machine — is still as good as the first day because it's digital, so that's a perfect example of using both analog and digital.

I like to mix to half-inch analog; to me, nothing sounds better. I'll also run DATs as backup and occasionally, when you get into mastering, you might find that, for whatever reason, it sounds better on the DAT. What you hear coming off tape or analog gear isn't *really* what it is — the equipment is adding to the sound. Sometimes tape is compressing, and it's adding warmth; it's got a sound. But with digital, it is what it is. All I know is that I'm not hearing what I hear on tape, which is what I like. I like what I hear when I hit the tape really hard and I hear it compressing and distorting a little bit; I like having that as another tool to use.

The same thing with Pro Tools. You make a record in Pro Tools and people say it's got a sound or it's digital, but what you're actually hearing are the converters. What it really comes down to is people buying the song and the singer; all the rest of it is just creating an atmosphere and a vibe around that. So a lot of times you

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get in and, especially in this profession, you spend days, hours, weeks to make the tiniest difference in the sound quality. We'll travel halfway around the world spending thousands and thousands of dollars just to make it that much better. You should always strive for that, but sometimes people get a little caught up in that. But if it works — if it sounds right — hey, that's what it's about, however you get there.

How do you reconcile disagreements you might have with an artist — for example, if you're convinced a vocal is not right but the artist is equally convinced that it's perfect?

You don't always see eye to eye, but I have two rules about this. One is that, at the end of the day, I never do anything that the artist doesn't want to do. It's not about me, it's not about all these electrons, it's about *them. They're* writing the songs, it's their face on the cover, they are going to live or die by the records — you are going to go on to do others.

My second rule is that you always do what's best for the record. That rule is second because sometimes it contradicts the first rule [*Laughs.*], but I'll lobby heavily for what I think is right. I like to work with people that have the same vision I do, where we're going for the same thing. So you're not talking about apples and the other guy's talking about oranges — you're probably talking about something that's very minor, something that most people aren't even going to hear. What I like to do in a situation like that is, I say, "Look, at the end of the day, it's your call, it's your record, whatever you want — but let me have a version like this, let me do a mix of it like this or a piece of it like this. Just keep an open mind to it and at least try it." I'm not a Nazi. I'm not coming in to try to reinvent what the band's about. I want to try to capture them and have the same vision they have. Okay, people can differ because there is no real right or wrong — sometimes it's just a matter of opinion: is blue a better color than green? There's no right or wrong to that. Sometimes it's obvious that somebody's flat or one vocal's better than the other, but usually the guy's going to hear that. And usually, at the end of the day, what's right stands out and most people agree. It takes two minutes to do alternates with anything, whether it's a drum take, a vocal, or whatever. Just lay it down both ways and live with it, then decide later.

Producing a live record is very different from producing a studio record. Does your role in a live recording become more that of a facilitator, as opposed to actually working on arrangements and conceptualizing how things are going to be presented?

It's not very different. My point of view is that my job on every record is to do anything I can to make it work. Is it talking to this guy before the show and making him feel good? Is it scratching a microphone so somebody sitting there in the truck tells me it works? Is it trying to track down a bad cable? Is it listening to another record by the band before they go on to decide on a drum sound? It's whatever it takes to make it work.

Doing a live record is almost like being in the army and going into battle, because you only get the one chance — and that's the only real difference between live and studio recording. With U2, doing *Rattle and Hum,* there were two remote trucks, a film crew every night, helicopters with cameras, cranes, and railroad tracks around the stage. If you didn't get the sound, all that's wasted.

So, in both kinds of records, you do anything and everything you can do to make it work. In the studio, if it means running out and getting a glass of water to the guy, or if it means blowing up balloons and burning incense and having candles, or if it means clearing the whole studio out and being the bad guy — whatever it takes to make the session work. Same thing for the live record, except, as I said, with live recording, you only get one shot, so you've got to have it together

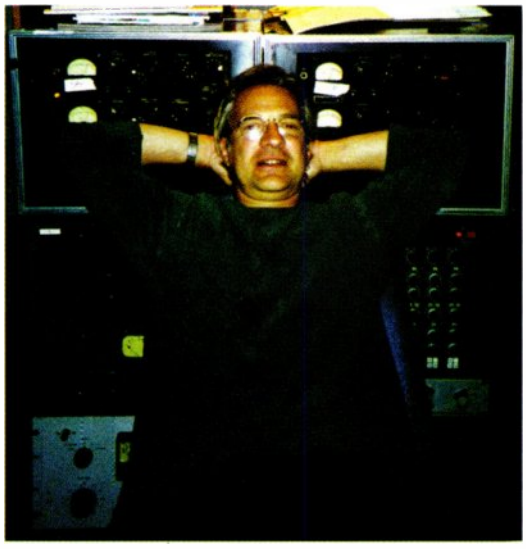
What do you think is the essence of a great live record?

My favorite live records aren't necessarily the best sounding ones or even the ones with the best performance. Sometimes they're the ones with the loudest audience, because I think the most important thing about a live record is feeling like you're there. That's what I try to do when I mix a live record — I like to close my eyes and feel like I'm right there in front of the band like I was that night.

Do you put more of the work into the tracking and just sort of let the mix come together, or do you tend to just get the tracks down and then "fix it in the mix"?

It seems that these days the mix has become such a crucial thing; people even wonder who's right for a particular mix. I think there's been too much emphasis put on the mix. There are some great mixes out there, and there are guys who can really make a difference in a record — you don't get the right mix and you can blow a record. You get the right mix and it can make a difference — but to me, if you don't have it on tape, you don't have it. A lot of remixers are really *remaking* the records, especially in the R&B world. That's different — that's additional production, that's rearranging, that's re-producing. That's different from just mixing. Years ago, mixing was not as big a deal because you didn't have the options you have now. These days, you can change the whole record, and record companies know it's their last chance.

Panunzio at Groove Masters in New York.



You can still only do so much in mastering. Mastering hasn't changed as much because it's all digital. Every mastering room has Pro Tools or Sonic Solutions or something to do digital editing, but basically what you're doing to the mix hasn't changed that much. You're compressing a little bit, you're adding a little high end, a little low end. Unless the guy wants to edit it or rearrange it, but to me that's not mastering — that's digital editing or additional production. Especially with live records, it's such a great tool to get the applause at the right level and to make it all sound like it's a live record and take things out or move things around. For example, if the artist says something you don't want on the record — if he mentions a city and it's not universal — you just pop it out. But the mix

can only be as good as what's on tape.

As you're tracking, are you constantly thinking ahead to the mix?

Always. For instance, if I have an effect that's really working and the band is playing to it, I'll always print it. I'll print it on another track so I'm not locked into it, but I'll print it because maybe I won't be able to get it like that in the mix, or I won't remember what it really sounded like. But you're thinking about not just the mixing, but the overdubbing stage. You've always got to be thinking down the line; if you don't, then you get into trouble.

How long do you typically spend on a mix?

A day is what I feel is appropriate. What's ideal for me is to set up a mix and work all day on it, then take it home and live with it in the car on the drive home and on the drive back. Then I come in the next morning and tweak it and then move on to the next one.

Perhaps the toughest thing for the person starting out in their own studio is knowing when to stop. What do you use as a guideline?

It depends on whether you're experimenting or whether you have something in mind. That's why I like to have a vision beforehand. If you've seen a band live, or if you've heard them rehearse, or spent enough time talking about what the record should sound like, you have a vision. So you work until you reach that vision. Some guys create in the studio, and if you're just creating, you can go on forever. But a lot of times you know what you want it to sound like, and maybe that'll take five minutes to get, or maybe it'll take five days to get. It all depends on how important it is and what your timeframe is.

Which is perhaps the most important reason for having a producer — somebody who knows when enough is enough and when it's done and not overdone.

Yeah, but a lot of times producers *don't* know. A lot of producers will mix and mix and mix because it's not on tape. They didn't capture it, but they think they can in the mix. Then, when they don't get it in the mix, they think the mix is wrong. That happens a lot — A&R guys do that, producers do that. But you can't polish a turd, as they say. A lot of times if something doesn't sound good, you can mess it up and it will work, rather than trying to make it sound good. For instance, if a guy isn't singing well and you can't get a better vocal out of him,

► continued on page 143

POP MUSIC

TALK ABOUT...

POP MUSIC

THE RISE OF THE PRODUCER IN TODAY'S HIT MUSIC

TWO WORDS I BET YOU NEVER THOUGHT YOU'D SEE IN THE PAGES OF *EQ* MAGAZINE: *BOY BAND.*

Got your attention? Okay, here are a few more: Britney. Christina. Mandy. 'N Sync. Backstreet Boys. Sisqo. TLC. Destiny's Child. Monica. Brandy.

No, we're not morphing into *Teen Beat*. But there's something going on here that demands our attention, because, love 'em or hate 'em, these are the acts that are raking in the big bucks here at the turn of the century. More importantly, this is the genre that's serving to redefine the role of the record producer. Check the charts: you'll see that, more often than not, one name (or one "camp") is the sole creative force behind each hit, with one person doing the writing, arranging, engineering, mixing, *and* production — sometimes they even run the record label! In short, today's producer is becoming the star attraction.

Of course, there's always been pre-manufactured fluff in pop music — there's nothing new about that; in the '70s, they called it "bubblegum." You can almost trace a straight line from the Big Bopper to Bobby Sherman to Herman's Hermits to Paul Revere and the Raiders to Tommy James to the Monkees to the Bay City Rollers to the Knack to Debbie Gibson to New Kids On The Block to the Spice Girls. But never before have the charts been so dominated by such a small handful of producers cranking out hit after hit after hit fronted by a succession of virtually interchangeable pretty faces. One team

BY HOWARD MASSEY

TALK ABOUT...

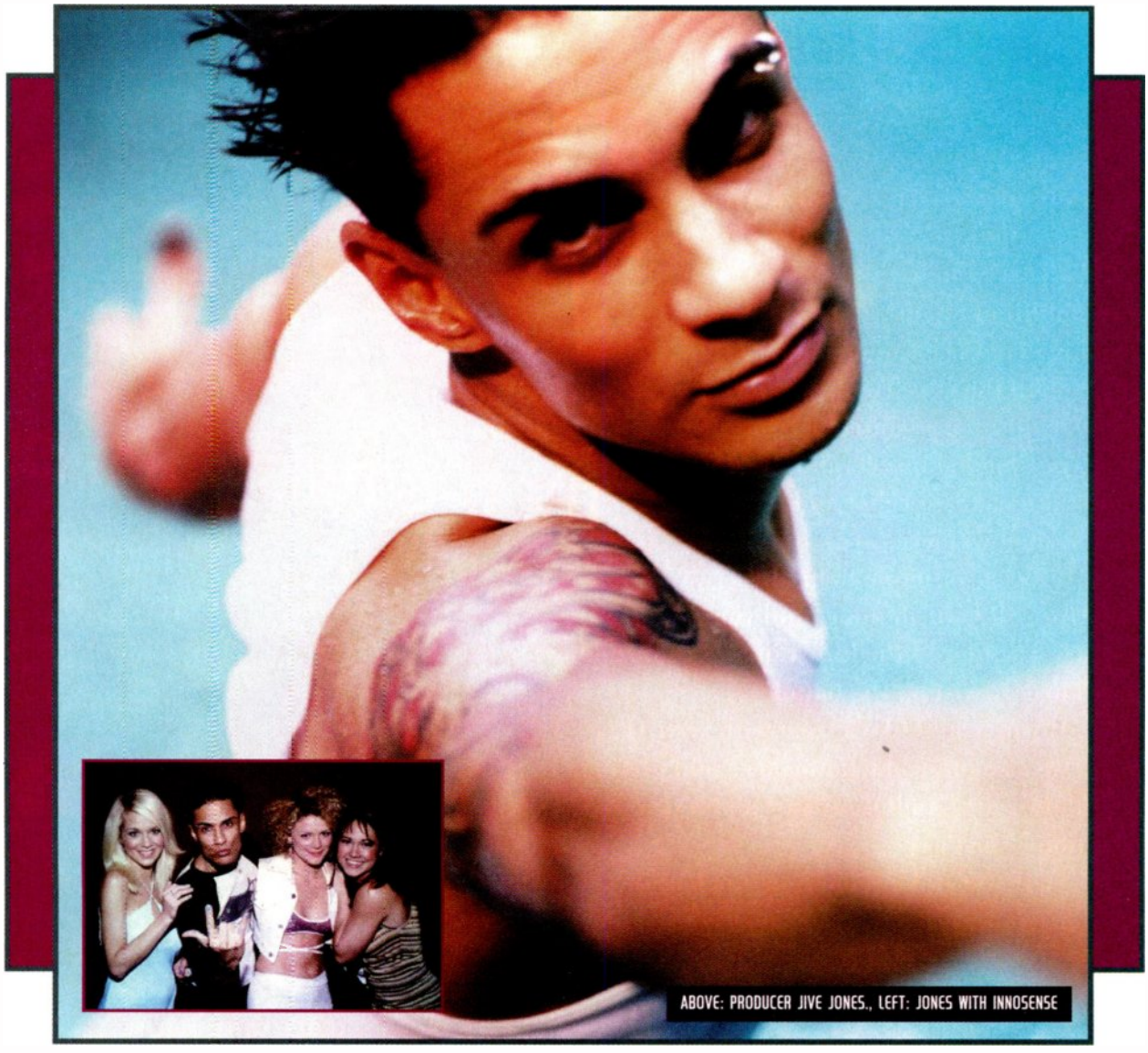
POP MUSIC

there, helping him make records."

Matt Serletic, who crafted the monster hit "Supernatural" on Carlos Santana's recent Grammy-sweeping album of the same name, is convinced that the increased visibility of today's producer is a positive development. "There is much more opportunity now for songwriter/producers who can create most of the track themselves; that's at an all-time high, in terms of being accepted and sought after. I think it's healthy in that it's making musical people important. You have producers running labels and making decisions that give other people a chance to get into the business."

So when exactly did the trend begin? Tim Kelley of the production team Tim and Bob (the forces behind Sisqo's recent mega-hit "Thong Song") has a pointed answer. "Let's be honest: Puffy [Combs] kind of came in and changed the game with all those samples. That's really what kind of messed up the whole musicianship thing — when he took a sample and just looped it. [*Laughs.*] So here come all these DJs-turned-producers, because DJs know how to make the party rock. They know what samples to sample to make a party jump really hard. They were called producers, but all they were doing was just looping records."

Twenty-five-year-old Jive Jones, who produced and co-wrote Mandy Moore's recent hit single "Candy," brings a Gen X perspective. "When I was eight or nine years old," he recalls, "I remember the whole New Kids On The Block thing happening, and it was all done by this guy Maurice Starr. He also did New Edition, and it seemed like he was controlling the world. At the same time, on the rock side, you had Mutt Lange taking control, with all the AC/DC stuff, the Def Leppard thing. And then, in the indie era, everybody was thinking 'me, myself and I; I'm cutting music for myself, I make it all, it won't be commercial' — but at the end of the day, it was! [*Laughs.*] So I feel like it's all just here again, although



ABOVE: PRODUCER JIVE JONES., LEFT: JONES WITH INNOSENSE

CRAFTING HITS WHILE AVOIDING FORMULA

We may be in the "superstore era" of pop music, as Jive Jones says, but the key challenge to today's producers is to keep finding fresh new ways of presenting musical ideas and attain commercial success while avoiding "formula." How do some of these guys do it?

Jerkins: "I always say, 'When you're hot, you're hot,' and that's the bottom line. You'll lose your heat if you stop. If you continue at what you're doing and work at it every day, you can only get hotter, because practice makes perfect. So it's not like there's a formula, but when you come into the studio for 16 or 20 hours a day, you're bound to make some great music. And that's all we do — we go into the studio and we keep going and keep going until something comes out, until I feel in my bones that it's a hit."

He adds: "I really try to get that rhythm track programmed to the best of my ability, then I go and I do all the overdubs with my hands, playing sounds myself, just getting it to where I want it to be. Then I will bring an orchestra in and I will play the piano or different sounds over my tracks, with no quantization on it, where it's totally just me playing and it's not a machine playing. Even if you've got the tools to program, the computer can't do what I do. If I can get that ideal blend between perfect machine sounds and less-than-perfect human sounds, I'm in good shape.

"As far as doing vocals, I try to keep the human feel as much as possible. If it's really needed — if there's a note that's just so bad that I have to do AutoTuning, then I will, but that's usually not the case. I've been able to work with great artists that can sing, so sometimes I don't even go to Pro Tools — sometimes it's just recorded onto reel-to-reel and that's it. But you have to sample the chorus and fly it in — it's not like it was back in the days when you had the time to record each chorus separately. You know, these record companies don't give you the time like that anymore — they want their record done in two days! [*Laughs.*] No question, they want it done, they want it in and out."

Kelley points out that, "There are a whole bunch of different things you can do so your sounds don't sound like the next person's. I think that's a lazy approach for producers — just because you had a hit record with one artist, you make your next record sound just like that, too. In a way, we've mastered the ability to take an artist and give them their own style. Or, if they already have a style and have already sold records, we look at what they've done, we look inside the artist and see where they should go from there, what would make them go to the next level. If they've sold a million or two million records, what can we do to make them sell maybe eight million? That's our thought process, at least at the beginning of a project."

Jones states emphatically, "I really believe it's the responsibility of the producer to push the trend. But that involves literally fighting with the labels and saying, 'No, I don't think you want to really do this, because by the time you release this, it's going to be six months later, and it's not going to be happening.' But you have to be innovative: you have to give something to the production rather than just make money with it. Any competent producer can take a hit and knock it off, but it takes a real songwriter and a real producer to take it to the next level, to start a new trend, to bust out. And it's so hard to walk that line, but it's more commendable to take a chance. It might be harder and you might not be getting gigs left and right, but your career will have a lot more longevity, *á la* Mutt Lange. He just keeps continuing — whatever genre he needs to be in, he's in it. If you don't look at it as, 'I want to be paid,' but you look at it as, 'I'm trying to build a career here,' that's the road you need to take."

I think the bar has been raised. If you listen to New Kids versus 'N Sync, even though they slot similarly, due to the technology, the production is times-a-hundred, the vocals are times-a-hundred."

Ah, the magic word: technology. Most of the producers we talked with felt strongly that the rise of the project studio over the past decade has had a major impact not only on the sound of today's records, but on the increased importance of the producer. As Serletic puts it, "These kids, working with the gear, hearing the world of sound that they can create,

seeing these walls come down in their own bedrooms — they can dream of letting the world hear what they're doing."

In other words, the studio itself has become this generation's instrument, their version of the electric guitar.

"Absolutely," Serletic asserts. "The electric guitar really put rock 'n' roll on the map, because everybody took them home and started to woodshed, realizing, wow, I can play these three-chord rock songs, just like Elvis, just like Chuck Berry. Today, the technology has put the studio itself in the hands of everybody, so everybody can start aspiring to that position."

Indeed, there's a whole new generation of musicians coming up that have made a conscious decision to forge careers as producers rather than as artists. Serletic has a theory as to why this is increasingly prevalent: "It's because there's been enough attention shown about producers, and a respect built up. There are a lot of people that gravitate to that role of being involved but being sort of mysterious. There's a sort of romanticism in the public's mind about the producer, and people tend to want to be producers even before they know what it really is — just like people want to be guitar players before they know what that really involves."

> "MORE AND MORE RECORD COMPANIES DON'T EVEN WANT TO DO RECORDING DEALS WITH ARTISTS UNLESS THEY HAVE A PRODUCER."
> —RODNEY JERKINS

Or, as Kelley's partner Bob Robinson puts it, "Another generation of producers is coming around and another generation of artists, and it's going to be a generation of self-contained producers, like us — guys that are producing and also writing their own songs and doing all the arrangements. I think it's really just a matter of it coming back around again, just like musicianship is coming back around thanks to artists that al-

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Sammy Peralta loves music. That pure and simple fact comes through strikingly clear as he sits at his keyboard tinkering with half-written tunes. Sammy's background includes work with talents including Tito Puente and Willie Bermudez. "I have to be careful because I can get so lost in the music, I sometimes forget I have a family that would like a little of my attention too".

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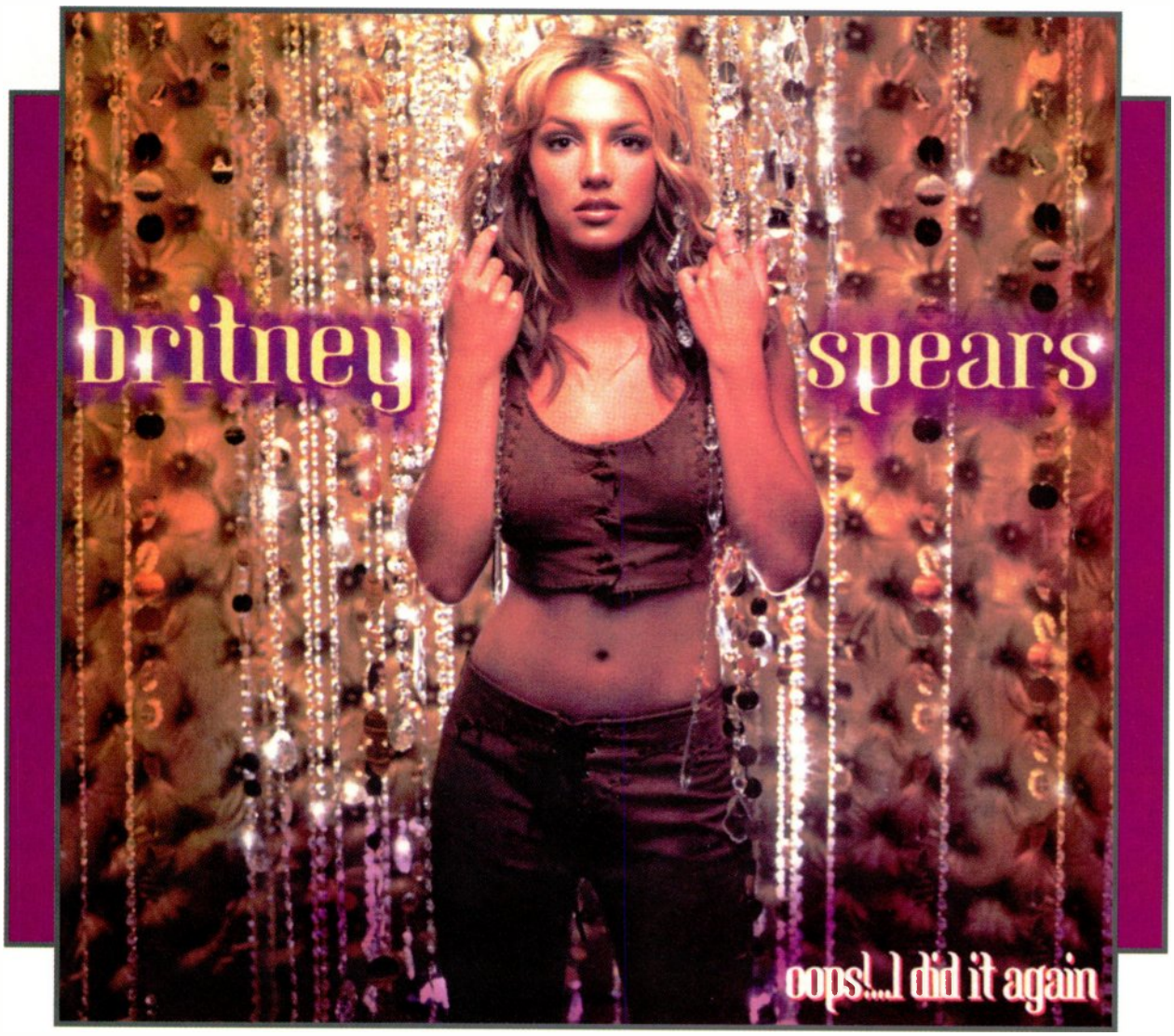
low people to feel comfortable hearing real music again — hearing more melodies and more changes.

"We haven't chosen to try to do the artist thing," he adds, "because we love working with different types of artists so much. Our first love is production. Not that one day we wouldn't want be onstage and run around with some guitars and basses and be silly on stage...." [*Laughs.*]

One of the hottest producers on the scene right now is Rodney Jerkins, who, at the tender age of 23, has already become a major force in the industry, minting pure platinum with artists such as Destiny's Child, Brandy, Monica, Will Smith, and Mary J. Blige. "I think it's to the benefit of today's producers that we have this technology, that it's so far advanced of what it was. I'm 23, and it's even changed since *I* started. It just keeps going; it's phenomenal the way the technology has moved in the last four or five years. We have more sources to use, we have more tools than ever before."

But Foster also sees a downside to the impact of technology. "To think that you can buy two thousand dollars' worth of gear now and make a record in your bedroom is just astounding. However, the days of going out and playing in clubs and learning your instrument are gone. I remember, years ago, a programmer I was working with came in, and what he brought to work was a bunch of vinyl LPs, marked by tape, and that was his programming! Every time I suggested a beat, he'd say, "Oh yeah, so-and-so, track three, cut whatever, check this beat out." And all he did was go to records — it was unbelievable! [*Laughs.*] And it was good, so you can't take his talent away, but it's kind of a shame. It's like kids learning to tell time digitally now instead of big hand, little hand."

Another important factor in the rise of the producer today is economics. Kelley explains: "A record company usually doesn't want to lose on their investment, so they look for people that can make hits. Why gamble when you can just pay people like us to help kick-start a new artist, give them a direction, and act as a training wheel, so to speak? That way, by the second and third album,



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they kind of understand the business, what it takes to be a star, what it takes to be on the radio, all that little stuff that new artists are not even thinking about. All they want to do is just sing and do some music, but they don't understand it's deeper than that, it goes all the way down to the mix: your kick and your snare have to be perfect for it to be a smash hit — that's just how it is. We're grinding and we're doing it every day, so the record companies look toward people like us, Rodney Jerkins, Dallas Austin — people that know what it takes to make a radio song, versus a new artist that doesn't have a clue."

Jerkins adds, "Even if the artist doesn't have the best budget in the world, the president [of the label] will up the budget just to get that one hit song from us that they think will take them over the top. And more and more record companies don't even want to do recording deals with artists unless they have a producer. It can be the most incredible singer in the world and they can go to a record company and get turned down. But if I take it to the same record company, they'll say, 'Yeah, let's do the deal,' just because there's more of a guarantee that their project will be produced well."

Foster couldn't agree more: "I run a record company, and I know that when *I* see a singer I love, the first thing I think of is, 'Who can I get to produce this record if not me?' And a lot of times I'm not the right producer for the project, or I'm right for only a part of it. So that's the biggest question. When an artist comes to you and their demos are great and they walk in the room with a producer of some note — or even if he is not well-known but you love the demos that he's made — God, you're so much further ahead because that's something you don't have to go looking for. Finding producers that can make great records is as hard as finding great songs and great singers."

Certainly, the specter of Internet distribution is a huge factor here, as well. Jones: "The downloads, where kids are making their own compilations, are really killing record sales; it's easily taking away 20% [of sales]. I think it's going to have to curve back to really good albums over the next year. These new kiosks, where you can compile all the singles you want on one disc — they're really going to make the labels go funk. They're going to have to put hit after hit after hit on a record, which most record companies can't afford to do with a new artist. At the current rate that producers charge, can most artists afford to have five tracks done by She'kspere, three tracks by Rodney [Jerkins], and three tracks by Max Martin? No way.

"Right now, it's all about radio. Radio spins are harder than they've ever been, record sales are harder than they've ever been. That's why they [A&R men] are going for that one shot in the dark, that one 'Livin' La Vida Loca.' Because from that one hit you can sell five million albums; in the past, you couldn't do that. What happened is that the consumer got smart; Virgin and Blockbuster and all these companies started allowing the consumer

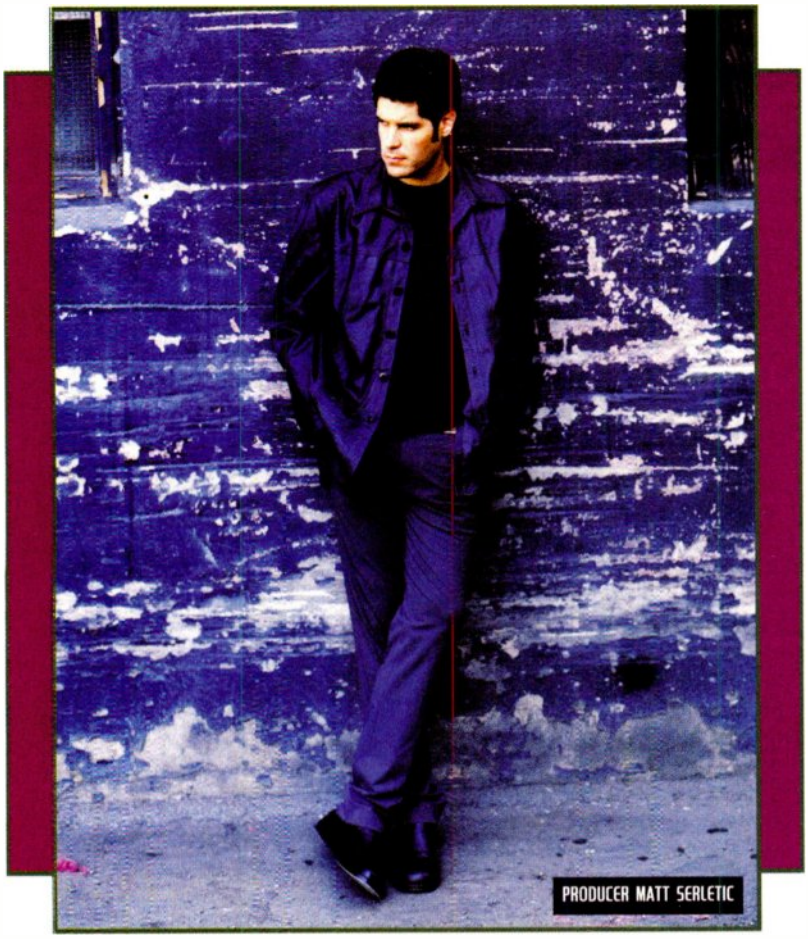
TAILORING SONGS

All of the producers interviewed for this article are also songwriters, and they all agree that one of the keys to making a hit record is to tailor the song to the artist. How exactly do they go about doing that?

Afanasieff begins by bringing a historical perspective. "There are two schools of songwriting," he explains. "One is the old 'Brill Building' school, where people sit around writing songs and stockpiling them and then the publishing company tries to place the songs wherever they can. The other way is to custom-tailor your songwriting to the artist that you're producing, which is what I do. When I know I have a project coming up, I go in and I write for the artist. I never, ever stockpile a song. And there's nothing better than that, because I just totally become one with the person that I'm producing.

"Ultimately," he adds, "it would be nice to write a song for an artist where there are no boundaries, no rules, no regulations. But nowadays we unfortunately have to try to meet the criteria of what a hit song should be; we have to aim at chart position, selling to the general public. I would love to write five-, six-, or seven-minute songs, but I can't; I've got to try to get it into the four-minute area. But in addition to that, what I look for is something that makes the artist sound the best they possibly can, even if it means influencing them into a direction that they might not even have yet. In other words, with my songwriting, I can maybe take that person and kind of steer them a little bit off the course that they're on into a better course. But I would never try to hide an artist's weaknesses; I would always try to enforce their strengths. You just set out to a write a song for the artist's strongest points, and you consider how you can get that across in four minutes."

Like Afanasieff, Tim and Bob don't believe in stockpiling songs ("We like to just come in from scratch with nothing; it comes out a lot better when we do that.") In other ways, though, Kelley feels that he and Robinson take an old-school approach toward songwriting. "We find out what's out there, what's being played on the radio, and what's not out there, so we can blend the two in a way. Then we take a look at the artist that we're working with and see what they can do well and what they can't do. Finally, we try to come up with a sound for them; we go in and dig deep into a lot of different sounds. We've been doing this for so long together, sometimes we're actually writing a song while we're putting the track together." He concludes, "The only way you can make an artist be themselves is you've got to get inside them and you've got to understand who they are, the things they've been through in their life. They can't just come in and record *anything*; even though it might be a great song or a great hit, it might not match them."


PRODUCER MATT SERLETIC

to preview the album at the store, which really caused a drop in sales. If you watch the charts, you'll notice that a lot more people are releasing radio singles but no retail [singles]. It's causing the fan to buy the album — even if it just has one track that they like, they have to buy the whole album. In the past, the labels could just put out one song that was good and even if the album wasn't very good, they'd sell a lot of singles. Then they'd put out a second single, really build on it. But there's no [artist] development anymore. It's not like when Prince came out and Warner stuck by him for three years until he had that really big breakout record."

Jones further sees the rise of the producer as resulting in a whole new category that he terms the "recording *entertainer*," as opposed to the recording *artist*. As he puts it, "New Kids and New Edition were entertainers. Were they artists? No. Kurt Kobain, Nirvana: artists. But now we have Britney, Mandy: entertainers. And one thing I always found strange was that through that whole [indie] thing, there was always a Madonna, a Michael Jackson, a Janet Jackson — people that were just entertainers, but they still had the credibility of the street. It seems like there's always one artist that can kind of straddle that entertainer thing and that credibility thing. Today, the only new artist that I think is really close to doing it — and this might sound cheesy — is 'N Sync. I do a lot of hip-hop stuff, and those guys all think 'N Sync is the bomb. The first time I heard that, I was really surprised. They may actually have the credibility of the urban community, the street, the sense of being cool."

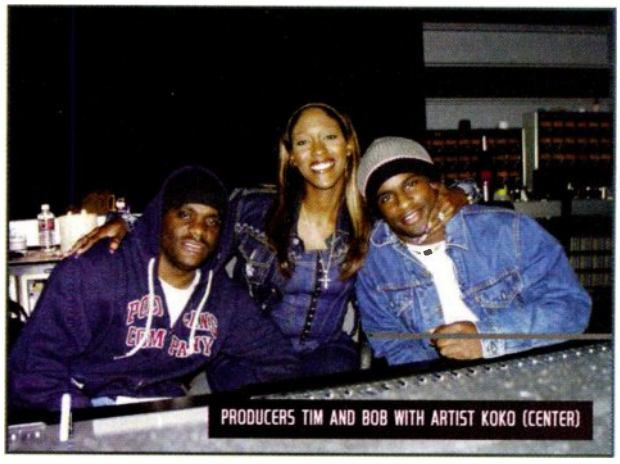
Can a producer really impart credibility to an artist? With disarming candor, Afanasieff cites Janet Jackson's *Control* album as being "the highest, purest form of what we're talking about here. You've got Jimmy Jam and Terry Lewis, who've taken this singer who really doesn't have a good voice whatsoever and made her an incredibly huge star by writing and producing the crap out of her on this first offering! And it's just mind-boggling that these two guys did what neither she nor anyone else in the world would have been able to do."

TALK ABOUT...

POP MUSIC

How much input does this new generation of producers actually allow the artist to have? "It all depends on their talent," says Kelley. "If they can actually write, then we have no problem with collaborating. It actually makes it a lot easier if they have something to say. But 70 or 80% of the time, a new artist can't write. They may have a lot of talent, but they haven't harnessed it yet. We like it when the artist is actually right there in the studio with us as we're writing, but from day one we've always been self-contained, from playing all the instruments to doing all the vocal arrangements and writing all the lyrics. We have ears for that because this is what we do all day, every day. Artists come in and they sing; that's what they do everyday. When everybody has their role and they do their job and not try to interfere with anything else — that's usually when it comes out really good." Afanasieff: "If I'm co-writing with the singer, they know what the arrangement is, because that's how we wrote it. Then it's up to them to say, 'This is great' or 'No, it's not good enough,' or whatever. But usually I like to do everything all by myself and give it to the singer, and usually I believe in what I do enough to know that it's going to work at the end of the day, that they're going to love it. Sometimes there's an element of surprise that doesn't work in my favor — sometimes the artist will say, 'I like it so much that I want it twice as long,' or 'Do you think we can change keys at the end?' Then it's a matter of going back to the computers and rearranging things. But for the most part I like to have everything pretty much done before the singer sets foot in the studio."

Serletic likens his role to that of a film director, pointing out that "you're involved in the molding the perfor-



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mances of these amazing talents, bringing the best out of them, and putting that in a context that, in some ways, at some point, is only known to you. Until it's done, the film director or the record producer is really the only person that has the entire picture in the mind's eye." He also makes the observation that the producer's function is very different from that of the songwriter, making it difficult to meld the two together: "As a producer, you're very much functioning as a critic, tearing songs apart and making suggestions to make things better. But as a writer or co-writer, you're in the creative mode; it's more of an output mode. It's always a trick as a songwriter to not let yourself be too much of a producer! You end up saying to yourself as you're sitting there at the piano, 'Nah, that's not that good, what if I changed this?' Meanwhile, you're ripping apart your own song that you haven't even written yet!" [*Laughs.*]

All of this, of course, begs the question as to whether the increased role of the producer has somehow decreased the importance of the artist — something that Afanasieff feels may have already started to happen. "To a degree, that can be the case," he says. "Sometimes you can find an artist being a product of a machine that is headed by a producer or a management company or an entrepreneurial organization. All of these boy bands that are out right now, they didn't create themselves. Somebody picked them, chose them, auditioned them, put them together, wrote for them, picked producers for them, and then left it in the hands of those producers. I think that that is a very clear example of how the producer and songwriter's role greatly overshadows the artist's role, although the artist then takes what they've done and pretty much makes it their own."

But Serletic disagrees, stating flatly that, "The increased awareness of the producer in no way affects the importance of an artist; artistic people are still at the center of what the music business is about. At the end of the day it's still about the artist, the person who goes out and tours and lets people participate in their artistic lives. And

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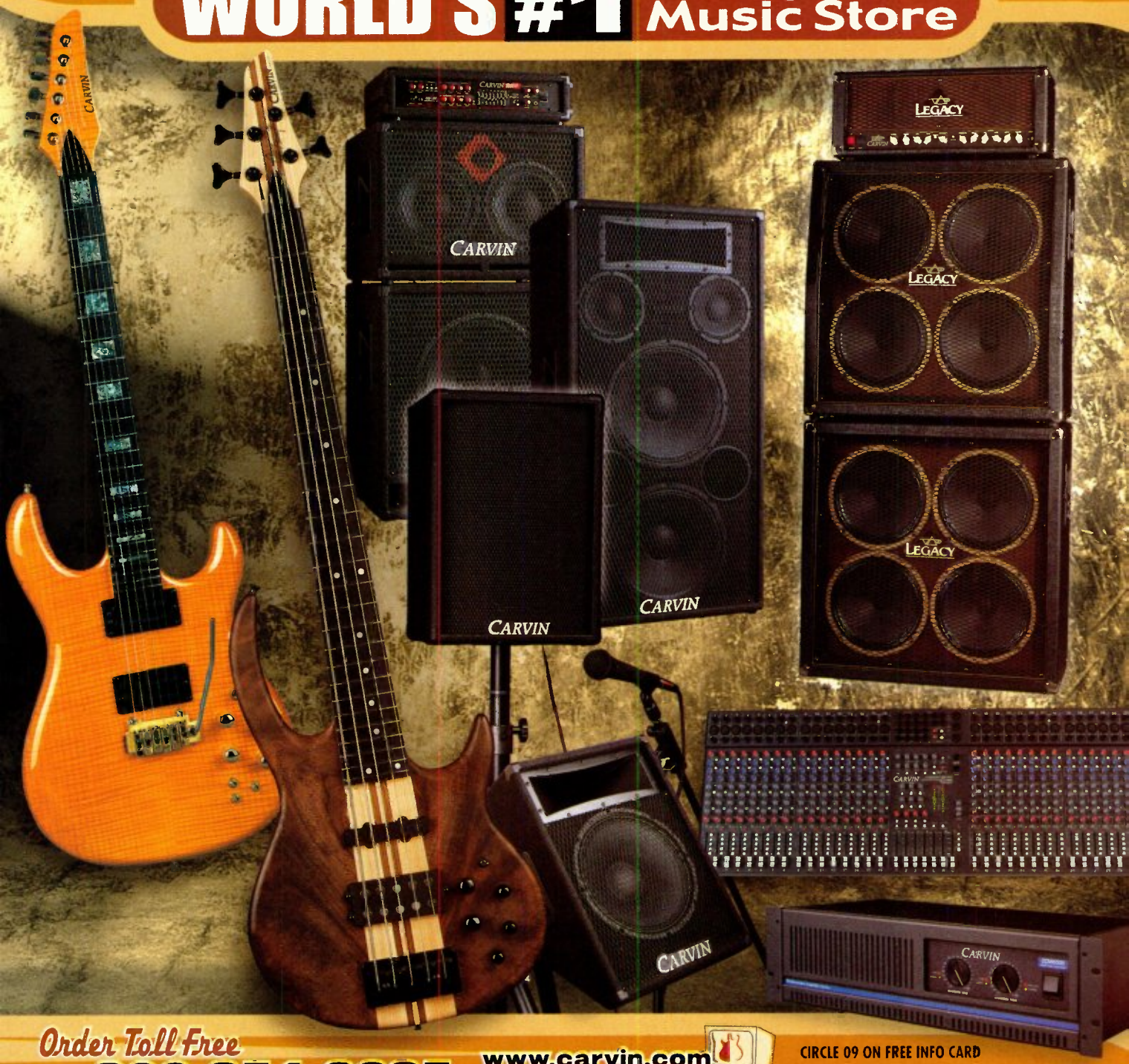

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POP MUSIC

that's somewhat separate from what a producer does, because a producer will shift projects. They definitely will live the vision of the project, but they will sort of uproot, clear their heads, and jump into another one, whereas artists are people that have followed one path and explored it to their fullest extent." Adds Foster, "To the public, the artist is still the star. Most people — maybe not *EQ* readers, but most of the public — believe that singers do one take and write all their own songs. That's just the way it is."

One irony of the whole producer-as-chief-cook-and-bottlewasher phenomenon is that of stereotyping; like character actors on a hit TV series, producers can find themselves pigeonholed and constantly trying to compete against their own success. As Jerkins points out, "Once you set a standard of making hit records, everybody expects a hit. You can't just write a nice song that may be just a soothing song for a person to listen to at night, or a happy song for a person to listen to when they're going through problems. You have to focus and make sure every song is close to a hit, if not a hit. That's a lot of pressure. If you mess up, everybody's turning their back on you, saying, 'What happened? We counted on you for this.' It's like basketball in a sense: When Michael Jordan played, I'm sure the Bulls counted on him to make that last shot at the buzzer. If he missed, they would be, like, 'Oh my God, he failed us.' So producers have become like the Michael Jordans in a sense; we have to bring the whole thing home. If we don't make that bucket or make that shot, we all lose: the record company loses and the artist loses. So it's a lot of pressure, and you have to be confident enough to know that you can do it and pull through."

Jones makes the point that, "Since my work with Mandy, I'm a victim of my own thing. If I don't keep doing that, I can't continue to get singles on people. It's a double-edged sword. If I still want to keep knocking my own song off, I'll work for a couple of years. But then what happens when that's over, when I'm over? I come from much more of the Glen Ballard school of music, where you make pop songs in the genre that they belong to, and they stand alone by themselves; you don't go and just knock your own song off indefinitely.

"I just won't do it: I won't knock myself off," Jones concludes, with maturity and resolve that belies his relative youth. "I could work every single day just doing these little frigging pop jammies — they're almost like little commercials. I could do that every single day of the week, but I've refused to do that in order to try to force the music to evolve. I think that's more important than just making money and making the label people money. There's a happy medium between making pop music and making cool music."

At the end of the day, is the idea to make a great record or a hit record? Or can the two co-exist? Matt Serletic thinks so. "I really believe that the studio is a sort of sacred place; I try to treat it as such, and commercialism is not really a part of that. It really is about creating great music, and, to me, the definition of a hit is just music you want to hear, in the most basic sense. Your job is to say, 'This sounds great, this is what I want to hear,' in whatever context that might be; that's part of the talent of being a producer. Sure, when you walk out the door, you might say, 'Wow, we've got a hit!' [*Laughs.*] But in the studio it's all about making great records, lasting records that have something important to say. If you do that, I believe the commercial success will follow; it's worked pretty amazingly well for me so far. I really studiously avoid thinking, 'If I do this, that will make it a hit.' I've never done that, and I hope I never will."

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>
> —WALTER AFANASIEFF

Special thanks to Geoff Boucher, Matthew Freeman, Deborah Radel, Jessica Brenner, Dave Olivier, and the folks at Tonos.com for their assistance in preparing this article.

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For more information on David Foster, Matt Serletic, and Rodney Jerkins, visit www.tonos.com.

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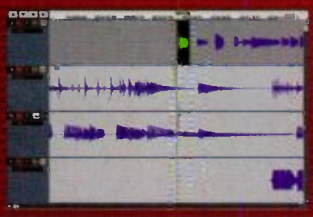

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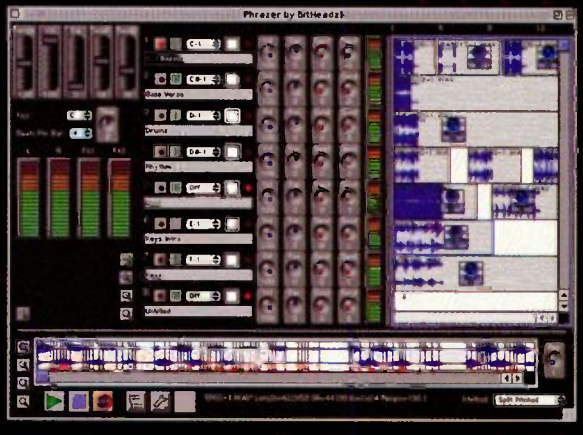

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SURROUND SOUND IN THE PROJECT STUDIO PART III

BY HOWARD MASSEY

In the previous two installments of this surround sound primer, we discussed equipment requirements, interconnection options, speaker placement and calibration, bass management, downmixing, encode monitoring, and other important technical topics. This month, we wrap things up with a close-up view of the aesthetics of surround sound mixing.

THE FINAL INSTALLMENT IN OUR SERIES ON BRINGING YOUR PROJECT STUDIO INTO THE SURROUND SOUND ERA

THE MIX

The best way to learn about surround sound mixing is to listen to some of the work that's out there. The least expensive way to do that is to buy a DVD player that has built-in Dolby Digital and DTS decoders (make sure it has both) or one that has a digital output that can be connected to an external decoder. You'll be able to find lots of DVD players and decoders that fit the bill from manufacturers including Panasonic, Pioneer, Yamaha, and others, with a list price of around $400. If budget permits, you can spring for a more expensive — but considerably more full-featured — audiophile decoder such as the Lexicon DC-2. There are, of course, hundreds of DVD-Video discs to choose from — including lots of music-oriented titles. But you may not be aware that there are also dozens of DTS-encoded audio CDs available (they're harder to find and somewhat more expensive — $25 or so — than standard audio CDs; one good source is **www.dtsonline.com**). Among the selection currently available are Sting's *Brand New Day*, Steely Dan's *Gaucho*, and the Eagles *Hell Freezes Over* (all remixed by Elliot Scheiner), Lyle Lovett's *Joshua Judges Ruth* (co-produced, engineered, and remixed by George Massenburg — this one's a personal favorite of mine), *Boyz II Men II* (a Bob Margouleff remix), and classic titles from artists as diverse as Eric Clapton, Paul McCartney, Vince Gill, Chick Corea, and Patrick Leonard.

What you'll hear on all these surround sound products is not only a new degree of spaciousness — which is to be expected — but also a great deal of clarity. The explanation for this is simple: By spreading a complex musical signal among six speakers instead of just two, you're not asking each individual speaker to work as hard. As a result, each sound wave is generated with fewer frequency components and correspondingly fewer phase cancellations.

You'll also hear a lot of different artistic approaches. In many live performance mixes, the rear channels carry ambient room information only, making you feel like you're sitting in the audience watching a performance onstage, with only some back-wall reflections coming from behind you. In others, the instruments and vocals are panned all around you, making you feel like you're sitting onstage in the middle of the band. Some remixes of all-studio recordings take a very clinical, static approach, where each instrument sits stubbornly in its own space from start to finish. Others — particularly more experimental recordings such as Alan Parsons's DTS-encoded *On Air* — feature audio that is fluid and moving, with constant sonic surprises springing up all around you.

Another advantage of listening to surround sound releases is that it gives you the benefit of 20/20 hindsight. Veteran producer/engineer Elliot Scheiner recalls that "the Eagles *Hell Freezes Over* surround mix was my first one, and I experimented tremendously at their expense. I realized after the fact that I made a couple of mistakes in there that I haven't done since, like dedicating the vocal to the center speaker; that's a bad thing." Most surround veterans agree that the center channel is the most difficult one to deal with aesthetically. In particular, if you succumb to the temptation to place the lead vocal there and nowhere else, you're giving the end listener the opportunity to play karoake with your hard-won surround mix, or, potentially worse yet, to solo a less-than-stellar lead vocal for the amusement of friends and family (something that is sure to displease most lead singers). Scheiner again: "In the *Gaucho* 5.1 remix, I sent the vocal to the center speaker as well as left and right. Now what I'm doing is sending the vocal to left and right, and just bare minimum in the center. I use the center channel for just a little bit of vocal, a little bit of snare drum, sometimes just a little bit of kick drum, and that's about it."

The subwoofer channel can also be problematic, especially if you send it signal from too many different sources. While both the Dolby Digital and DTS encoding processes utilize low-pass filters to prevent the subwoofer from receiving full-range signal, it still should be used carefully and

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selectively. The onboard surround mix capabilities of many digital mixers allow you to independently set the subwoofer level for each channel; this is really helpful in taming over-aggressive mixes. For example, you can get greater separation between the kick drum and the bass if you send just one and not both to the subwoofer (in addition to sending it to one or more of the main speakers — it's probably a good idea to never *completely* rely on either the subwoofer or center channel, because these components can be woefully inadequate in some consumer systems).

These considerations aside, there really are no rules, so your creativity can — and should — run rampant. For example, try assigning a short reverb with a slight predelay to the front left-right speakers and a longer reverb with a longer predelay to the rear speakers (setting up different reverb parameters *decorrelates* the two reverbs — an important consideration when doing surround mixing with stereo reverbs). Then drive it with a snare drum sample assigned solely to the center speaker. The crack of the snare will appear to come from between your eyes, then quickly spread out first in front of you, then behind you. Or send one guitar track to the front left and rear right speakers at slightly different levels, and a doubling track to the front right and rear left speakers.

> MOST SURROUND VETERANS AGREE THAT THE CENTER CHANNEL IS THE MOST DIFFICULT ONE TO DEAL WITH AESTHETICALLY. IN PARTICULAR, IF YOU SUCCUMB TO THE TEMPTATION TO PLACE THE LEAD VOCAL THERE AND NOWHERE ELSE, YOU'RE GIVING THE END LISTENER THE OPPORTUNITY TO PLAY KAROAKE WITH YOUR HARD-WON SURROUND MIX, OR, POTENTIALLY WORSE YET, TO SOLO A LESS-THAN-STELLAR LEAD VOCAL FOR THE AMUSEMENT OF FRIENDS AND FAMILY.

Of course, you can always use your mixer's panpots to place signal half-left or half-right, but if your mixing console is fully equipped for surround mixing, it will allow independent panning between any of the busses. This will enable you to do things such as pulling a sound toward the listener by panning it slightly in the rear speakers or placing a sound halfway between the left front and left rear speakers so that it almost appears alongside you. (Because of the physiology of human hearing, phantom images on the side or in the rear are, however, much less stable than the phantom center directly in front of you.) Some consoles allow you to move a sound dynamically through the surround space, either by drawing it freehand or through a preset straight line, arc, or circle; this information can then be captured and included in your automated mix. One caveat is that nasty comb filtering effects (due to phase cancellation) can occur if you go too crazy with this stuff — especially if you stray too near dead center — so use dynamic panning judiciously. One trick is to reduce the number of point sources by selectively turning off busses so that a dynamically panned signal is only present in two or three speakers instead of all five.

EFFECTS

The first generation of multichannel digital reverbs are just starting to appear — products like Lexicon's 960L, TC Electronic's System 6000, Sony's DRE-S777, Eventide's Orville, and Kind of Loud's RealVerb 5.1 Pro Tools plug-in. Surround reverb support for Steinberg's Nuendo platform is also starting to appear in the form of Steinberg's own Surround Edition plug-in bundle and TC Works SurroundVerb plug-in. These open up a whole new world of creative possibilities by allowing you to set up a complete reverberant surround space and placing or moving a signal within it — the virtual equivalent to placing or moving a singer or an instrument in a real

WEBLINK

Web-surfers can find extensive information on surround sound at www.dolby.com/digital/, www.dtsonline.com, www.tmhlabs.com, www.surroundassociates.com, and www.RobertMargouleff.com.

room. The control offered by these devices is nothing short of astonishing — for example, *RealVerb 5.1* allows you to not only independently control the early and late reflections as well as perceived source position, it also allows you to select room shapes and sizes. What's more, you can select from a palette of 36 different wall materials and morph between materials at specified thicknesses — even morph between different rooms as if you were walking out of a cramped elevator into a huge lobby. Multichannel compressors, equalizers, and other processors are also beginning to put in appearances. It's probably not too great of a stretch to predict that we'll someday be looking back on the era of stereo processors with a mixture of nostalgia and pity for the poor engineers that only had two channels at a time to work with.

OPPORTUNITY AWAITS

This is all heady stuff, to be sure, but, hey, it's a new millennium — it's about time the world of recorded music got a major facelift. If there ever was an opportunity for today's musician to get in on the ground floor and take total control of his or her music, this is it. In the words of Elliot Scheiner, "Surround sound is the future, absolutely the future. When I did the Fleetwood Mac surround remix, none of those guys came down to the studio to hear what I was doing. On the very last day, I begged them to come down after rehearsal — they were getting ready to go out on tour — so they all came down, and I put up one of the songs and they sat there listening. And their mouths dropped. After it was over, Lindsay [Buckingham] said, 'I don't think I'll ever be able to listen in stereo again.'" Neither will you.

Howard Massey heads up Workaday World Productions, a full-service surround sound project studio. He is also the software reviews editor for *Surround Professional* magazine. Special thanks to Tomlinson Holman, Bob Margouleff, Chuck Ainlay, Elliot Scheiner, George Massenburg, Will Eggleston, Richard Elen, Peter Chaikin, Buzz Goddard, and Suz Howell for their assistance in preparing this article.

InREVIEW

TABLE OF CONTENTS

Minnetonka Audio Software SurCode CD Professional

DTS-format surround encoding software for Windows

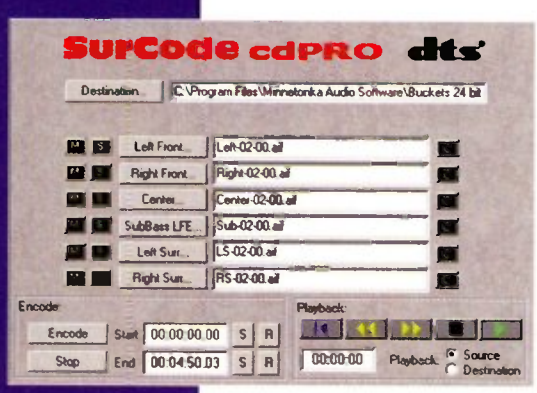
One of the dilemmas facing project studios interested in venturing into the 5.1 surround production world is how to deliver the final surround mixes to end listeners. Unless your production budget allows you to send the audio off to a mastering lab and/or a DVD authoring house, there aren't many options. One solution has been to encode the audio using DTS's proprietary system, and then burn it onto CD. Consumers with DTS-capable systems can then hear the sound in all its 5.1 glory. While this is a workable solution, DTS's encoders haven't been readily available to most project studios. That all changes with Minnetonka Audio Software's SurCode CD Professional for Windows.

SurCode CD Pro is a licensed version of DTS's digital surround encoder; it lets you squash a 5.1 mix into a stereo WAV file. From there it can be burned to an audio-style CD-R using any audio CD burning program. The result is really a data CD, not an audio CD — to play back DTS-encoded CDs, you'll need a CD player with a digital output and a DTS-capable decoder, or a DVD player with DTS support (note that not all DVD players can read CD-Rs).

The Basics

SurCode supports Windows 95, 98, or NT. Although Windows 2000 isn't specifically listed, that's what I used the program with on my Dell PC; the program installed and worked fine. There's no mention in the manual, on the program CD, or on the Minnetonka Audio Web site of system requirements. Assumedly, a computer capable of running whatever version of Windows you might have is all that's required.

Similarly, the manual is skimpy on details. For example, all you're told about file formats is that WAV and AIF formats are supported. But no info is given regarding sample rates or resolutions. Through trial and error, I determined that SurCode supports 16- and 24-bit resolutions for both WAV and AIF, but only 44.1 kHz sample



MINNETONKA AUDIO SOFTWARE

MANUFACTURER: Minnetonka Audio Software, Inc., 17113 Minnetonka Boulevard, Suite 300, Minnetonka, MN 55345. Tel: 952-449-6481. Web: **www.minnetonkaaudio.com**.

SUMMARY: A simple-to-use application that allows delivery of DTS-encoded 5.1 surround mixes on standard CDs.

STRENGTHS: Very easy to use. Minimal audio coloration from the encode process.

WEAKNESSES: Can't preview encoded file. Hardware dongle copy protection. Limited documentation.

VERSION REVIEWED: 1.0.9

PRICE: $499 **EQ FREE LIT. #:** 116

rates. (The company tells me that SurCode also supports 32-bit floating point WAV files.) On the plus side, the manual does cover the encoding process in clear terms.

The software uses a hardware dongle for copy protection. In my case, I also have Steinberg's Nuendo (see review last issue) and Nuendo Surround Edition plug-ins installed; this requires three fat dongles stacked on one-another dangling from the back of my PC — yuck.

Encode

SurCode CD Pro is very easy to operate. The entire program lives in one window. Simply tell it where your six audio files (one corresponding to each of the six channels in the 5.1 surround mix) are located, where you want the encoded result file to end up, and hit "Encode" — that's it. You're also given the ability to change the start and end point of the audio files, and you can solo or mute the various audio channels. The only other user settings are those related to playback through your computer's sound card. You can save and recall the settings you've used to create a particular encoded surround master, in case you need to go back and make changes.

You're given the option to monitor either the original six audio files or to listen to the final encoded version. Unfortunately, you can't preview what the encoded version will sound like; you have to actually go through the encode process to hear the results of the process. Fortunately, encoding is fairly quick (I used a 733 MHz PIII with 256 MB of RAM for my tests), as it's important to compare the raw files and the final encoded version.

One minor complaint that will impact those transferring in raw files from a Mac (as I was in some cases): SurCode defaults to looking for WAV files each time you attempt to load one of the six input files. You have to tell it each time you select a file that you're looking for an AIF-format file. This is easy enough to do, but it would be nice if you could set a default file-format preference and save some mouse-clicks.

Another nice addition would be the ability to record the six surround channel stems to the PC's hard drive from within SurCode itself. This would be especially handy for those who mix their surround productions to a standalone multitrack such as an Alesis ADAT or TASCAM DA-88 and need a way to transfer them into the PC so that they can be loaded into SurCode. As it is, you have to have some other multitrack digital audio program to create the six stems. Granted, that's not what SurCode is about — it's an encoder, not digital multitrack software

▶ continued on page 123

WHAT IS DTS?

So SurCode CD Professional delivers 5.1 audio in DTS format. That's all well and good, but just what the heck is DTS?

There are two answers to that question. First, DTS (Digital Theater Systems) is a company that has a division that focuses on providing systems for delivering high-resolution multichannel audio for motion pictures. The company claims to have DTS playback equipment in over 16,000 movie theaters worldwide. The company also has a "consumer" division, which focuses on delivery of 5.1 surround sound into home theater environments. A new DTS format, DTS-ES Extended Surround (a "6.1" format), which adds a seventh speaker between the left and right rear speakers, has also recently been introduced and is beginning to be supported.

Second, DTS, the process, is a method for encoding 5.1 surround sound into what looks like normal stereo audio tracks — although those tracks contain encoded data, not playable audio. The company says that their encoding system, which uses less data compression and therefore takes up more space than some competing methods, results in higher fidelity output with increased realism, better dynamic range, better channel separation, and no dialog normalization. You can get hardware-based encoders, or software-based versions such as the Minnetonka Audio SurCode CD Professional reviewed here and Kind Of Loud's soon-to-be-released SmartCode Pro/DTS plug-in for the Pro Tools platform.

Because DTS is an encoding process, the end user must have a compatible decoder in his system in order to hear full the 5.1 surround audio. Some DVD players have decoders built-in, and offer a full complement of six analog outputs (left, center, right, left surround, right surround, and subwoofer or LFE). Others route DTS-encoded signals out digitally to an external processor for decoding and conversion to six analog outputs.

You can purchase DTS-encoded DVD movie titles as well as audio-only DTS-encoded CDs; the latter is what the SurCode CD Professional software reviewed here focuses on. One source for DTS-encoded titles is the online store at **www.dtsonline.com**; another source is **www.buy.com**.

By Craig Anderton • anderton@musicplayer.com

Steinberg Cubase VST/32 v5.01 Digital Audio Sequencer

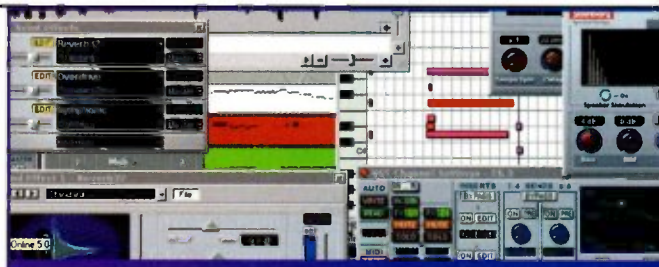
The latest version of Steinberg's audio/MIDI production powerhouse

I just love competition. Steinberg does something cool, then Emagic has to try to top it. So Emagic comes up with some great innovation, and it's Steinberg's turn to get back to the drawing board. Then MOTU steps in and sees what it can do to shake things up. Maybe this drives the companies crazy, but, as a consumer, I think it's great.

Which brings us to Cubase 5.0. It's a fairly major upgrade; furthermore, after years of the Windows version lagging behind the Mac version's feature set, the PC program not only incorporates the previous Mac-only features, but features new to 5.0 appeared on the PC version first. (V5.0 for the Mac was just released as of this writing.) This review covers VST/32, Steinberg's top-of-the-line offering.

Installation

Installation went smoothly. Copy protection consists of a printer port hardware dongle with serial number verification. After the program was on the hard drive, I ran a few of its audio performance tests on my Frontier Design Dakota interface card, which passed with flying colors for using all eight stereo pairs of the ADAT interface. Optimizing a system for digital audio is never easy, but Steinberg tries to make the process as simple as possible, and succeeds as much as anyone can. There's even a 20-page mini-manual dedicated solely to installation, along with a more lengthy document to get you started, and electronic documentation (in PDF format) that covers the details.



▶ STEINBERG CUBASE VST/32

MANUFACTURER: Steinberg, 21354 Nordhoff Suite 110, Chatsworth, CA 91311. Tel: 818-678-5100. Web: **www.steinberg.net** or **www.cubase.net**.

SUMMARY: This major revision provides more resolution, more plug-ins, a re-designed interface, and surprising stability for such an ambitious upgrade.

STRENGTHS: See sidebar, "Top Ten Reasons to Upgrade."

WEAKNESSES: Interface, while streamlined, could be a little more unified. MIDI controllers and automation don't follow notes when cutting, copying, etc. Audio engine somewhat less developed than some other programs.

PRICE: Cubase VST 5.0, $399; Cubase Score 5.0, $549; Cubase VST/32, $799. Upgrades are available for $149 to $449, depending on what program you're upgrading from and to; some of the upgrade price is refunded upon return of your old copy-protection dongle.

EQ FREE LIT. #: 117

If you have an older version on your hard drive, Cubase 5 doesn't overwrite it, but installs a separate folder. You have to de-install any older versions individually.

FIGURE1: Here's a good argument for upgrading to a big-screen monitor. Note the new look for plug-ins, the redesigned EQ panel in the lower right, colorized MIDI note velocities peeking out from the background, send effects panel that no longer has that clunky rack-mount look, the redesigned transport bar, and in the upper left, the audio editor.

MIDI Grows Up

Standout MIDI features include the MIDI mixer (similar to the VST mixer window) and Controller Editor. The mixer helps standardize the Cubase look so that mixing MIDI and audio events feels more or less interchangeable. The Controller Editor greatly simplifies editing and creating controller messages. This supplements the controller editor at the bottom of a Key Edit window, but can display multiple controller strips at once.

Notes can be colorized to indicate velocity (the default is blue to red, but the gradations are subtle — I'd recommend having a limited number of color ranges and making the differences as striking as possible). Also, the parts on the arranger screen now display more info (pitch, duration, controllers), similar to how Opcode's StudioVision handled this task.

The inspector has been beefed up, too,

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By Craig Anderton • anderton@musicplayer.com

with new parameters (randomize length/position/velocity/pitch, MIDI velocity limit, MIDI note limit, MIDI velocity filter, MIDI note filter, and MIDI velocity optimize). MIDI tracks can have additional "ghost" outputs; their ability to take advantage of the MIDI note limit parameter makes it easy to come up with complex splits. And I'd list what Steinberg claims as 300 new Score features, but suffice it to say, this area of the program has also been enhanced!

Interfacing

There are two great additions. Window Sets save particular screen layouts for later recall; even better, these are global, so you can generate templates that apply to any song (for example, optimized for mixing audio, optimized for recording MIDI, etc.). Another clutter-reducer, the Track Folder, lets you group multiple tracks into a single track. I like to put each drum part on its own track, but that often results in at least a dozen drum tracks that take up a lot of space. With folders, you can collapse those tracks into one, and, of course, open them back up again. Both these features are in the Mac version, but V5 marks their debut on the PC.

In fact, the whole arranger is more flexible — you can change the height of individual tracks, which is handy when you want to highlight, for example, a particular audio track. Parts can show names or events — longer names are allowed than the previous versions — and so on. No one feature is earth-shattering, but taken as a whole, they make a huge difference in making the arranging environment feel more fluid.

Part of the interface streamlining involves adding new functions for handling parts and arrangements. A selection range tool can grab arrangement selections *regardless of part boundaries*, which you can then cut, copy, paste, etc. The toolbox has additional items, such as a logical editor preset tool and a groove preset tool. This allows applying changes without having to go to the menu bar. There's a lot more dragging and dropping available, both from desktop to Cubase, and within Cubase editor windows.

And if you like Groove Quantize, you'll appreciate the improvements — grooves can last longer than a measure, you can audition changes in real time, and the degree of change caused by the groove is now variable.

I like using keyboard equivalents with sequencers, and V5 allows you to define shortcuts for just about any command. This alone can save a lot of time once

▶ continued on page 128

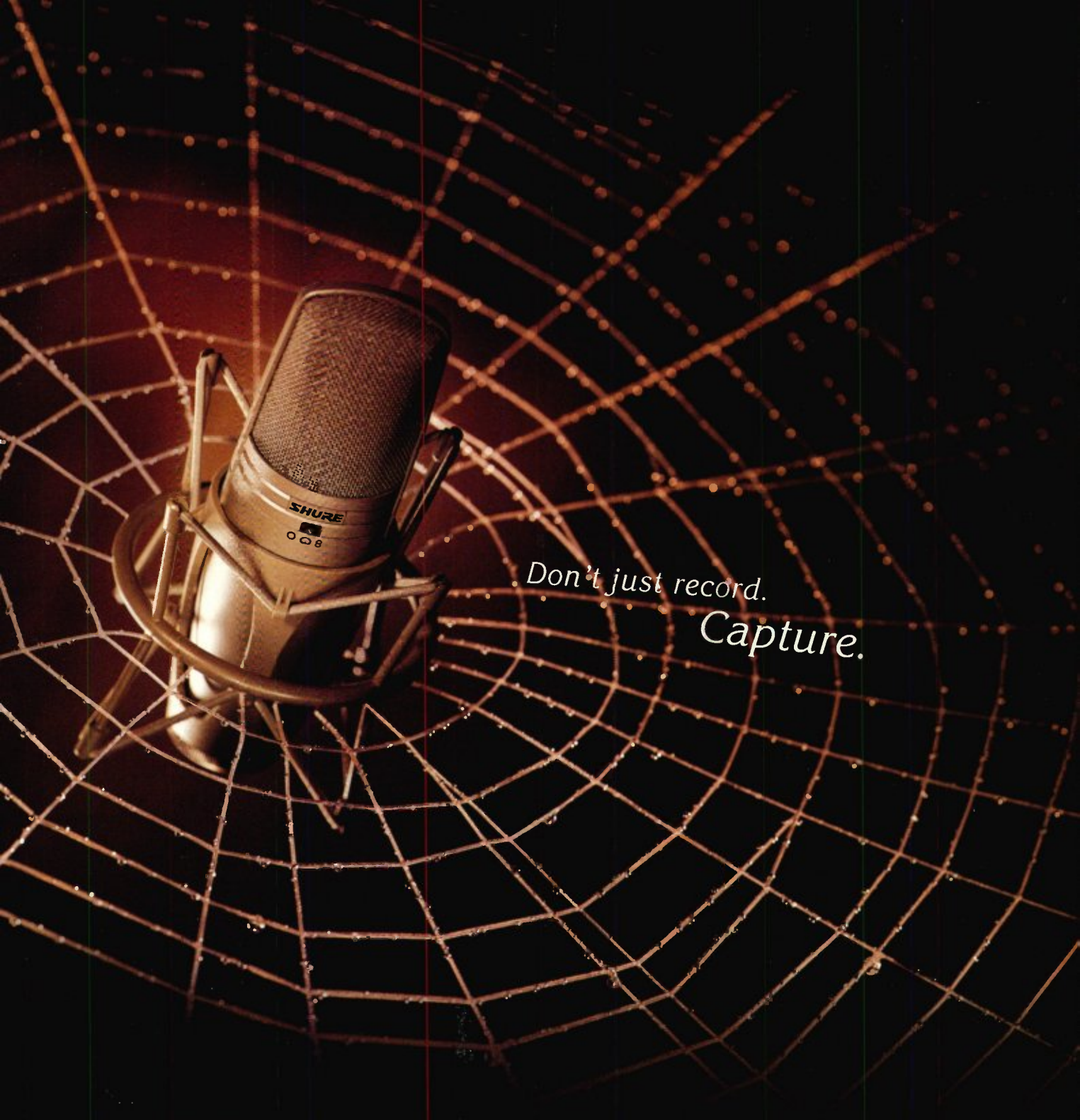
PLUGGING IN

The 15 new plug-ins are cool, but don't work with other VST-compatible programs (even Steinberg's own WaveLab). They've also undergone a bit of an "interfacelift"; older effects offer a resizable window, expandable to show as many sliders as there are parameters; newer plug-ins feature a more graphically rich look. (For example, the controls have a ring of "LEDs" that indicate settings at a glance; as you increase a control, the ring lights up, with higher-level LEDs burning more brightly.) Note that if you're updating from a previous version and have some older plug-ins sitting around, they get moved to their own folder so older files can still access them. Here's the roster:

Chopper2: Tremolo/autopan; can sync to song tempo.
Chorus: Standard Frequency and Delay, but with the option to have one, two, or three stages of chorusing to control the sound's "diffuseness."
Distortion: Sort of a cut-down version of one channel from the Quadrafuzz multiband distortion plug-in.
DoubleDelay: Dual delay lines, with pan controls for stereo placement. They must be synched to song tempo for the effect to be heard.
Dynamics: This is a plug-in version of the standard VST dynamics panel that it can be used with ReWire and VST instrument channels, as well as groups.
Karlette: Four-channel delay that emulates tape loop-style echo.
Metalizer2: Bandpass filter with feedback, sweepable by tempo-synchronized LFO
ModDelay: Single delay line (synchable to song tempo) with modulation.
Overdrive: A nice crunchifier.
Phaser: Pretty much standard issue, but with a sync to tempo option and stereo expander.
Reverb: Basically an updated version of the Wunderverb3.
Reverb32: Won't put Lexicon out of business, but useful if you don't stretch the tails out too long.
Symphonic: Combines a flanger/chorus with a stereo width expander and tempo-synchable autopanning; intended to go beyond the usual chorusing effects with stereo signals.
Tranceformer2: Ring modulator, also with tempo-sync LFO.
Wild Flanger: Typical flanger, but with a tempo-sync option.

TOP TEN REASONS TO UPGRADE

1. Apogee UV22 dithering algorithm for converting 24/32-bit files to 16-bit resolution.
2. Improved recording resolution: 16-, 24-, and 32-bit. These can be freely mixed among tracks.
3. TrueTape option (32-bit resolution only). This lets you crunch the audio just as if you were overloading analog tape…and it really works.
4. Several VST instruments (LM-9 drum machine, okay-sounding Universal Sound Module, Virtual Bass, and Neon synths).
5. Cleaner interface and menu structures.
6. Rocket Network-ready.
7. Timing resolution up to 15,360 ppq.
8. Built-in Fraunhofer MP3 encoder/decoder lets you import MP3 files into Cubase (they're converted to WAV format), as well as render audio to MP3.
9. Fifteen bundled plug-ins (proprietary to Cubase only) as well as better-sounding, redesigned EQ.
10. "Linear Time Base" high-accuracy MIDI timing when used with Steinberg's dedicated USB interface (not available for testing at the time of this review).



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By Steve La Cerra • slacerra@uemedia.com

Avalon Design AD2022 Dual Mono Class A Preamplifier

Does adjustable input impedance make for a great mic pre?

The newest member of Avalon Design's AD2000 Series, the AD2022 is a two-channel, fully discrete solid-state microphone preamplifier. The AD2022 shares lineage with Avalon's M5 mic pre, though the AD2022 employs a fully balanced signal path and its maximum output level is higher than that of the M5.

Perhaps most intriguing, each channel of the AD2022 features a five-position rotary switch for adjusting the input impedance. A balanced input transformer allows the load to be matched to the particular microphone in use. Though this concept has been largely overlooked in modern mic preamp design, it's interesting to note that manufacturers such as RCA produced mic preamps specifically matched to load their microphones correctly. As of this writing, there's only one other preamp I know of providing this feature (GT Electronics' VIPRE).

The Tour

Front-panel controls for each channel include stepped input gain and continuous output level knobs as well as 20 dB pad, phantom power, polarity reverse, and high-pass filter in/out switches. Two smaller knobs provide adjustment of the input impedance and high-pass filter turnover frequency. In addition to a large VU meter, each channel has a bi-color LED indicating green for signal present and red for +20 dB, which is 16 dB before clipping. A 1/4-inch TS jack allows direct injection of an instrument-level source. Blue LEDs for each channel indicate proper DC supply from the external power supply (included).

XLR jacks are provided on the rear panel for the mic inputs plus a pair of outputs for each channel. One of these is unbalanced, the other is electronically balanced; both outputs may be used simultaneously. The remaining connector is a four-pin XLR jack used to connect the AD2022 with the B2t power supply (the cable is included). This isn't a wall-wart or line-lump type supply — it's a small, solid metal box with a toroidal transformer and a detachable IEC power cable. Moving the supply outside of the audio chassis is said to reduce the chance of the power transformer inducing hum in audio lines, plus it dissipates heat more effectively. You will, however, need to give a bit of thought as to where in your rack the power supply will live. The fact that the B2t doesn't have a power switch made me a little uncomfortable, if only because "pulling the plug" on such an expensive unit didn't feel like the right thing to do.

AVALON DESIGN AD2022

MANUFACTURER: Avalon Design, PO Box 5976, San Clemente, CA 92673. Tel: 949-492-2000. Web: **www.avalondesign.com**

SUMMARY: Two-channel, discrete Class-A microphone preamplifier with DI.

STRENGTHS: Variable mic input impedance. Quiet. Transparent signal path. Excellent headroom. Easy operation.

WEAKNESSES: Remote power supply. Manual needs to furnish more information regarding variable impedance settings.

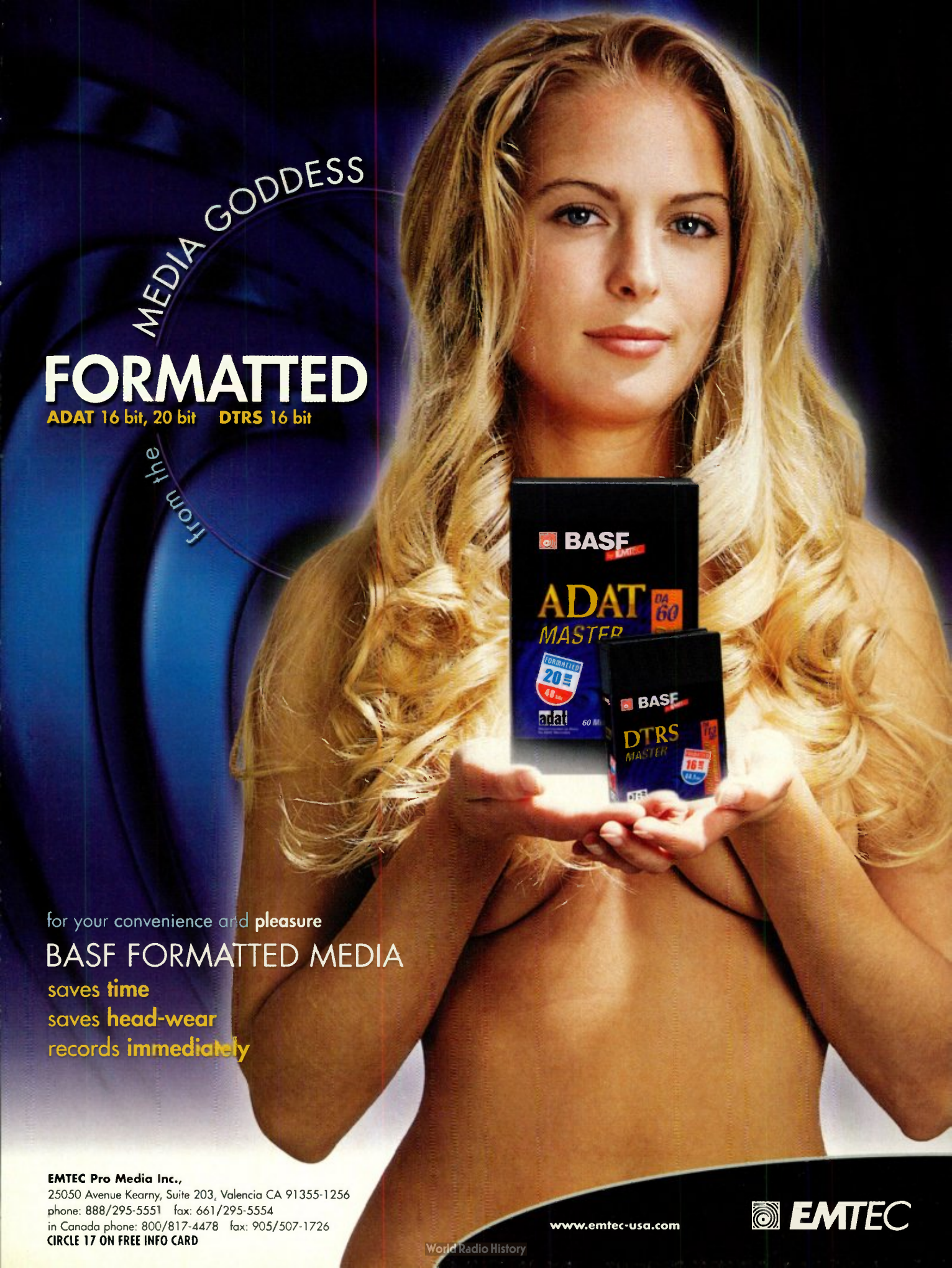
PRICE: $3,000

EQ FREE LIT. #: 118

With a quarter-inch-thick front panel and high-quality parts under the hood, it's obvious that the AD2022 is a serious piece of audio gear. Attention to detail is meticulous, as shown in the neat PCB layout, WIMA caps, sealed-silver relays on all push-button switches, and hex-head screws. Gain, output level, and filter pots all have an extremely smooth, solid feel, though the impedance select switches had a bit of play to them.

Plugged In

I used the AD2022 with a variety of microphones, including a Neumann U 87, KM 84, and TLM 103; beyerdynamic M88, RCA 44BX, Sennheiser MKH404, Audix D1, D2, and D4; CAD Equitek E-350, and Shure SM57. All of these mics benefited from use of the AD2022. I was hoping that the AD2022 might share the M5's low-frequency extension, and I was not disappointed. Kick drum through the Audix D4 was massive, with a bottom octave most pres just don't dig deep enough to capture. The AD2022 generated very little noise, increasing the useability of my U 87 (which is the "original" flavor, not the newer "a" version) and the KM 84. In fact the KM 84 never sounded better on acoustic guitar, reproducing a high degree of "you-are-there"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with plenty of wood and a natural shimmer to the strings. There's a lot of headroom available from the AD2022. I often slammed the VU meter to the +2 or +3 level without turning the signal indicator red. With a maximum output level of +36 dB, you should be able to drive any load to sufficient level without taxing the output section.

Operationally speaking, there are a lot of pluses on the AD2022: The switches operate without creating any noises — even the phantom power switch. Turning phantom power off while monitoring the output (not something I'd make a habit of) doesn't produce the horrendous pop you'd expect; turning phantom power back on results in a muted thump at a level low enough not to damage a monitor speaker if the volume happens to be up. A stepped resistor is used for input gain control, meaning you'll be able to accurately repeat session settings. This, along with the continuous output control — which covers a range of plus or minus three dB — easily enables fine tuning of levels in between the four dB steps of the input gain knob.

I was pleasantly surprised to find that the AD2022's DI was more than a gratuitous hole in the front panel. I used it for analog synth bass sounds, and the results were excellent. Low-frequency extension was ridiculous (in a good way), and having all that headroom allowed me to print hot levels without worry of running out of gas. Even on electric guitar, the DI was more than just "usable" — a bit of compression and chorus with the low-cut filter wound up near 80 or 100 Hz gave me a good clean rhythm guitar tone (unlike most pres where the DI...well...sucks).

Input Impedance

The big question is whether or not the AD2022's adjustable input impedance makes any real difference. The answer: yes, almost always. With some mics the difference was subtle, and with others, drastic. All of the mics reacted to impedance switching in terms of their output level. Each mic had a setting where a minimum of gain on the AD2022 was needed to drive the next signal stage to a particular level. Taking the time to find this setting paid off clearly in reducing the amount of noise introduced to the chain (though the AD2022 introduces very little noise in the first place). The most dramatic example was with a pair of 35-year-old Sennheiser MKH404 RF condenser mics. These mics use a small outboard power supply, plus a set of cables on the output of the supply that include balancing transformers. The MKH404's are picky about the mic pre to which they're connected. When I found the "correct" impedance, the output of the MKH404's jumped roughly six to eight dB higher for an identical input gain setting. This difference made for a *major* improvement in the noise floor. It also sounded to me as if, at the highest impedance setting ("Mic"), the distortion level *increased*, perhaps due to transformer saturation.

On the U 87, the 150-Ohm setting seemed to reduce background noise most effectively, and I also felt it was slightly cleaner. I opted for this setting, which sounded more natural, as opposed to some of the others that resulted in hotter output but a less natural sound. My RCA 44BX sounded most open in the top end at the 600-Ohm setting, but the "Mic" setting was most quiet. Differences with the SM57 were subtle; it was a touch thinner at 50 or 150 Ohms, yet more quiet at 600 or "Mic." (I do have to mention that using a '57 through the AD2022 for a snare drum really sounded good at any setting.) When using the Neumann TLM 103 or the CAD E-350, different impedance settings made a minimal change in the sound. Avalon will be including a chart with the AD2022 that lists suggested settings for popular microphones.

Dialed In

Avalon has gracefully risen to the challenge of adding a new unit to their well-established AD2000 Series. The AD2022 is quiet, transparent, easy to operate, and feels well built. The low-frequency extension practically makes it a must for kick drum and bass synth or bass guitar recording. The ability to "tune" the input transformer to the mic you're using makes the AD2022 very versatile, and can be very effective with certain mics. You might even find that you rediscover your microphone collection! ■

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By Mitch Gallagher • mgallagher@uemedia.com

Little Labs PCP Instrument Distro Guitar Splitter and Impedance Matcher/Converter

The ultimate guitar-recording Swiss Army knife?

Recording electric guitar has always been something of a challenge — there are just so many tonal possibilities from the guitar, the amps, the recording gear, the mic selection and placement, on and on.... Some engineers and musicians are able to circumvent the problem of tonal anxiety by committing to a sound early on. Others prefer to record the guitar direct, then later send the recorded direct guitar back out to an amp for miking and re-recording (re-amping). Still others record a single guitar that has been split and is simultaneously fed through multiple amps set up for different tones. All of these are valid solutions, but each requires extra technology, whether a direct box, re-amp box, guitar-level splitter, or whatever.

If you've been struggling with capturing great guitar tracks, Little Labs may have just the tool you need: The PCP Instrument Distro. The PCP is a multipurpose guitar wonderbox designed to facilitate direct guitar recording, splitting, and re-amping, and level matching between pro and guitar-level gear (PCP stands for Professional to Cheesy Pedal).

Overview

The PCP is compact; two rack-units high, but eight inches wide. It's conceivable that you could rack-mount one or two of these with some sort of adapter, but no such hardware is supplied or listed as an accessory. The unit uses an external lump-in-the-line power supply with a four-pin XLR connector. A very nice padded hardshell case is included that holds both the PCP and its power supply. There's no power switch on the unit.

The unit has parallel instrument (guitar) level inputs on the front and back panels. The front-panel jack takes precedence when both are connected. Also on the front panel is a ground-lift switch for the instrument input, as well as a matrix of 15 push-button switches for determining signal routing. On the right are three transformer-isolated 1/4-inch outputs that have same impedance and level as a passive electric guitar pickup. Each has an associated phase-reverse and ground-lift switch, as well as an output level control. Also included on the front panel is a "mult" output for routing the original guitar-level signal back out to an external device.

▶ LITTLE LABS PCP

MANUFACTURER: Little Labs, 6711 Whitley Terrace, Los Angeles, CA 90068. Tel: 323-851-6860. Web **www.littlelabs.com**

SUMMARY: A top-of-the-line direct box and flexible solution for feeding multiple amps simultaneously, re-amping, interfacing guitars with balanced –4 dBu gear, or interfacing balanced +4 dBu signals with guitar pedals and amps.

STRENGTHS: Excellent sound quality. Very flexible. Line-level direct out. Three balanced +4 dBu inputs. Multiple inputs can feed each output. Each input can feed multiple outputs. Polarity reverse and ground-lift switches on instrument input and three instrument outputs. Instrument output level trims. Expandable.

WEAKNESSES: No way to pad line-level direct output to microphone level. No power switch. Pricey.

VERSION REVIEWED: 3.0 — upgrades are available from earlier versions; contact the manufacturer.

PRICE: $950

EQ FREE LIT. #: 119

The back panel sports a balanced XLR DI output and three balanced +4 dBu XLR inputs. Across the bottom of the back panel are balanced 1/4-inch jacks for chaining together multiple PCP's for extra I/O, an unbalanced 1/4-inch "long line driver" output, and the parallel instrument input jack mentioned above.

The manual is friendly to read and quite good; diagrams of some common system hook-ups would make it even better. For the unquenchably curious, the manual includes instructions on how to open and reassemble the unit. As the manufacturer says, "...I usually won't even buy something until I open it. So here is how to do it without screwing it up."

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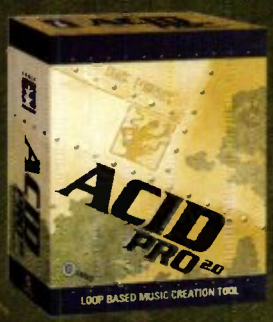

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What It Does

The PCP Instrument Distro can do a number of things. Instrument (guitar) level signals can...

• ...feed the DI output, which is active and has +16 dB gain. In fact, you can use it straight into line-level inputs if you want — no need to go through a mic preamp. There's enough level available on this jack to drive +4 dB inputs — I even used it plugged straight into one of my Genelec 1030 monitors. For some applications, such as where you want to feed a mic preamp for a particular tone, it would be nice to be able to pad the Direct Output down to more conventional direct box level.

• ...feed the "long line driver" output, which is low impedance, and therefore can survive long-distance cable runs. One application might be when the guitar player is in the control room, but his amp is out in the studio. If feeding a low impedance signal into a guitar amp makes you shudder, a second PCP on the other end can be used to convert the signal back to guitar impedance.

• ...feed any or all of the three instrument-level front-panel outputs. This allows you simultaneously run the guitar to up to three amps or to run it into multiple guitar-level effects in parallel, with no level or loading problems.

In addition, the three +4 dBu inputs can simultaneously feed any or all of the three instrument-level front-panel outputs. This lets you convert balanced pro studio gear to guitar level/impedance for feeding guitar pedals, which can then be brought back in through the PCP's instrument input, or you can send line-level signals into a guitar amp for re-amping. In addition, by using these inputs in conjunction with the line-level DI output, you can interface guitars with +4 balanced gear — this lets the PCP serve as an "effects loop" for your guitar into which "pro" compressors, EQs, and effects can be inserted with no level or impedance mismatches.

All of the PCP's functions are available simultaneously, given the I/O limitations. Instrument level signals can be merged with the +4 inputs, although you can't control the relative blend of the signals from the PCP itself.

In Use

Right off the bat, can I get an amen? The PCP features no menus or scrolling — there's a switch or knob for each function, and all the switches have complementary LEDs to indicate their status. Strangely, an LED showing green indicates "off," while red indicates "on"; the opposite seems more intuitive.

The PCP offers so many possibilities that it can almost cause option anxiety — especially since you can route more than one input to each guitar-level output. In one case, I routed my Strat set to the pickup position between the bridge and middle pickups into the PCP. The Direct (line-level) output I fed into a MindPrint tube compressor set to squash the signal pretty heavily. I brought the tube compressor back into the PCP's balanced +4 Input C. I routed this out the PCP's Guitar Output A to my Mesa Boogie. I also routed the dry guitar Instrument Input to Output A. (When multiple inputs are routed to the same output, they're merged internally by the PCP.) By balancing the level of the compressed signal (using the output control on the compressor) against the dry guitar signal, I came up with a fat, singing tone that still had that great Strat "out-of-phase" attack. Lovely! I also used the PCP to feed my Les Paul through new Universal Audio 1176 and LA-2A compressors before sending it into a Marshall — ya gotta love it.

THE PCP OFFERS SO MANY POSSIBILITIES THAT IT CAN ALMOST CAUSE OPTION ANXIETY — ESPECIALLY SINCE YOU CAN ROUTE MORE THAN ONE INPUT TO EACH GUITAR-LEVEL OUTPUT.

I found the PCP worked very well for re-amping — taking tracks that had been recorded direct to hard disk and sending them back out to an instrument amplifier (or amplifiers). I used this to run direct-recorded electric guitar tracks through amps and also to re-amp electric basses, vocals, and other tracks. I was especially pleased with some jazzy fingerstyle tracks I recorded direct into Pro Tools, then sent back out simultaneously to my Mesa-Boogie 1x12 combo and Peavey 4x10 Classic. Being able to blend the sound of the amps in the room and then position (and re-position, and re-position...) mics around them until I was happy was perfect for the tone I wanted. I find that working this way is especially effective for those (like me, in this case) who work alone. You can focus on capturing your performance by recording direct without worrying about mic placement, etc. Then you can go back, with your performance safe in the can, and spend as much time as you want getting the miked amp sound(s) perfect.

For those into lo-fi, being able to correctly level-match the output of your "pro" recording gear with guitar pedals is very cool. You truly haven't lived until you've used a Crybaby wah pedal to funk up your drum tracks or put an ElectroHarmonix Little Big Muff distortion on a delicate acoustic piano solo. If you're not into radical lo-fi, you can still get great results using guitar pedals. For example, my ancient Maestro Phaser II worked subtle wonders on a fretless bass solo, and few digital boxes can rival the chorus in my old Roland/Boss stompboxes.

Sonically, it's hard to do a fair A/B comparison between the sound of the PCP's Direct Output and that of a conventional direct box, because of the level difference; you either have to preamplify the conventional direct box or pad the PCP's output. Neither is a completely transparent solution. Still, in critical listening tests, I found the PCP's Direct Output to sound excellent; round, full, and warm.

A potential concern is damage to the tone of the guitar as the PCP splits it. But when A/B'ing between my Tele plugged straight into a Mesa Boogie Mk IIB combo, a heavily modified Marshall JCM 800 with 1960 4x12 cabinet, and a vintage Fender Vibrochamp, and the same guitar fed through the PCP to each amp (as well as to all three amps simultaneously), I found the PCP to be quite transparent. There was plenty of range in the unit's output controls for matching the PCP to the straight guitar's volume through each of the amps (the level required varies with the input impedance of each amplifier).

Conclusions

If there ever were an item that qualified as a "Swiss Army Knife" of guitar recording tools, the Little Labs PCP Instrument Distro would be it. This little box is capable of providing a ton of routing and interfacing possibilities — enough for all but the most gluttonous tone junky. And it does so without adversely coloring the guitar's signal. It's pricey for casual use, but if you lust after the Holy Grail of Guitar Tracks, the PCP Instrument Distro should land near the top of your list of must-try tools. ■

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The MSP10 also comes in highly polished Maple Sunburst.

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YAMAHA

Audio Ease Nautilus Bundle MAS-Compatible Plug-Ins

Synchable 24-notch phaser, 32-band EQ and spectroscope, and real-time granular synthesizer plug-ins

The ranks of plug-ins continue to swell — especially in the "meat and potatoes" categories such as compressors, EQs, and so on. That's great, but if it's new and different plug-ins you're looking for, Audio Ease has something you should check out: the Nautilus Bundle. Comprising RiverRun (granular synthesizer), Periscope (EQ), and Deep Phase Nine (phase shifter), the bundle provides unique possibilities for creatively processing your audio.

RiverRun

RiverRun is the first plug-in to offer granular synthesis. It works by extracting tiny chunks of audio (called "grains") from an input signal, then processing and recombining them. The results can range from tiny blips to intense metallic washes to evolving textures to pure noise.

The relative simplicity of RiverRun's user interface (fig. 1) belies the complexity of the sounds it can generate. The display window (the "Grain Glass") shows audio that's been loaded or recorded into RiverRun; two sliders determine which section of that audio RiverRun is working on. The Walk control sets how fast RiverRun moves through the audio and whether it does so normally or in reverse. By using the Record button, you can capture a section of audio from the track the plug-in is inserted on; when you quit or close the song, that audio is saved to a special folder and reloaded when you reopen the song. If you leave the Record button selected, the plug-in will continuously process incoming audio as if it were an effect plug-in. In this application, it would be nice if there were a wet/dry mix control. Alternatively, you can load a Sound Designer II-format audio file into RiverRun. If you save a RiverRun preset, the current audio is saved and reloaded the next time that preset is accessed. There are two RiverRun modes: Flowing (more textural results) and Rhythmic (syncs to Digital Performer's clock).

The Shape control applies an envelope to each grain, while the Mono/Stereo control randomizes its pan position. Grain Speed determines the number of grains taken from the input; Grain Speed Random randomizes when those grains are taken, while Grain Length sets the duration of the grains.

RiverRun picks a pitch for each grain based on what's selected in the Pitch Grid. Twenty-three options are provided from "no grid" to "c minor 7th" to "chromatic" to "octaves." The pitch can be fine-tuned, and you can randomize it over as much as an octave.

You can semi-predict what RiverRun will do, but I had more fun turning it loose and experimenting with the controls. I turned to RiverRun repeatedly for creating unique textural washes — I had great luck making ominous tonalities from a drum loop, while a slap-pop electric bass track yielded harsh metallic washes — very cool.

Automation of all parameters is supported, allowing you to fine-tune the results to match your music. You can even automate RiverRun's Record switch so you can capture and process a specific section of a track.

FIGURE 1 (left): RiverRun is a unique plug-in; the first to offer granular synthesis. FIGURE 2: Periscope offers a low-pass and a high-pass filter, as well as 30 band-pass filters in a highly controllable package.

▶AUDIO EASE NAUTILUS BUNDLE

MANUFACTURER: Audio Ease, dist. in the U.S. by Mark of the Unicorn, 1280 Massachusetts Ave., Cambridge, MA 02138. Tel: 617-576-2760. Web: **www.audioease.com** or **www.motu.com**.

SUMMARY: The Nautilus Bundle is anything but another set of "me-too" plug-ins — recommended for those looking for inspiring, unique audio processors.

STRENGTHS: Synchable to Digital Performer's clock. Periscope is Altivec-enabled. Periscope's ability to "zoom in" on a frequency range. Deep Phase Nine's extended tonal possibilities. RiverRun's unique granular synth capabilities. RiverRun and Deep Phase Nine offer comprehensive automation support.

WEAKNESSES: RiverRun can be processor intensive. No parameter automation in Periscope. Unpredictable response to clicking to start one-shots in Deep Phase Nine. Can't automate one-shots in Deep Phase Nine.

MINIMUM SYSTEM REQUIREMENTS: Macintosh G3, 233 MHz or better, Mac OS 8.5.1, MOTU Audio System 2.1, Digital Performer 2.7, 35 MB RAM or more dedicated to Digital Performer

PRICE: $299

EQ FREE LIT. #: 130

Periscope

Periscope (fig. 2) is a 32-band EQ that Audio Ease says is "phase-correct"; meaning you can boost or cut a band without screwing up the phase-coherency of the signal. By zooming in (you can get the bands down to as small as 10 Hz each), you can "surgically" remove frequencies, or, by using a wider bandwidth, create smooth, gentle curves. Periscope doesn't support automation, except bypass. Audio Ease says this is to ensure compatibility with non-Altivec computers.

Periscope's display panel conveys a great deal of information. The lower section of the window shows an overview. Its red and yellow sliders determine the cutoff frequencies of the low- and high-pass filters, which in turn determine the frequency range displayed and processed in the upper window — this lets you focus Periscope's 32 bands on a very tight frequency range if desired.

Within the upper window are the EQ sliders, which are overlaid on a dynamic frequency display, making it easy to see when and where you've made EQ changes. The green graph displays peak level information, while the blue graph displays average level. When you click on a fader, a pop-up shows its frequency and amount of boost/cut.

Periscope's Fader Edit Modes determine how the EQ faders interact when moved with the mouse. In Free Draw mode, the faders will snap to the cursor as you drag the mouse. In Flat mode, the faders snap to, and move in, a horizontal line. In Amplify mode, dragging one fader moves them all, but their relative positions don't change — the effect is the same as moving them all by the same amount. Exaggerate mode is similar, except that moving one fader moves all the others by the same relative amount. So pushing a fader exaggerates the EQ curve, while pulling it flattens the curve.

In Magnetic mode, moving one fader also moves the faders around it. How many faders and how far they move is determined by the Magnetism knob. The effect is that moving one fader creates a smooth EQ curve, as opposed to a single-band peak or notch.

In use, Periscope is very powerful. Being able to "concentrate" the 32 bands on a narrow range of frequencies gives you extremely precise tonal control. With the Fader modes, you can zero in on the EQ curve you want very quickly — there are even key-commands for switching modes. The sound remains crystal-clear no matter how intensely you're cranking or cutting bands.

Deep Phase Nine

Deep Phase Nine (fig. 3) is a true phaser, featuring up to 24 sweeping filters per channel. Its interface has three panels. On the upper left is an animated display representing the moving filters. The Low and High knobs set the upper and lower frequency limits of the sweeps. When Deep Phase Nine is used in stereo (as it is here), the knob in the center of this panel appears; it offsets the filters in the left (yellow) and right (red) channels.

FIGURE 3: Deep Phase Nine is a true phaser offering extended control possibilities.

The LFO waveform can be set to sine, triangle, sample and hold, or one-shot sine or triangle. In one-shot mode, you can click anywhere in the oval and the yellow ball (which reflects the motion of the LFO) will travel around to the yellow circle (called the "socket"). You can position the socket wherever you like. I found one-shots a bit unpredictable. Sometimes the ball would start traveling from the cursor position, sometimes from the socket. Unfortunately, you can't currently automate one-shots. You can sync the LFO to Digital Performer's clock and sub-divide the beats in double, triple, and other rhythmic divisions.

On the right is the notch panel. Here you set the number of notches per channel (from one to 24), the distance between notches, the amount of feedback (determines the notch/peak depth), whether feedback is positive or negative (results in notches or peaks, respectively), and the wet/dry mix.

In use, Deep Phase Nine sounds incredible. I often found myself "playing" the parameters dynamically. Since you can automate almost everything in Deep Phase Nine, you can capture and edit whatever moves you make for later playback. From traditional phaser effects to filtering effects to totally new sounds, the plug-in is capable of generating some great tones. Being able to offset the two channels is a nice bonus, resulting in even more liquid sounds with a nice stereo spread.

Conclusions

If you're looking for another "me-too" set of audio plug-ins, then this Audio Ease offering isn't for you. But if you're looking for powerful EQ, a fresh take on phasing, or totally new synthesized textural possibilities, Nautilus definitely fills the bill. ■

IN REVIEW SHORTS

ART HPFX

HEADPHONE MONITORING SYSTEM WITH EFFECTS

By Rob McGaughey

BASICS: The HPFX is a self-contained headphone monitoring system. It can function as a standard headphone amplifier capable of driving four pairs of headphones at ear-splitting levels, each with its own level control. The cool part of the HPFX is the ability to input two microphone inputs, apply effects to them, and blend the results with the stereo mix input — this gives you (or your musicians) "more me" control. The HPFX features microphone inputs capable of 56 dB of gain, and a Mic Thru jack passes the unity-gain, unprocessed incoming microphone signal on to a mixing console or microphone preamp.

The headphone outputs deliver 1/4-watt RMS/channel. The HPFX doesn't offer built-in phantom power, but an external mic preamp or a mixer connected to the Mic Thru connectors can supply it. The stereo mix inputs are unbalanced 1/4-inch connectors at line level with a switchable 20 dB pad that allows you to bring in signals from other headphone amps or to cascade multiple HPFX's together. The built-in 24-bit effects include reverb, echo, and discrete delay (slapback), and special effects (choruses, flangers, and discrete delay) are tailored for vocal use. The HPFX has an effect bypass, an effect select knob, and a parameter adjust knob that provides basic effect tweaking. Both microphone inputs must use the same effect settings, and you are limited to one effect at a time (you can't, for example, chain a delay and a reverb). The HPFX also has an unbalanced line-level stereo output jack that carries the microphone input signal with effects.

PROS & CONS: The HPFX is easy to use and very capable. It delivers plenty of level and the effects are good enough for tracking applications. It is transparent in the signal path even when used with top-quality condenser microphones and preamps. The HPFX is particularly useful when recording by yourself or if you're using a DAW without a hardware mixer. A drawback is that the stereo mix inputs are unbalanced, which could be a problem if you need to place the HPFX a long distance from the audio source. The effects are a nice bonus for a headphone monitoring system.

BOTTOM LINE: I really liked the HPFX. It's a useful tool for easily creating flexible cue mixes. Many DAWs and computer-based studios have limited flexibility in this regard and many hard-disk-based systems have the added problem of signal delay caused by the latency of the computer sound card or audio interface. The HPFX is an excellent solution to these problems and should find a welcome home in many home recording studios. My wish list is short: balanced mix inputs and more mic channels.

From the "can I get a little 'more me' in the headphones?" question to circumventing DAW latency to creating flexible headphone mixes with dedicated effects, the HPFX provides an easy, cost-effective solution.

ART HPFX

PRICE: $299

CONTACT: ART, 215 Tremont St., Rochester NY, 14608. Tel: 716-436-2720. Web: **www.artroch.com**. *EQ* free lit. #120.

RICOH MP9120A COMBO DRIVE

HIGH-SPEED INTERNAL ATAPI CD-R/CD-RW/DVD-ROM DRIVE

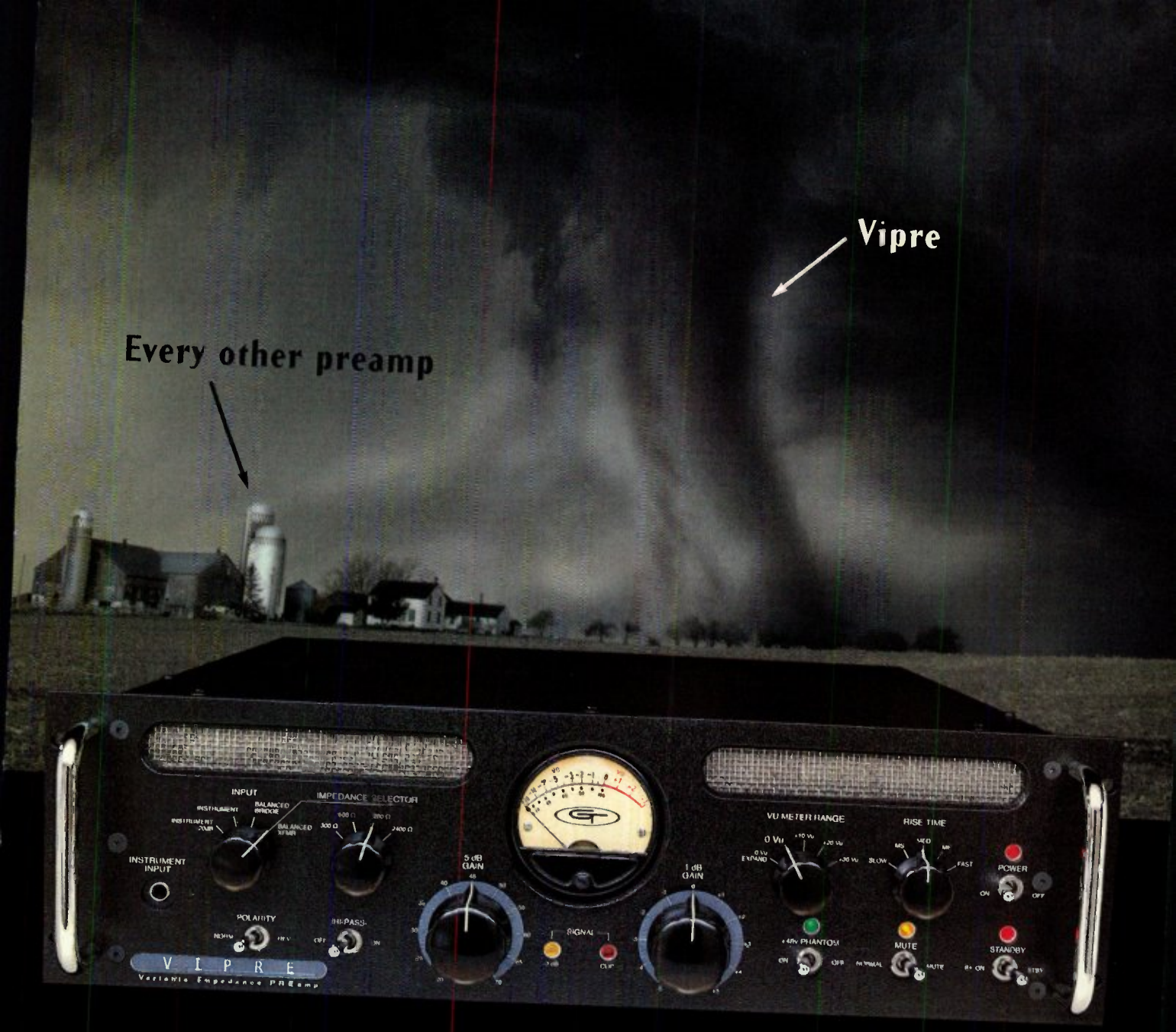
By Mitch Gallagher

BASICS: Burning and reading audio CDs, CD-ROMs, and CD-Rs, and, more recently, accessing data on DVD — these tasks have become significant for most studio owners. Making sure you have the right drive for these tasks is essential. Ricoh's new offering, the MP9120A combo drive, offers a fast internal ATAPI (IDE) solution. A 1/2-height drive that can be mounted horizontally or vertically, the MP9120A supports Windows 95, 98, 98SE, ME, 2000, and NT4. It's read-compatible with audio CDs, CD-ROMs, CD-R, CD-RW, and DVD-ROM. It's write-compatible with CD-R and CD-RW, including audio CD, CD-ROM, Mixed Mode, Video CD, Photo CD, and more. Speedwise, the MP9120A offers 12X writing, 10X re-writing, 32X read (CD), and 8X read (DVD-ROM). The MP9120 also supports audio extraction from CD.

The drive installed easily in my Dell. Once I set its jumpers correctly, the Ricoh was happy to coexist with the PC's stock internal hard, Zip, and CD/DVD-ROM drives.

An internal S/PDIF output port (but no cable) is provided for linking to sound cards that offer a similar internal input. This worked perfectly with the Steinberg Nuendo 96/52 (see review in last month's issue). There's also an internal analog output for sound cards that support that option, as well as a headphone jack with volume control on the front panel.

Several programs are bundled with the MP9120A. Prassi PrimoCD Plus software is basic at best. It's good for creating CD



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copies, backing up, or for burning quick reference audio CDs. While it claims to be designed for "pro CD mastering," this isn't the case for audio CDs — you're given no control at all, not even over the spacing between tracks. On the plus side, PrimoCD is simple, fast, and intuitive to use. Also included are Inter Video WinDVD 2000, which supports playback of DVD videos on your PC (assuming the computer has enough juice), and abCD, which allows you to drag/drop files on CD-RW discs. WinDVD worked well, but, unfortunately, abCD isn't Windows 2000- or NT-compatible, so I was unable to test it.

The MP9120A features a 2-MB buffer as well as Ricoh's proprietary "JustLink" technology, which the company says automatically anticipates and prevents buffer underruns. Whether JustLink works or not I can't say for certain — although I experienced no buffer underruns!

PROS & CONS: The weakest part of the MP9120A is its software bundle, but this won't bother most serious users. They'll have their own favorite CD-burning applications they'll want to use anyway.

On the plus side, the drive works well, and it supports pretty much whatever format you throw at it. I used it with Ricoh's own high-speed-rated CD-Rs and CD-RWs, various "name brand" discs, and generic blanks without a problem. Right now DVD support isn't that big of a deal for most users, but it's there if you want/need it, and it worked fine for me.

BOTTOM LINE: The best thing you can say about the MP9120A is that it does what it claims to do, and does it well. The broad format support, fast, easy operation, and internal digital and analog audio connections all add up to a solid offering from Ricoh.

RICOH MP9120A

PRICE: $349
CONTACT: Ricoh Corp., 1101 Bell Ave, Tustin, CA 92780. Tel: 877-742-6479. Web: **www.ricohdms.com**. *EQ* free lit. #121.

ROLAND ED PC-300

PLUG AND PLAY USB KEYBOARD CONTROLLER FOR MAC AND PC

By Mikail Graham

BASICS: If you're using a USB-equipped Mac or PC and have a need for a compact keyboard controller that offers a built-in 16-channel MIDI interface, real-time performance tweaks, and more, then the Roland ED PC-300 might be just the ticket for you. It has 49 full-size keys, weighs all of five pounds nine ounces, and gets its power from the computer's USB port, which keeps the cord mess down to just one USB cable (supplied), unless you decide to use the PC-300's integrated MIDI Out port with an external MIDI module. Setting the keyboard up to work with your computer is a breeze. An included CD contains USB drivers for both Mac OS 8.5 (or later) and Windows 98, plus USB drivers for both OMS 2.3.7 and FreeMIDI 1.42.

I ran the USB OMS driver installer, restarted my PowerBook, plugged in the PC-300, and launched Emagic's Logic Audio, and within a couple of minutes I was dancing my fingers across the keyboard playing my Native Instruments B4 and loving it! Frankly, I've rarely experienced such an easy installation and setup. From pulling the shrink wrap off the box to making music took all of ten minutes. Tweaking MIDI parameters such as volume, program change, panning, chorus, reverb, or even aftertouch can be done with a push of the keyboard's MIDI/Select button followed by "data entry" accomplished by pressing one of the 49 keys. Choosing the octave you want to play in is as easy as pressing the +/– octave button. Roland's classic pitch/modulation lever is included, and there's a jack for use with a sustain/hold pedal.

PROS & CONS: The PC-300 makes a great portable keyboard controller, and it's also wonderful for a space-limited studio or MIDI composing rig. The integrated MIDI interface is a big plus, as is the easy connection to Mac or Windows computers via USB — and did I mention there's no power cable? If you're a mobile musician/producer like me, you might wish the PC-300 was a bit smaller for traveling; an octave fewer keys would allow it to fit in my suitcase a bit easier. Overall, the PC-300 is a great value.

BOTTOM LINE: I found the PC-300 to be a true "plug and play" solution and a very useful addition to my mobile PowerBook studio. The extra MIDI port let me easily connect to the external devices I'm using these days, plus the ability to tweak controllers and even add aftertouch were welcome bonuses.

ROLAND ED PC-300

PRICE: $325
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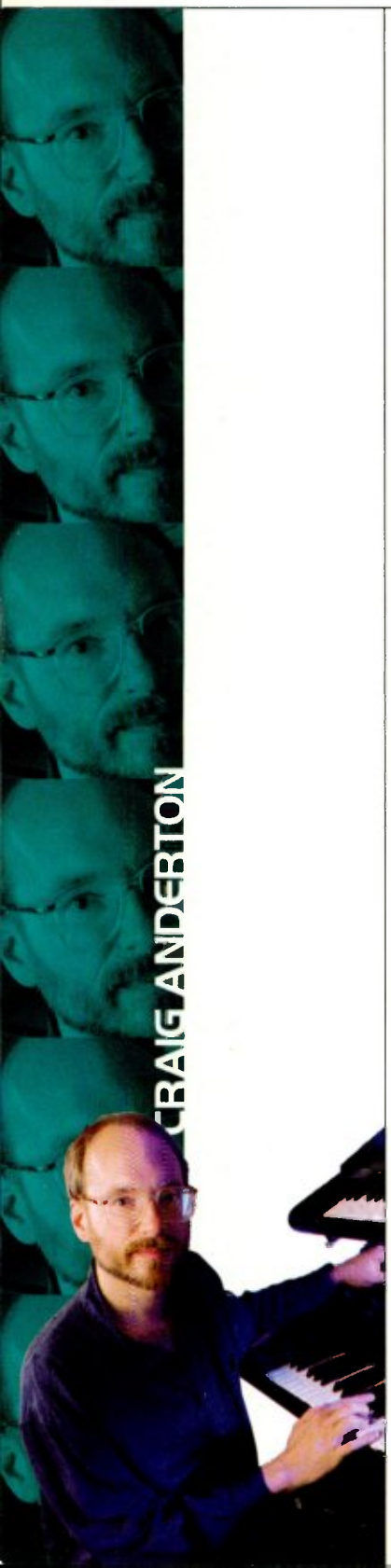

A couple years ago, I realized I was spending more time getting ready to make music than making music. Even worse, despite having some pretty cool gear, I was having less fun than when my setup consisted of a four-track tape recorder and some do-it-yourself Paia synthesizers.

We all know the culprit in this scenario: technology. And many people, having identified the culprit, start scaling back. After all, the less technology you have to deal with, the better...right?

Yet I had become seduced by the power of editing, digital audio, and sophisticated software. Furthermore, a lot of my gig depends on being on top of new technology, so I didn't see any real alternative other than continuing to proceed in the same direction.

And it's a good thing I did continue on, because — surprise! — instead of reaching a point of diminishing returns, my studio reached a point of increasing benefits. The problem wasn't really too much technology. The problem was *not enough* technology, or technology that wasn't applied toward a single, coherent goal: having fun with the process of making music.

I thought it might be helpful to identify the steps that have simplified my life. Everyone's situation is different, of course, and what worked for me might not apply to you. But hopefully the *concepts* will make sense, and may inspire you to make a few setup tweaks that simplify your life.

The Baddest Processor on the Block

A major change was upgrading my Q Performance Systems computer's processor from 450 MHz to 850 MHz. Suddenly, digital audio programs ran more tracks, more consistently. I could use lots of plug-ins instead of having to carefully select a balance of software plug-ins and external rack processors.

Finally, I really could do it all inside a computer — record, mix, process, and master. That alone simplified my life, in ways that didn't become totally obvious until experiencing some of the other changes listed below.

By the way, anyone who tells you that a 1 GHz processor isn't necessary probably just does word processing and 'Net surfing. For music software, a faster processor doesn't just give speed: it gives *power*.

Goodbye, Virtual MIDI Tracks

Virtual MIDI tracks were great back when digital audio meant expensive multitrack tape decks or software with limited track counts. But they always were a bit of a pain. It seemed impossible to set up a MIDI rig to make exactly the same sound twice, what with mixer preamp tweaks and the like; and with multitimbral synths, you'd always encounter the limits of polyphony or timing stability. So you'd have to go back and make sure notes didn't overlap unless they were supposed to, thin out controllers, maybe offload a few voices to another synth...I even did baroque tricks like sync up a synth's onboard sequencer with a MIDI sequencer, just to keep the timing more stable. And there was always the issue of having effects that sounded great on individual patches, but disappeared in multitimbral setups. Sure, you could try programming some workarounds, but the operative word there was indeed "work."

Now that I can do more tracks with digital audio, MIDI is no longer for playback. I get the parts the way I want, then mute everything except for one MIDI track, and transfer that part over as audio to a digital track. It has the right effects, level, expressive nuances, etc. already built in. If I change my mind later, it's no big deal to go back to the sequencer, edit the part, then transfer again.

MIDI Sequencers: For Editing Only

MIDI sequencers excel at editing; you can realize just about anything you can imagine. But as capture devices, I generally prefer the onboard sequencers found in keyboards — with my Ensoniq TS-10, I can record tracks within 10 seconds of turning it on (try that with a computer). There's the issue of transferring the tracks over to the computer for editing; I've heard of a utility that converts TS-10 sequences to Standard MIDI Files, but I just sync it up to the sequencer and transfer parts over in real time.

No More Patchbays!

How many hours of your life have you spent patching gear? Too many, I bet. Using the computer for as many functions as possible reduces patch points by default; for example, instead of having to patch in a signal processor, you just deal with a drop-down menu of plug-ins.

But what really killed the patchbay for me were two parallel developments: the digital mixer and the ADAT lightpipe interface.

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11 __11 Record Company/A&R
12 __12 Pro Audio/Video Dealer
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2. Describe your level of involvement in music, recording and sound:

15 ___a. Full-time occupation
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4. Check the one that best describes your current investment in music, recording & sound equipment:

25 ___a. Under $5,000
26 ___b. $5,000–$10,000
27 ___c. $10,000–$25,000
28 ___d. $25,000–$50,000
29 ___e. $50,000–$100,000
30 ___f. $100,000–$250,000
31 ___g. Over $250,000

5. Check one to describe your budget for music, recording & sound equipment during the next 12 months:

32 ___a. Under $5,000
33 ___b. $5,000–$10,000
34 ___c. $10,000–$25,000
35 ___d. $25,000–$50,000
36 ___e. $50,000–$100,000
37 ___f. $100,000–$250,000
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01	02	03	04	05	06	07	08	09	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52
53	54	55	56	57	58	59	60	61	62	63	64	65
66	67	68	69	70	71	72	73	74	75	76	77	78
79	80	81	82	83	84	85	86	87	88	89	90	91
92	93	94	95	96	97	98	99	100				

EDITORIAL

101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124
125	126	127	128	129	130	131	132	133	134	135	136
137	138	139	140	141	142	143	144	145	146	147	148
149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172
173	174	175	176	177	178	179	180	181	182	183	184
185	186	187	188	189	190	191	192	193	194	195	196
197	198	199	200	201	202	203	204	205	206	207	208
209	210										

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14 __14 Other (Specify)

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01	02	03	04	05	06	07	08	09	10	11	12	13
14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49	50	51	52
53	54	55	56	57	58	59	60	61	62	63	64	65
66	67	68	69	70	71	72	73	74	75	76	77	78
79	80	81	82	83	84	85	86	87	88	89	90	91
92	93	94	95	96	97	98	99	100				

EDITORIAL

101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124
125	126	127	128	129	130	131	132	133	134	135	136
137	138	139	140	141	142	143	144	145	146	147	148
149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172
173	174	175	176	177	178	179	180	181	182	183	184
185	186	187	188	189	190	191	192	193	194	195	196
197	198	199	200	201	202	203	204	205	206	207	208
209	210										

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AD INDEX

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PAGE	BRAND	INFO#	PHONE#
69	Acoustic Science Corp.	1	800-272-8823
9	AKG/Harman Pro	2	615-360-0499
34, 111	Alesis Corporation	78, 81	800-525-3747
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51	beyerdynamic	7	800-293-4463
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130	D.W. Fearn Company	70	610-793-2526
128	dB Technologies	75	323-845-1155
40	Digibid	12	609-720-0383
10-11	Digidesign	13	800-333-2137
116	Disc Makers	14	609-663-9030
130	Discount Distributors	71	800-346-4638
59	Dreamhire	15	800-234-7536
48	Earthworks	16	603-654-6427
101	Emtec Pro Media, Inc./BASF	17	888-295-5551
43	Event Electronics	18	805-566-7777
116	FMR	74	512-280-9106
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31	Fostex	20	562-921-1112
129	Full Compass	21	800-356-5844
59	Grace Design	22	303-443-7454
92	Grandma's Music & Sound	23	800-444-5252
81	Great River Electronics	24	651-455-1846
91	Hafler	25	480-517-3078
83	IVL Technologies Ltd.	26	250-544-4091
77	JBL Professional	27	818-894-8850
79	Joemeek/PMI Audio	28	877-563-6335
8	Korg	29	516-393-8530
97	Kurzweil	30	800-421-9846
93	Lynx Studio Technology, Inc.	31	949-515-8265
3, 37, 87, 119	Mackie Designs Inc.	32, 33, 34, 35	800-258-6883
148	Mark Of The Unicorn	36	617-576-2760
82	Markertek Video Supply	37	800-522-2025
103	Marsmusic.Com	38	954-938-0526
121	Microboards Technology, Inc.	39	800-646-8881
57	Midiman/M Audio	40	800-969-6434
24-25	Music Players Network.Com	XX	212-378-0411
113	Musician's Friend	42	800-776-5173
63	Musictech	43	612-338-0175
102	Neato	44	203-466-5170
130	Plant Recording Studios	72	415-332-6100
45	Professional Audio Design	45	781-982-2600
93	Rane Corporation	46	425-355-6000
75	Royer Labs	47	818-760-8472
117	Sam Ash Professional	48	516-932-6400
4-5	Samson Technologies	80	516-364-2244
147	Sennheiser	79	860-434-5220
99	Shure Brothers	49	847-866-2200
105	Sonic Foundry, Inc.	50	608-256-3133
41	Sony Electronics Inc.	XX	800-635-7669
23	Steinberg North America	52	818-678-5100
15, 90, 109, 144-145	Sweetwater Sound	53, 54, 55, 56	800-222-4700
73	Switchcraft	57	773-792-2700
125	Syntrillium	58	888-941-7100
49	Tannoy/TGI N.A.	59	519-745-1158
21, 67	TASCAM/TEAC America, Inc.	60, 61	323-726-0303
46-47	TC Electronic	62	805-373-1828
42	The John Hardy Company	64	847-864-8060
92	The Recording Workshop	65	800-848-9900
29	Waves, Inc.	66	865-546-6115
63	Web Music Supply/Big Dudes Music	67	816-931-4638
107	Yamaha Corp. Of America	68	714-522-9000

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peripherals eight channels at a time, I/O assignment occurs inside the computer or mixer, not by plugging and unplugging physical cables. This also means that setups can now be storable presets, not physical cable patches.

Adding a Panasonic DA7 to my setup was another major step up. Because it has analog as well as digital I/O, it's possible to use "legacy gear" as well as new digital whiz-bangs. But the main way it made my life simpler was at the digital end. I have presets stored for just about everything: recording guitar, recording voice, mixing down from computer, sending multiple channels into the computer for recording, etc. As an added touch, the onboard dynamics and EQ can take some of the load off the computer. If I'm hitting the limits of plug-in performance, I can send signals from the computer to the DA7 via lightpipe, and use its processors instead of having to dedicate a zillion plug-ins to various tasks.

Because ADATs are still a part of my setup, obviously the ADAT lightpipe works for them as well. But there are occasional situations where I need to have the ADAT and computer audio present concurrently. For these times, I have an eight-channel snake that connects the ADAT's analog outs into the DA7's analog ins. The quality is virtually indistinguishable from going digital, which frees up the digital I/O for the computer.

Default Setttings

Proper attention to defaults can also simplify life. Sync for my Frontier Design Dakota sound card (chosen, of course, for its simplicity!) is always set to the first of two ADAT lightpipes coming from the DA7, and the DA7 is always the master. If I'm transferring from CD or DAT (neither of which has word clock) into the DA7, I set the DA7 to sync off that, but the sound card still syncs to the resulting DA7 clock signal. I hardly ever have to mess with the sound card default settings.

Personalizing The Computer

You can also personalize your computer and software to make them more productive. Consider placing icons for your most-used applications on toolbars, putting them a single click away from launching while eliminating lots of desktop clutter. Also, software features such as screen sets, where you can save particular configurations of windows, can also save time. Programmable function keys and keyboard commands, once learned, speed up operations tremendously.

Summing Up

It took a while to get there, but my studio is now pretty close to all-digital (or at least, as digital as I want it to be; I'm not quite ready to start singing in binary yet). The hype has always been that technology would make our lives easier, but when you're dealing with word clock problems, software updates, inter-manufacturer incompatibilities, and other gremlins, the reality looks quite different. But take heart — past a certain point, the technology reaches critical mass and it does indeed deliver on its promise. Your role in all this, though, is to avoid temptation: when everything is working, don't switch programs for a few extra features or get every update that comes along. If you're not having fun making music, then something's wrong. But if everything's going smoothly, don't mess with success!

> "ANYONE WHO TELLS YOU THAT A 1 GHZ PROCESSOR ISN'T NECESSARY PROBABLY JUST DOES WORD PROCESSING AND 'NET SURFING. FOR MUSIC SOFTWARE, A FASTER PROCESSOR DOESN'T JUST GIVE SPEED: IT GIVES *POWER*."

Craig Anderton has given seminars on technology and the arts in 37 states and 10 countries. He is creative director of MusicPlayer.com, as well as a performing musician who just finished playing at the Battery Park 2000 festival in Zurich, Switzerland.

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Have a question or comment for Craig Anderton? Visit his online forum at www.musicplayer.com.

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Dr. Al on the evils of Napster

Hijacked by Napster

I wanna start off by saying I chose the music business back in 1958 to express myself and to make a living. I've shared apartments with rodents (the furry *and* fleshy kind) in New York City and I've rented houses in Los Angeles that Ringo moved into when I vacated. It's been a bumpy, crazy ride. I've been cheated out of extremely large sums of money by some of the best and I've learned from them what *not* to do next time. Very costly lessons they were.

This is my life and this is my job; I'm no better or worse than any of you, I'm probably just older (57) and perhaps a bit warier and a little wiser. I've no Mercedes, Pro Tools, or surround sound. I don't go out to parties or restaurants every other night, and when I do venture out, I must admit I'm often dressed in a rather humorous manner. I'm beyond the point of being a rock star or a name on everyone's lips.

> "IF SOME HUNGOVER FRAT GUY IS DOWNLOADING A SONG I WROTE SO HE CAN HAVE THE PROPER COOL SOUNDTRACK TO GET SOME NOOKIE LATER THAT NIGHT, MY RIGHTS ARE BEING AS VIOLATED AS THOSE OF HIS SOON-TO-BE-ARRIVING DATE."

I live comparatively comfortably on the small percentage of royalties I was able to pry out of calculating evil paws over the years. Those stipends are rightfully mine and represent a lifetime of dedication and nose to the grindstone. In 2001, I'm celebrating my 43rd anniversary of being Married to The Music. Okay, let us begin....

Musicians in the limelight have a shelf life of from one to infinity years. The majority fall out of public favor after four or five heady, high-profile years. We can call up a few as examples: The Association, Huey Lewis & The News, Grand Funk Railroad, The Dave Clark Five. The concept is that you should make and save as much as you can while your window of opportunity is open. In a perfect world, you could be covered for the rest of your life (this rarely happens). You could have written or recorded one or more songs that are enjoyed *way* past the original window of your success. "Time Of The Season," "Daydream," "Henry The Eighth"; all have survived their initial runs and continue to earn healthy money for their creators. As you get older, you find that your songs are like your children. They come to look after you when nobody else will. It's comforting in a way.

WEBLINK

Have a question or comment for Al Kooper? Visit him online at the *EQ* Boards, www.eqmag.com.

Well, discomfort runs rampant in the 21st century. They're putting your children into bondage and preventing them from taking care of you. And their name is *Napster*.

I've remained stoic and quiet on this subject for quite awhile, but now I must vent and rant or be crushed under a glass-encrusted tire of disrespect. I guess the thing that rankles me the most about Napster is that you have no say in whether they exploit your work or not. No contracts need to be signed. Somebody uploads your song and that's it. No one with a modem and a computer has to buy it ever again. Now if one were in their twenties and in an ambitious, nascent band, they would welcome Napster and their ilk — if only for the free distribution and publicity. I believe Brother Dylan said it best: "When ya ain't got nuthin', ya got nuthin' to lose...."

But as one gets older, promoters won't guarantee you enough money to take a band out on the road. Record companies aren't looking to sign 50-plus-year-olds — they'd rather come up with clever new ways to design elaborate box sets of your catalog and charge your royalty accounts for their handiwork without permission.

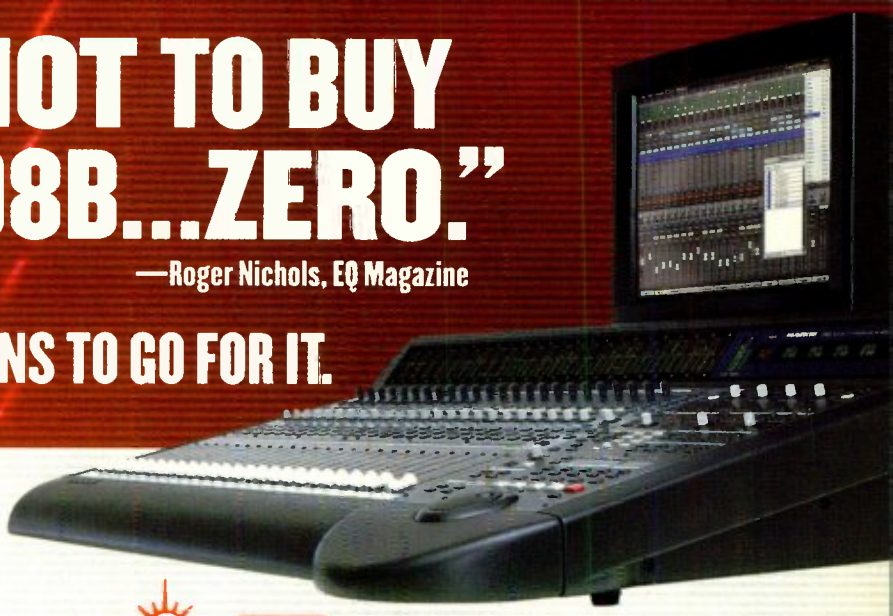
Now my subsidizing income comes from my songwriter royalties. At this point in my career, it doesn't serve my purpose to have free copies of my music floating around, especially of an audio quality I wouldn't sanction if consulted. I don't have a new CD coming out or a new tour in the offing that needs promoting. I'm just a meat-and-potatoes musician who still needs to realize an income. If a company comes to me and says they want to

▶ continued on page 128

"REASONS NOT TO BUY A MACKIE D8B...ZERO."

—Roger Nichols, EQ Magazine

PLUS 3 MORE REASONS TO GO FOR IT.



1 FREE UPGRADE! NEW OS 3.0 ADDS OVER 30 NEW FEATURES!

Our Programming Department has been chugging the double lattés to create Mackie Realtime OS™ Version 3.0, packed with more new features and enhancements than you can shake a mouse at. Here's just part of what 3.0 adds to the already amazing D8B.

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- **3rd-party plug-ins** via our new UFX card. Up to 16 simultaneous plug-ins on the first 48 channels, pre or post DSP, pre-fader via up to 4 UFX cards. Each plug-in is available twice — once when tracking, and again at mixdown!
- **Multiple Undo List** — 999 levels!
- New **Snapshot libraries**.
- Externally or internally accessible **inserts across Mains and Buses** plus **channel inserts pre and post DSP**.
- **Updated GUI** including 48-channel fader bank view screen.
- **Time Offset** (delay) adds a delay of up to 999 samples to the signal at the pre-DSP (dynamics / EQ) point in the signal path.
- **New surround capabilities** including depth-of-center control (LCR mixing with divergence), multiple surround panner window, individual LFE channel level control.
- **Multiple direct outs** per channel.
- **Optional level to tape** fader control.
- **Assignable, bidirectional MIDI control** of all parameters.
- **Cross patching** allows substitution of channels between various banks.

2 DSP PLUG-INS!

Antares' Auto-Tune for the D8B uses advanced DSP algorithms to detect the incoming pitch of a voice or solo instrument as it's being tracked and instantly pitch-correct it without introducing distortion or artifacts. Fully automatable.

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Drawmer offers two dynamics packages for the D8B: ADX100 includes their industry standard frequency conscious gating, plus compression and limiting; ADX200 adds variable "Peak Punch" and further Drawmer innovations.

IVL Technologies' VocalStudio provides real time vocal doubling, multi-part harmonies and pitch correction in an easy-to-use interface. A free demo is built-into the Digital 8 • Bus. Just add a second MFX card to own this innovative plug-in from a world leader in vocal processing.

TC Electronic Reverb (bundled with the D8B UFX card) provides Reverb 1 and Reverb 2 algorithms from the renowned TC Electronic M2000 Studio Effects Processor. TC FX upgrade package contains an expanded set of M2000 reverbs plus Delay, Chorus, and Pitch. TC 2000 adds the TC M2000's Reverb 3, de-essing, tremolo, phasing, and panning.

The list of top engineers and producers who use the award-winning Mackie Digital 8 • Bus is growing daily. For info on the D8B, new UFX and Optical • 8 cards, 3rd-party plug-ins and how D8B owners can get their free OS upgrade, visit www.mackie.com or call your local D8B dealer.

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3 1999 TEC AWARD WINNER!

Normally we don't name competitors in our ads. But in this case, Mix Magazine published the other nominees for the 1999 TEC Award for Outstanding Technical Achievement in Small Format Consoles: Allen & Heath's GS-3000, Digidesign's ProControl, Panasonic's WR-DA7, Spirit's Digital 328 and Yamaha's 01V. Thanks to all who helped us win this prestigious award.

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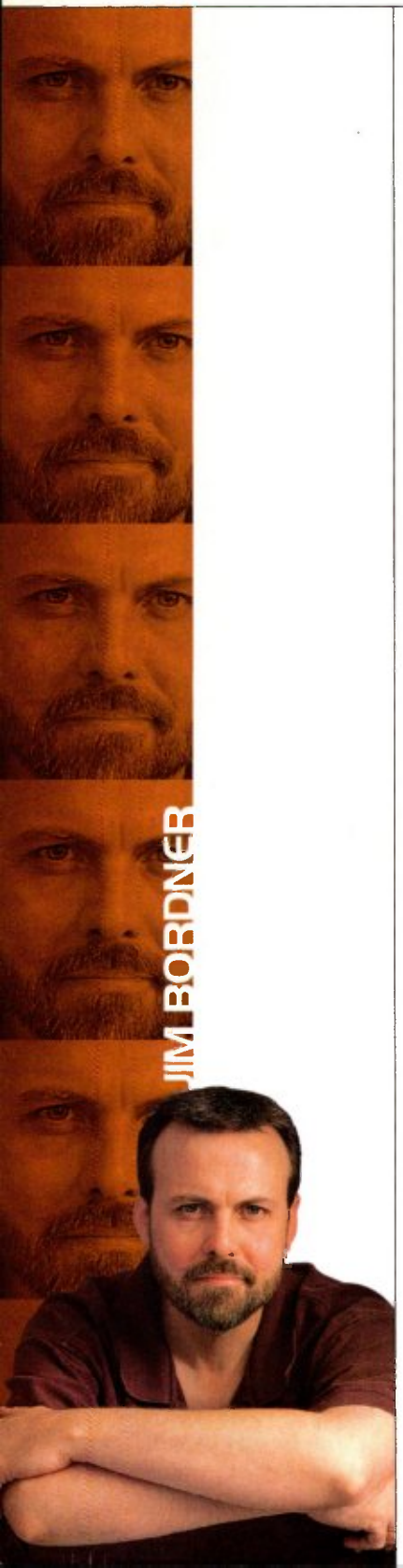
Getting better tech support is largely up to you

Good Help Is Hard To Find



In another life, I was an alchemist. Some greedy king paid me to sit in a darkened room, surrounded by a semi-circle of arcane equipment, banging away at the impossible task of transmuting base metals into gold. As a little kid, I wanted to work in Tom Swift's Electrical Lab, or sit attentively at the horseshoe-shaped controls of a starship comm station. Who knew that audio production would let me live out my daydreams?

That's why I love the modern project studio. Digital nonlinear recording, sample CDs, MIDI, the hum, and the blinking lights, I just love it all. I can be playing a Rhodes piano part, decide that I want to experiment with rhythm guitar tracks to go with the piano, and be recording rough guitar tracks in seconds: just push four buttons and plug in my Strat. It's still amazing to me, a gas, a miracle so slick that the technology seems transparent. I almost forget that I'm using electronic devices.

Until, of course, that hideous moment when one of the devices goes south. A sequencer crashes, a direct box starts producing gnashing distortion instead of bass, a synth goes haywire. Time to call in the maintenance engineer. Oh, wait...I think that's me.

Now what? For many of us working alone, there's only one solution: the tech support call. My own experience with telephone tech support has been largely positive, but when I talk with other Warriors, I hear too many angry stories. Users get so frustrated with technical support, I've heard people accuse the manufacturers of simply not caring about customers, of releasing products they know don't work, and of stonewalling users who try to get their problems fixed.

I'd like to put this myth to rest, because nothing is further from the truth. Think about it for a minute: There's no future in releasing dud products and then lying to your customers about their efficacy. The project studio market is so competitive, a company that did that wouldn't last a year. The obvious truth is that the manufacturers want you to be happy with your stuff. They have a vested interest in your delight. And they hire guys to do nothing but take your phone calls all day in their best attempt to make it so.

I have a couple of friends who work tech support for a couple of well-known companies, and I've heard their side of the equation, too. They'd like nothing better than to fix your problem quickly and to your complete satisfaction, because that's their job and it makes them feel good to do their job well. They get just as frustrated with the process as you do. So while I was writing this, I called my friends and talked with them about the problems we all experience, and got a good sense of what it takes to get fast, fast relief from studio headaches.

Put on your professional hat. My friends tell me that one of the keys to getting good support is acting like a pro on the phone. Don't jump out of your corner swinging. Remember that the guy on the other end listens to problems all day, every day. He wants to help, but nobody likes to deal with someone who's angry. Treat him like a friend and a professional, and you'll get the same treatment in return.

Do your homework before you call. This is the biggest mistake we all make. The stuff stops working, and we reach for the phone immediately, without taking the time to narrow the problem down. Now both parties get to enjoy the fun of debugging a system, starting at Every Good Boy Does Fine. "Did you try a different cable?" "Uh, no, let me try that...it didn't work." "Okay, did you trash the prefs file?" "Uh, no, hang on...." Fifteen minutes later, both you and the tech are getting sick of the whole thing. Worse, maybe it takes 15 minutes to find out that the problem isn't even where you thought it was.

You can avoid this tragedy by simply taking the time to troubleshoot *before* you call tech support. Swap cables, change mixer channels, power everything down for 10 minutes and go have a nice cuppa *chai*. Try everything you can think of to isolate the problem. (I know it takes time to do this, but you're going to end up doing it anyway.) Then, when you call the tech, you'll be able to say, "The problem is here, because we already tried all this other stuff." You immediately earn the tech's respect by being prepared, and get yourself a lot closer to solving the problem.

Read the manual. You know what RTFM means, right? If you're dealing with software or a SMPTE sync chain or some other complicated system, you might (read: probably) just have it set up wrong. Make sure you actually understand how the unit or program you're dealing with works before trying to communicate with the tech.

The best time to read the manual is before you start using the unit, but I know you guys...throw the wrapper away, get right to the candy. If you haven't already been through the docs, make it part of your pre-call checklist to

read the sections of the manual that pertain to the current problem. Half the time you'll save yourself a call.

Take notes. You don't want to call back again and sit on hold for another 10 minutes just to ask whether it was the green wire or the red one, do you? Have paper and pencil at the ready, and write down everything: the tech's name, what time you called, and everything he says. The troubleshooting advice could get complicated, and the palest ink is better than the best memory (to quote my old guitar teacher Lao Tzu).

And that's how you get better tech support. While I was researching this column, my friend Gary (one of the support technicians I mentioned) said something interesting. He spends part of his call time bolstering the caller's confidence in their ability to fix the problem. "I'm not physically *there* where the problem is...so I'm going to help them do the detective work," he said, "but *they're* actually going to fix it." Makes sense...when you tackle a tech problem confident that you and your Friend On The Phone will get it solved, you always seem to get a better result. Enjoy the holidays and remember: The enlightened Warrior knows the studio as a work in progress, and each technical mystery solved brings us all one step closer to audio *satori*. ■

WEBLINK

Have a question or comment for Jim Bordner? You can reach him at jim@gravitymusic.com.

WHY DO THEY CALL IT SOFTWARE WHEN IT'S SO DAMN HARD?

Troubleshooting software can be tougher than hardware. In addition to the steps mentioned in the column, Les Quindipan, tech support manager for Mark Of The Unicorn, suggests the following.

BEFORE YOU CALL:

- Write down the *exact* error messages you're getting.
- Find your registration info, including serial numbers and version numbers.
- Take a minute to jot down a few notes so you don't forget to ask a critical question.

DURING THE CALL:

- Be in front of your system, with the software running (if it *will* run, that is). Sound obvious? You'd be amazed.
- Describe the problem as clearly as possible. Paint the tech a precise visual picture of what's happening onscreen.
- Be patient; follow the tech and answer their questions — try not to get ahead.
- Don't get mad. I know the clock is ticking, but focus on the technical issue and let the tech do their job. You can't work when someone's yelling at you.

DFMUSICPLAYER@AOL.COM

The all-in-one digital studio arrives on our desktops

Coming of Age

Recently, I posted a question to my Web forum (www.eqmag.com) asking, in part, "How many of you are using Pro Tools or another DAW to mix your projects and/or as a complete studio solution?" Answers poured in from all over the world. Some Forum members swore by using a DAW as the foundation for their entire studio: recording, overdubbing, editing, mixing, and even mastering. Some users felt that a DAW was best suited for offline editing and recording, but for mixing they preferred a large format console (SSL and Neve were the preferred choices — no surprise there). Other users preferred to use a DAW as a tape machine only — leaving all mixing and effects processing to "outboard" equipment. "Kris" stated, "I'm doing it, not really as a preference though...after [I earned] a computer science degree, it was just the direction I was heading in. I'd prefer that my band record to some sweet tape through a classic Neve console."

"Oli P" commented, "I mix a lot in Pro Tools, and I'm starting to love it...mostly because of the convenience and control it gives me. Sound-wise, I'd still prefer an SSL, but the results I get in Pro Tools seem to match up nicely to SSL mixes (my mastering engineer thinks they're even better).

"Pro Tool's ability to manipulate timing and pitch, plus all the creative freedom with all the cool plug-ins makes it a winner. I also love that I can just save my mix when I need to, and pick up from where I left the next time." At the time of this writing, over 40 responses had been posted expressing some opinion on this topic. The one common denominator was that DAWs are not only here to stay, but that they are clearly the wave of the future as *complete* solutions.

Now, more than ever, I'm designing studios that have tape-based machines as the optional format! Just three years ago, nine out of ten studios that I installed had tape machines and a console as the foundation of the studio. Oftentimes, there was a DAW off to the side, used to "fly" parts around, comp vocals, and edit drum parts. As soon as the editing was done, the audio would get transferred back to the tape machine. Of course, nowadays we still need tape machines for a variety of reasons (sound and compatibility, to mention two). And, in a lot of situations, it's still necessary to install a console to submix lots of keyboards or for monitoring during tracking sessions. Lately, the Sony DMX-R100 board has been the flavor of choice among my clients, although, the Mackie D8B, Yamaha 02R, and Panasonic DA7 have all been viable solutions depending on budget and needs. TASCAM has a really cool digital mixer coming out next year for under $3,000 that looks great (see the First Look on page 26).

So what's the point, you might ask? The point is that although one size doesn't fit all, it seems as though we are in the midst of a major transformation in the way that music is recorded and mixed by professionals. Tommy Shaw (from Styx and Damn Yankees) tells me all the time how incredible it is for him to go into his garage (where we built his project studio) and just play. If he likes something, he hits record on his DAT machine and he's got it "stored." He leaves his 02R powered on at all times. It takes him literally three minutes to begin recording ideas. Olivia Newton-John — same thing. Less than two minutes, and she's recording ideas at home on an 03D, DAT machine, and some ADATs.

> "NOW, MORE THAN EVER, I'M DESIGNING STUDIOS THAT HAVE TAPE-BASED MACHINES AS THE OPTIONAL FORMAT!"

I see the emergence of DAW-based studios more as a meeting of technologies than a hostile takeover where one format becomes the standard. In the early '90s, ADAT was thought to be the next format, replacing multitrack analog and digital open-reel machines and taking over studios worldwide. Then TASCAM came out with the DA-series that offered a different sound and suite of options. Using these new formats, musicians could suddenly do their recording at home. In a very short time, prices and features went in opposing directions, adding more value and firepower than ever thought possible. Producers could work on arrangements, cut lead vocals, and do overdubs without an expensive, traditional "big" studio. If the parts sounded good, then they didn't have to be re-cut due to inferior sonic quality. More creative freedom. Less money spent. And better results. The '90s spawned a music technology revolution as we experienced the true birth of not only the home

studio, but, more important, the project (emphasis on "pro") studio in the home.

Today, we're seeing the continuing impact of technology. There's still no "one and only format." However, the most popular formats communicate with one another or can be translated, DAW file types are becoming unified (for instance, Pro Tools 5.1 will allow the use of WAV files), and most manufacturers are trying to work together rather than apart. We're witnessing a groundbreaking moment in the world of project studios in the home. Keep your eyes and ears open as it's only going to get more exciting and interesting as the days pass....

On a side note, I would like to thank all of the participants on my Web Forum for helping to make it such a great success. The number of knowledgeable, informed studio "techies" contributing to the forum is astounding. It's a great honor to serve as moderator and to actively participate in the daily pursuit of technical solutions on the Web. ■

WEBLINK

Have a question or comment for David Frangioni? Visit him online at the EQ Boards, www.eqmag.com.

MINNETONKA SURCODE

▶ continued from page 95

— but it would come in handy in certain situations.

In Use

I used SurCode to encode a variety of 16- and 24-bit WAV-format 5.1 mixes created in Steinberg Nuendo running on the PC, as well as several 16- and 24-bit AIF-format 5.1 mixes created in Pro Tools on a Mac. SurCode worked well in each case. The DTS encoding process is largely sonically transparent, but I did notice some change in the EQ of my mix; primarily a slight drop in the upper bass and lower midrange. Whether this results from how the LFE (subwoofer) channel is handled or something else, I can't say. Regardless, once you're aware of it, you can easily correct for this by pre-EQing your mix with the effects of the encode process in mind.

By the way, if you need to create short runs of your DTS-encoded discs, they can be duplicated just like any other audio CDs. I successfully made copies of SurCode-encoded discs on my computer-based burner as well as on a MediaForm CD-3701 (reviewed October, '00).

Surrounded

DTS-encoding is definitely a niche application. If you need it, you'll know it. And if you do need it, SurCode is the least expensive and easiest way I'm aware of to get it — assuming you have access to a PC and can get your six-channel mixes recorded into WAV or AIF format files.

As project studios cast an uncertain eye toward surround sound, fast, easy, and, above all, affordable solutions are going to be required for mixdown, editing, mastering, and end-product delivery. Minnetonka Audio Software's SurCode CD Professional provides one such solution. If your studio is making the leap to 5.1 surround, SurCode could be a vital tool for creating reference discs and delivering your productions. ■

WEBLINK

For more information on the DTS surround sound format, visit their Web site at www.dtsonline.com.

THE FEZ GUYS
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Updates on the current state of online music

Too Much of Everything

How big an issue is peer-to-peer file sharing? The two most popular presidential candidates have seen fit to address the issue. Says Vice President Al Gore (**www.algore2000.com**): "I think Napster (**www.napster.com**) is a terrific innovation...but we've got to find a way to reconcile this technology with artists' rights." Says Governor George W. Bush (**www.georgewbush.com**): "...the Napster case typifies some of the thorny questions we'll face." By the time you read this, one will have been elected President of the United States (**www.fedworld.gov**).

Following up on last month's overview on how to mold your music into a subscription service model, we now take a look at how some of the larger music business institutions are attempting to fold file-sharing apps into a subscription future. "If you can't beat 'em, join 'em." The motto, never truer then now, clearly shows that decision-makers for large music companies know that litigation cannot make file-sharing go away.

Subscribe!

The first old school wax warrior to defect is giant Bertelsmann Music Group (BMG, **www.bertelsmann.com**). They've struck a "strategic alliance" with Napster that will replace the chaotic, anarchic network of freely traded MP3-encoded music with a pay-to-play subscription service. Marc Geiger, CEO of ArtistDirect (**www.artistdirect.com**, a company invested in by all five of the major labels) has this comment on the proposed arrangement between Napster and BMG: "It doesn't make sense for the consumer," he says, "It tethers songs to the PC, and you can't take them off. It's in a secure format, and payment from the consumer ultimately requires that you get 40 songs for a flat rate, and then it goes to charging on a per-song basis." While the other large music labels haven't signed on (there's nothing to sign on to as the new service hasn't been launched yet), they've all issued cautiously optimistic statements and, of course, are excited about more licensing revenue. But if Napster turns itself into a subscription service that's too constricting to consumers, they risk the majority of their 38 million users jumping ship to other emerging alternatives.

Bankrupt Scour's (**www.scour.net**) assets are in the process of being picked up by Listen (**www.listen.com**) for $5.5 million and stock. Arguably the second most popular file-sharing app (after Napster), Scour is also headed toward a subscription system. Listen's big investments from traditional labels ensure they won't be rocking any boats. With a valuable tool to recraft and relaunch, Listen may justify your FezGuys's high hopes based on a history of non-partisan behavior and focus on useful tools.

Download!

And with most of the hurdles out of the way, Time-Warner (**www.timewarner.com**) will be acquired by AOL (**www.aol.com**) who, in turn, is contemplating how to morph their Instant Messenger tool into a subscription music service. Of course, all of the majors are currently pushing out digital download services from their own Web sites. Warner launched a secure download service November 2, and has added Microsoft's (**www.microsoft.com**) WindowsMedia to their existing relationships with RealNetworks (**www.realnetworks.com**) and LiquidAudio (**www.liquidaudio.com**). New secure WindowsMedia tracks are priced at $1.25 to $2.75 per track. BMG's downloadable music service offers tracks at prices ranging from $2 to $3.50 per single, $10 to $15 per album, and $21 for double albums. Sure is nice to see the big labels acknowledge digital distribution being so much more efficient and cheap and have dropped prices accordingly. *Not!*

Although we're glad to see the big boys finally supporting digital distribution models, we hope music fans aren't duped into thinking this sort of per-track price gouging is necessary. Happily, there are many sites, large and small, offering more affordable pricing ($.99/song).

Drive Dangerously!

Even the telecom companies are getting involved. Sprint (**www.sprint.com**) has entered the online music world, launching a service for their new PCS phone, the Samsung (**www.samsung.com**) Uproar, which holds up to 64 MB of MP3 music. The lengthy press release details all the Web-centric services for ripping and uploading your favorite music to **www.sprintpcs.com/mymusic** (using RealNetworks' RealJukebox product to encode), managing your playlists online in your personal 2 GB "locker" (sounds like myplay.com), and streaming it from the Web site or directly from your hard disk. Tellingly, very little of the release talks about how the wireless aspect of this package is used and gives virtually no detail on how easy it will be, how long it will take, or how much it will cost to download a song from your locker to your phone. The FezGuys wonder how many hapless pedestrians will have to be crushed under the wheel of a clueless driver who, after finally upgrading their phone to hands-free use, now

careen along at 70 mph trying to select an MP3 tune from a two-inch liquid crystal display. Also not stated directly (but we certainly hope) is the ability to hook the phone directly to your computer for music file transfers similar to the current crop of portable digital music players.

Bad Law!

The truly usurious "Work For Hire" amendment as been repealed by President Clinton (**www.whitehouse.gov**). Passed one year ago, the simple and ugly law allowed record companies to view music recordings like any physical object, bought once, paid for, and, in this case, unavailable to be recovered by the songwriter for 99 years or, in some cases, forever. Even with the repeal, song recordings are currently not recoverable by the songwriter for 35 years. Ever-unwilling to accept defeat, RIAA (**www.riaa.com**) lobbyists can be counted on to vigorously massage lawmakers during the next Congressional session. If you're a musician and you find yourself in the position of contracting with a "major label," you most likely will see some form of this "Work For Hire" arrangement included on your contract. Read the document closely. Find legal counsel. The "Work For Hire" clause is evil. Cross it out.

Meanwhile

Meanwhile, the industry-wide effort to set digital distribution standards (the Secure Digital Music Initiative or SDMI, **www.sdmi.org**) called for hackers to try and crack any of the four watermarking tools it rolled out recently. Although many members of the hacker community and the Electronic Frontier Foundation (EFF, **www.eff.org**) called for a boycott of the challenge, citing SDMI's benefit from getting free help for the development of a potentially restrictive service, enough hackers were interested (or maybe an especially industrious loner) to take the challenge. All four SDMI tools were well hacked within days. But, hey, that's what hackers do! What we haven't heard about is whether the SDMI president's credit cards got canceled.

New Life For Old Music!

The surviving members of The Doors have formed a new label, Bright Midnight Records, to release archival Doors material (**www.thedoors.com/gamma/bmr/main.htm**). While they're selling real CDs and not providing full-length MP3s for download, it's an interesting idea because it bypasses the mainstream music distribution system entirely. The CDs will not be sold in stores at all (other than smart record shop owners buying copies themselves and reselling them) — they're only available from the Web site. This is a perfect example of what can be done using current technologies to get back-catalogs off of dusty old shelves and out to a ready and willing-to-pay niche audience. ■

WEBLINK

Have a comment or question for the FezGuys? Visit www.fezguys.com.

WE GOT YER SOFTWARE!

Napster acquired Macster earlier this year and now that team has finally released a formal Mac version of the giant-killer. Macster users can even get "Napster for the Mac" by using an existing Macster user name and password.

RealNetworks has released the new audio portion of Real8 with their licensing of Sony's ATRAC3 codec. Claiming to now provide CD-quality at 64 kbps, they also have extended the available audio bitrates from the previous limit of 96k to 352k. The improved quality is definitely noticeable compared to Real's G2 Audio, though is not CD quality at 64 kbps to our ears.

BONZAI BEAT

▶ continued from page 42

"Dreamweaver." And it's got a great riff. Originally we were thinking of a more obscure song, but just before we started to record, they were playing this one and Joan really liked it. And she sounded so great — so we tried it out.

First we recorded it in a fairly conventional way and it sounded terrible, very boring, and I thought, "Why are you doing this?" She was singing it well, but it became clear that the record had to be much more extreme.

First we felt that the drums had to sound completely different. John Paterno started messing around with a Moog pedal, I think it's called a "MoogerFooger" — the phaser. We put that on the drums, and we gated 'em, and did just about anything to make a tripped-out sound.

Then we decided to make the guitar as aggressive as possible, so we went direct and used a fuzz tone on it, so it was very much in your face. For me, the concept became a cross between The Beastie Boys and early Tina Turner. That's where it wanted to live. The rawness of the way the Beastie Boys tend to do stuff, where it's just that dead simple, with almost nothing ever happening. But it's very aggressive. After that, the song came along very quickly.

After taking a long time getting the sound just right, we just ended up cutting the track on the spot. That vocal is a one take vocal — everything. She did the harmonies in two passes, and then a few overdubs. We were done.

What's the story with the laugh at the beginning?

That's what happened. The whole thing was just in the moment.

And then there's that descending glissando in the middle, as if she's fainting from too much love.

The Minimoog part, yeah. It was something we wanted to do that was truly stupid, and that was about as stupid as possible. It reminded me of an early disco song. It was real fun to do. And I hope that we successfully reinvented a record that was very good to begin with. When it was decided to make it a single, we added a few things to make it even more of a party record.

Closing thoughts on Ms. Osborne?

When Joan hits it, it's a great thing to see in the studio — she has a way of projecting her voice in a very charismatic way. It's coming from such a deep place; it's all in her placement of notes and where she lives. The way she describes it is that when everything is going right, it's almost like a way of breathing for her and she feels it all over. It's almost a transcendental experience, and you can tell when it happens.

I've seen her when she is absolutely electrifying. At those shows at The Mint, where she stepped on stage and sang with Jack Sh*t — there were no announcements, but the second she started singing, everyone would just turn and look. And listen. ■

ROOM WITH A VU

▶ continued from page 33

studio: "After I laid out the functionality aspect of the studio, I brought in an interior designer who had worked on nightclubs to create a space that looked cool. I wanted the room to make a statement before I played the first note. That sets things up so that when I hit someone with the sound, they're just blown away. The beautiful part of this is that we are completely surrounded by music and musicians. People come onto the grounds and know they're in the music business. Plus we can play as loud as we want, 24 hours a day, without anyone complaining. In addition, we have assembled a team of engineers and producers to complement our equipment selection — resulting in a powerhouse production/remix company that delivers creative products in ways that are truly efficient." ■

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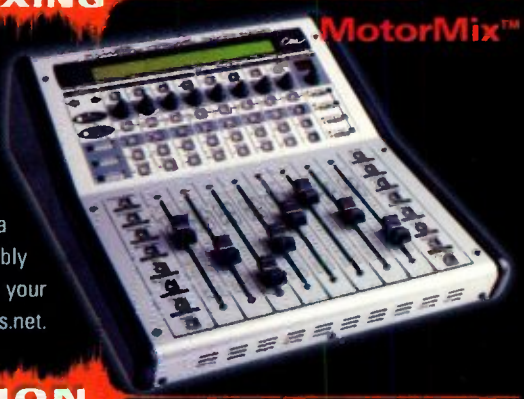

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STEINBERG CUBASE

▶ continued from page 98

you learn the commands you've specified. But the killer feature is that you can also tie these in to MIDI for remote control.

One problem with the interface for previous Cubase versions was a lack of unity among all the elements. The Arrange page looked like something left over from the Atari, the VST mixer resembled a hard-disk recording program, and the VST effects — with their limited interfaces and baroque rackmount look — inspired a "what were they thinking?" type of response. The new interface hasn't quite brought all these elements into complete stylistic harmony, but it is vastly better. The uniform look — gray with white lettering, and occasional colored accents — is very readable, and graphically ties the windows together.

Rocket Power

The Rocket Network enables collaboration over the 'Net, and Cubase now includes the software (originally a standalone application) required to access and use the system. Toward this end, including several virtual synths is a good idea as you can fly MIDI back and forth pretty fast, and if all collaborators use the same synths, you know *exactly* how it's going to sound. The Rocket Network concept is obviously a big deal, and *EQ* will be investigating it in far greater depth in a future issue. Suffice it to say that, with V5, you're ready to blast off into the world of cyberspace collaboration, if you're so inclined.

Is It Worth Upgrading?

You bet. As I was working with V5, I kept running into nice little touches that were so logical and fit in so well that I wondered whether these features had been in previous versions, and I had just missed them. But no, there really are that many little tweaks.

The irony, of course, is that you have to devote a lot of time to mastering these new tools so you can save time later. But frankly, all sequencers have to be learned; that's just part of the deal.

It's also worth mentioning how the upgrade affects "the Cubase experience." Long-time Cubase users will remember that it started on the Atari as a delightfully straightforward product. As the Atari's star waned, it was ported over to the Mac, where it continued to advance. When VST was introduced, I felt the program started to stumble; the audio was tentative, and few computers were really up to the demands of the program. A Windows port, while successful, was less stable than what was available on the Mac, and lagged behind in the feature set. During this period, although working with Cubase remained straightforward, I had the feeling that the program was becoming top-heavy, being built on a foundation that wasn't really capable of supporting the superstructure.

Some updates to the Windows version improved stability, and Apple helped the Mac cause by jettisoning older technology and introducing machines that were much more capable of running Cubase's novel features, such as VST and ReWire. Although these additions demanded a lot of a computer, they became truly usable as the G3-based machines became commonplace.

What strikes me most about V5 is that, once more, Cubase has regained that solid, effortless feel. No longer is the PC version a poor cousin to the Mac version; it has stepped into its own. Steinberg did their homework before releasing this baby: I checked the Web site to see if any updates or bug fixes were available, but so far that hasn't been deemed necessary. I've been told there are a few problems with certain plug-ins, such as the Prosoniq Orange Vocoder, but all of those I tested worked fine.

V5 is the version that puts it all together — audio, VST 2.0, ReWire, MIDI, customization, stability, and interface. If you've been a Cubase fan, you'll be amply rewarded for your loyalty. If you're working with another sequencer, I'm not sure there's any compelling reason to change, unless you demand the ultimate in plug-in performance. But that's no real surprise: frankly, all sequencers are complex enough to qualify as musical instruments in their own right, and it takes practice to master them. You're not going to throw away years of familiarity to gain a few extra features.

All in all, I must say that working with V5 was a joy. Despite greatly increased functionality (translation: there's a lot to learn if you want to make full use of this puppy), it remains a workmanlike program that has reached a level of maturity commensurate with its years. Steinberg has done a great job of making sure their existing customer base has no reason to look elsewhere. ■

WEBLINK

For Cubase updates, news, information, discussion forums, articles, downloads and more, visit www.cubase.net.

AL KOOPER

▶ continued from page 118

license my song for a fee and royalties, then they're contributing to that income. I'm open to something like that, *plus* it's *my* decision to make. But if some hungover frat guy is downloading a song I wrote so he can have the proper cool soundtrack to get some nookie later that night, my rights are being as violated as those of his soon-to-be-arriving date.

At this juncture in my life, I don't fill stadiums and arenas and sell millions of CDs (actually, I never did that!). I just wanna live comfortably in my senior years based on the lifetime of work I put in up to now. Hell...I want my Rock 'n' Roll Un-Social Security! And Napster and networks like Napster are literally snatching it off my plate in the name of "sharing the music." Whatever happened to "sharing the income"?

Now I don't think for a moment that 67,000 people are downloading my songs for free. But if it's allowed to happen a few times, it will geometrically increase until I have a real problem taking care of myself in the near future. That's just not fair. Now I'm not looking for pity or singling myself out. I've spent my life doing what I always dreamed of doing and I was damned lucky. Many of my friends are in a far worse position than I am. They live from one royalty check to the next. It's not pretty and, at their age, their choices are few, if any. Should people in their position be penalized so that other people can have fun on their computers? I think not.

I can't believe that after all these years the law doesn't routinely protect me from something as blatant as this. Suppose you invented a new kind of hammer. Suppose you patented that hammer in order to protect your invention. Suppose an Internet company lay in wait and hijacked your shipping trucks and offered your hammers free to anyone who logged on to their site — worse yet, in order to offer your hammer for free, they cut its quality by ten-fold. How long do you think the law would allow *that* to continue? Well, it's the same with Napster except that, today, music is easier to hijack than hammers.

Once again, I can see the value in this revolution for younger, on-the-make bands. But have I created and played for 43 years to have my income cut off on a cyberwhim? Will my "children" be prevented by kid-napsters from helping me in my old age? I shudder to think.

[*Editor's Note: As we went to press, an announcement was made regarding an agreement between Napster and BMG. When asked his opinion of this announcement, Al Kooper replied, "The BMG involvement is like sticking a tampon in a flooded Holland Tunnel."*] ■

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CIRCLE 05 ON FREE INFO CARD

HARD DISK RECORDING

digidesign® AVID
A Division of Avid Technology, Inc.

DIGI001 Digital Audio Workstation For Mac And PC

A completely integrated digital recording, mixing and editing environment for the Mac and PC, the DIGI-001 offers a 24-bit multi I/O breakout interface along with Pro Tools LE software— based on Digidesign's world renowned ProTools software. The DIGI-001 interface features 18 simultaneous I/Os made up of 8 analog inputs and outputs— two of the inputs are full featured mic preamps with phantom power, and digital I/O including standard S/PDIF as well as an ADAT optical interface that can also be used as a S/PDIF I/O. ProTools LE supports 24 tracks of 16 or 24-bit audio and 128 MIDI tracks and also features RealTime AudioSuite (RTAS) effects plug-ins. For ease of use, MIDI and audio are editable within the same environment and all mixing parameters including effects processing can be fully automated.

FEATURES–

- 18 simultaneous, 24-bit ins and outs with support for 44.1 and 48 kHz sample rates
- 20Hz - 22kHz freq. response ± 0.5 dB
- 2 channel, XLR mic/1/4" line inputs with -26 dB pad, 48v phantom power, gain knob, and HP Filter at 60Hz
- 6 ch. line inputs (1/4") TRS balanced/ unbalanced w/ software controlled gain
- +4dB balanced 1/4-inch Main outputs
- Balanced 1/4" monitor outs with front panel gain knob
- 1/4-inch unbalanced line outputs channels 3-8
- Headphone output with independent gain control knob
- 2 channel S/PDIF coaxial digital I/O
- 8 channel ADAT optical I/O can also be used as 2 channel optical S/PDIF

Pro Tools LE

- Supports 24 tracks of 16 or 24-bit audio and 128 sequenced MIDI tracks
- Sample-accurate simultaneous editing of audio & MIDI
- Real-time digital mixing capabilities include recall of all mixing parameters, support for edit and mix groups and complete automation of all volume, panning, mutes and plug-ins.
- Route and mix outboard gear in realtime
- MP3 and RealAudio G2 file support (Mac)

- Two plug-in platforms offer multiple options for effects processing— Real-Time AudioSuite (RTAS) is a host-based architecture that allows an effect to change and be dynamically automated in realtime as the audio plays back. —AudioSuite is a file-based format, that renders a new file with the processed sound.
- Bundled RTAS plug-ins include, 1 and 4-band EQ, Dynamics II- compressor, limiter, gate and expander/gate; Mod Delay - short, slap, medium, and long delays with modulation capabilities for chorus or flange effects and dither. AudioSuite plug-ins include Time Compression/Expansion, Pitch Shift, Normalize, Reverse.

MIDI Functions

- MIDI functions include graphic controller editing, piano roll display, up to 128 MIDI tracks and editing options like quantization, transpose, split notes, change velocity and change duration.
- MIDI data can be edited on the fly

MOTU AUDIO Hard Disk Recording Systems

The MOTU Audio System is a PCI based hard recording solution for the Mac and PC platforms. At the heart of the system is the PCI-324 PCI card that can connect up to three audio interfaces and allows up to 72 channels of simultaneous I/O. Audio interfaces are available with a wide range of I/O configurations including multiple analog I/O with the latest 24-bit A/D/A converters and/or multi channel digital I/O such as ADAT optical and TDIF I/O as well as standard S/PDIF and AES/EBU I/O. Each interface can be purchased separately or with a PCI-324 card allowing you to build a system to suit your needs. Includes drivers for all of today's hottest audio software and AudioDesk, multitrack recording and editing software for the Mac.

THEY ALL FEATURE–

- Mac OS and Windows compatible • Includes software drivers for compatibility with all of today's popular audio software plus AudioDesk, MOTU's sample-accurate audio workstation software for Mac OS • Host computer determines the number of tracks that the software can record and play simultaneously, as well as the amount of real-time effects processing it can support • Front panels display metering for all inputs and outputs

- **AudioDesk Audio Workstation Software** for Mac OS features 24-bit recording, multi-channel waveform editing, automated virtual mixing, graphic editing of ramp automation, real-time effects plug-ins with 32-bit floating point processing, crossfades, support for third-party audio plug-ins (in the MOTU Audio System and Adobe Premiere formats), background processing of file-based operations, sample-accurate editing and placement of audio, and more

1296 24-bit/96kHz Interface Features–

- 24-bit, enhanced multi-bit 128x oversampling 96kHz converters • A-weighted signal-to-noise ratio of 117 dB
- 12 Balanced XLR inputs and outputs can support two simultaneous 5.1 mixes • AES/EBU I/O with sample rate conversion both in and out • Compatible with existing PCI-324 cards (requires new PCI-324 driver)• Connect up to 3 1296 interfaces to one PCI-324 card for a total of 36 inputs and outputs or mix and match the 1296 interface with up to three of the other MOTU audio interfaces

2408 mkII FEATURES–

- 7 banks of 8 channel I/O: 1 bank of analog, 3 banks of ADAT optical, 3 banks of Tascam TDIF, plus stereo S/PDIF.
- Custom VLSI chip for amazing I/O capabilities • • Format conversion between ADAT and DA-88
- 8x 24-bit 1/4" balanced analog I/Os • 24-bit internal data bus for full 24-bit recording via digital inputs • Standard S/PDIF I/O for digital plus an additional S/PDIF I/O for the main mix • Sample-accurate synchronization with ADATs and DA88s via an ADAT SYNC IN and RS422

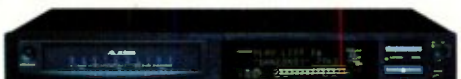
1224 FEATURES–

- 24-bit analog audio interface • State-of-the-art 24-bit A/D/A • Simultaneously record and play back 8 channels of balanced (TRS) +4 dB audio • 24-bit balanced +4 XLR main outputs • Stereo AES/EBU digital I/O • Word clock in/out • Dynamic range of 116 dB (A-weighted) • Front panel displays six-segment metering for all inputs and outputs • Headphone jack with volume knob

CD RECORDING/MASTERING

ALESIS Masterlink ML-9600 High-Resolution Master Disk Recorder

The Alesis MasterLink ML-9600 is a 2-track 24-bit recorder that combines hard disk recording, CD burning, digital signal processing, and mastering functions to create compact discs in the standard "Red Book" 16-bit/44.1kHz format, or high resolution CDs that utilize Alesis' revolutionary CD24 AIFF-compatible technology. MasterLink is capable of recording and playing up to 24-bit/96kHz resolution CDs using the inexpensive, readily available CD-R media. The amazing sonic quality, powerful built-in tools and CD24 technology offers a uniquely versatile and affordable solution for everyone from large commercial audio facilities to project studios and recording musicians.



FEATURES–

- 24-bit 128x oversampling analog to digital and digital to analog converters
- Supports 44.1, 48, 88.2, 96 kHz sample rates and word lengths of 16-, 20- and 24-bit
- 20Hz-20kHz frequency response at 44.1/48 kHz sample rates
- 20Hz-40kHz, frequency response at 88.2/96 kHz sample rates
- 113dB signal-to-noise ratio (A-weighted)
- Matsushita ATAPI CD-ROM drive allows up to 4x CD burning using standard CD-R discs.
- Built-in sample rate conversion & noise shaping to change sample rates & bit resolution as needed
- Reads and Writes 16-bit 44.1kHz Red Book Audio CDs
- Alesis' exclusive CD24 is a high-resolution mastering format that reads/writes files up to 24-bit 96kHz in the ISO 9660 disc format. AIFF caompatible file format that can be read by MacOS, Windows and Unix computer platforms.
- Built-in 3.2GB IDE hard drive
- Hard disk max recording times 95 min. @ 24-bit/96kHz 310 min. @ 16-bit/44.1kHz
- Create and store up to 16 playlists containing as many as 99 tracks

Analog Inputs and Outputs

- Balanced XLR connectors (+4dBu input and +19dBu max. output)
- Unbalanced phono (RCA) connectors (-10dBV input and +5dBV max. output)
- 1/4-inch TRS headphone output with level control

Digital Inputs and Outputs

- AES/EBU balanced XLR inputs and outputs
- S/PDIF unbalanced phono (RCA) inputs and outputs

Editing

- Gain control
- Cropping allows adjusting start and end points.
- Join and Split features allow combining and separating song sections.

DSP Finishing Tools

- Equalization, Compression, Normalizing and Peak Limiting

Includes

- Infra red remote control and rackmount brackets

marantz CDR-631 Professional CD Recorder

The CDR631 offer all the features and functions of the CDR630, its popular predecessor, but adds many features and functions that were previously unavailable. Its full complement of digital and analog connections lets you record your own CDs from audio sources such as CDs, LPs, cassettes, DAT, or even a computer.

Features–

- Pro and consumer CD-R and CD-RW compatible
- Track titles can be saved and edited in CD-TEXT format that can be read on CD-TEXT compatible CD players
- Memory buffer that prevents the beginning of tracks from getting cut off
- Menu selectable SCMS copy protection

- Digital and analog record level and balance control
- XLR-Balanced and RCA unbalanced analog inputs
- AES/EBU (XLR), Coaxial, and Optical digital inputs
- Unbalanced (RCA) analog and Coaxial digital outputs including Coaxial loop-out for unprocessed connection to other digital equipment
- IR remote control included

MICROBOARDS StartREC Digital Audio Editing/ CD Duplication System

The Microboards StartREC is the first digital audio editing system combined with a multidrive CD recordable duplication system for professionals. Audio is recorded to the internal 6.2 GB IDE hard drive using analog or digital inputs. Sample rate conversion is automatic. Tracks can be edited and sequenced using the StartREC's user friendly interface and up to 4 CDs can be recorded simultaneously. StartREC is the ideal solution for studio recording, mastering, post production or any pro audio environment requiring digital audio editing and short run CD-R duplication.

Features–

- 2X, 4X, or 8X recording speeds
- 6.2GB IDE hard drive
- Editing functions include move, divide, combine or delete audio tracks, add or drop any index or sub index, and create track fade in or fade out
- Coaxial SP/DIF or AES/EBU digital input plus optical S/PDIF I/O
  XLR balanced and RCA Line inputs and outputs

- Automatic sample rate conversion from 32 and 48kHz
- Automatic CD Format Detection feature and user friendly interface provide one touch button operation
- Front panel trim pot and LCD display provide accurate input signal and time lapse metering
- SCMS (Serial Copy Management System) is supported regardless of the source disc copy protection status
- **StartREC Models Include:** ST2000 (2) 8x writers, ST3000 (3) 8x writers and ST4000 (4) 8x writers

DIGITAL MULTI-TRACK RECORDERS

TASCAM MX-2424 24-Bit 24-Track Hard Disk Recorder

Co-designed by TASCAM and TimeLine Inc., the MX-2424 is an affordable 24-bit, 24-track hard disk recorder that also has the editing power of a digital audio workstation. A 9GB internal hard drive comes standard as well as a SCSI Wide port that supports external LVD (Low Voltage Drives) hard drives from up to 40 feet away. An optional analog and several digital I/O cards are available so the MX-2424 can be configured to suit your work environment. SMPTE synchronization, Word Clock, MIDI Time Code and MIDI Machine Control are all built in for seamless integration into any studio.

- Records 24 tracks of 24-bit audio at 44.1 or 48 kHz, or 12 tracks at 88.2 or 96 kHz. Up to 24 tracks can be recorded simultaneously using any combination of digital and analog I/O.
- Supplied 9GB internal drive allows 45 minutes of audio across all 24 tracks
- Wide SCSI port on the back panel allows you to add multiple drives. A front 5-1/2" bay available for installing an additional drive, or an approved DVD-RAM drive for back-up.
- ViewNet MX, a Java-based software suite for Mac and PC offers DAW style editing of audio regions, dedicated system set-up screens that make set-up quicker and easier and track load screens that make virtual track management a snap. Connects to a computer via a standard Ethernet line.
- Can record to Mac (SDII) or PC (.WAV) formatted drives, allowing later export to the computer. The Open TL format allows compatible software to recognize virtual tracks without have to load, reposition and trim each digital file.

Transport Controls-
- Jog/scrub wheel
- MIDI In, Out, and Thru ports are built-in for MIDI Machine Control.

Editing-
- Built-in editing capabilities include cut, copy, paste, split and ripple or overwrite
- 100 levels of undo
- Supports destructive loop recording and non-destructive loop recording which continuously records new takes without erasing the previous version

Build-In Synchronization-
- TBUS protocol can sample accurately lock 32 machines together for 384 tracks at 96kHz, or 768 tracks at 48kHz.
- Can generate or chase SMPTE timecode or MIDI Time Code.
- Word Clock In, Out, and Thru ports

I/O Options-
- Optional analog and digital cards all provide 24 channels of I/O. There is one slot for analog and one for digital.
- IF-TD24- TDIF module
- IF-AD24- ADAT™ Lightpipe module
- IF-AE24- AES/EBU module
- IF- AN24- A-D, D-A I/O module with DB-25 connectors

Software Updates-
- System updates are made available through a front panel Smart Card slot or via computer directly from the TASCAM web site.

DA-78HR Modular Digital Multitrack

The DA-78HR is the first true 24-bit tape-based 8-track modular digital multitrack recorder. Based on the DTRS (Digital Tape Recording System) it provides up to 108 minutes of pristine 24-bit or 16-bit digital audio on a single 120 Hi-8 video tape. Designed for project and commercial recording studios as well as video post and field production, the DA-78HR offers a host of standard features including built-in SMPTE Time Code Reader/Generator, MIDI Time Code synchronization and a digital mixer with pan and level controls. A coaxial S/PDIF digital I/O allows pre-mixed digital bouncing within a single unit, or externally to another recorder or even a DAT or CD recorder. Up to 16 DTRS machines can be synchronized together for simultaneous, sample accurate control of 128 tracks of digital audio.

Features-
- Selectable 16 bit or 24 bit High Resolution audio
- 24 bit A/D and D/A converters
- >104dB Dynamic range
- 20Hz - 20kHz frequency response ±.5dB
- 1 hr. 48 min. recording time on a single 120 tape
- On-Board SMPTE synchronizer - chase or generate timecode
- On-Board support for MIDI Machine Control
- Internal digital mixer with level and pan for internal bouncing, or for quick mixes
- Track slip from -200 to +7200 samples
- Expandable up to 128 tracks (16 machines)
- Word Sync In/Out/Thru
- Analog output on DB25 balanced or RCA unbalanced
- Digital output on TDIF or 2 channels of S/PDIF

A TO D CONVERTERS

APOGEE Rosetta 24-bit A to D Converter

The high-end quality analog to digital solution for the project studio. With support for both professional and consumer digital formats you can now record your audio at a higher resolution and with greater detail than standard converters found on MDM's, DAT's and DAW's. Ideal for mastering or tracking.

FEATURES–
- 24-bit, 44.1-48, 88.2-96 kHz Sample Rate (±10%)
- 116dB dynamic range (unweighted)
- Improved UV22HR for 16 and 20-bit A/D conversion

FRONT PANEL:
- Power switch • Sample Rate (44.1, 48, 88.2, 96kHZ)selector • 16-bit (UV22), 20-bit (UV22) and 24-bit resolution selector • S/PDIF-ADAT optical selector • Soft Limit on or off • 12-segment metering w/ over endicator & Meter Clear switch • Level trim

REAR PANEL:
- XLR balanced inputs • 2 x AES/EBU for 88.2/96kHz 2 channel pair. Coaxial S/PDIF, switchable S/PDIF or ADAT optical outputs • Wordclock out

LUCID AD 9624 24-bit A to D Converter

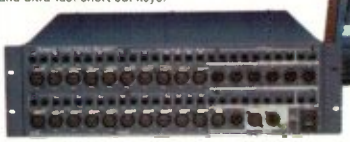
Transparent analog to digital conversion designed to bring your music to the next level. XLR balanced inputs feed true 24-bit converters for revealing all the detail of the analog source. 16-bit masters can take advantage of the AD9624's noise shaping function which enhances clarity of low level signals.

FEATURES–
- 24-bit precision A/D conversion • Support for 32 44.1, 48, 88.2 & 96kHz sample rates • Wordclock sync input• Selectable 16-bit noise shaping • Simultaneous AES/EBU, coaxial and optical S/PDIF outputs • 20-segment LED meters w/ peak hold & clip indicators • **ALSO AVAILABLE:** DA9624 24-bit D/A converter

DIGITAL MIXERS

Roland VM Basic 72 Digital Mixing System

The all digital Roland V-Mixing System, when fully expanded, is capable of mixing up to 94 channels with 16 stereo (32 mono) onboard multi-effects including COSM Speaker Modeling. Utilizing a separate-component design, comprised of the VM-C7200 console and VM-7200 rackmount processor, allows the V-Mixing System to be configured to suit your needs. Navigation is made easy via a friendly user interface, FlexBus and EZ routing capabilities as well as a large informative LCD and ultra-fast short cut keys.



- 94 channels of digital automated mixing (fully expanded)
- Up to 48 channels of ADAT/Tascam T-DIF digital audio I/O with optional expansion boards and interfaces
- Separate console/processor design
- Quiet motorized faders, transport controls, total recall of all parameters including input gain, onboard mixer dynamic automation and scene memory
- 24 fader groups, dual-channel delays, 4-band parametric channel EQ + channel HPF
- FlexBus and "virtual patchbay" for unparalleled routing flexibility
- Up to 16 stereo (or 32 mono) multi-effects processors using optional VS8F-2 Effects Expansion Boards (2 stereo effects processors standard)
- COSM Speaker Modeling and Mic Simulation Technology
- 5.1 Surround mixing capabilities
- EZ Routing allows mixer settings to be saved as templates
- Realtime Spectrum Analyzer checks room acoustics in conjunction with noise generator and oscillator
- Digital cables between processor and mixer can be up to 100 meters long- ideal for live sound reinforcement.

- **VS8F-2 Effects Expansion Board** -- Provides 2 stereo effects processors including COSM Speaker Modeling. Up to 3 additional boards can be user-installed into the VM-7200 processor, for 8 stereo or 16 mono effects per processor.
- **VM-24E I/O Expansion Board** -- Offers 3 R-Bus I/Os on a single board. Each R-Bus I/O provides 8-in/8-out 24-bit digital I/O, totalling 24 I/O per expansion board.
- **OIF-AT Interface Box for ADAT/Tascam** -- Converts signals between R-Bus (VM-24E expansion board required) and ADAT/Tascam T-DIF. Handles 8-in/8-out digital audio. 1/3 rackmount size.
- **VM-24C Cascade Kit** -- Connects two VM-Series processor units. Using two VM-7200 processors cascaded and fully expanded with R-Bus I/O, 94 channels of audio processing are available.

EFFECTS & PROCESSING

Lexicon MPX-500 24-Bit Dual Channel Effects Processor

The MPX 500 is a true stereo 24-bit dual-channel processor and like the MPX100 is powered by Lexicon's proprietary Lexichip and offers dual-channel processing. However, the MPX 500 offers even greater control over effects parameters, has digital inputs and outputs as well as a large graphics display.

- 240 presets with classic, true stereo reverb programs as well as Tremolo, Rotary, Chorus, Flange, Pitch Detune, 5.5 second Delay and Echo
- Balanced analog and S/PDIF digital I/O
- 4 dedicated front panel knobs allow adjustment of effect parameters. Easy Learn mode allows MIDI patching of front panel controls.
- Tempo-controlled delays lock to Tap or MIDI clock

t.c electronic M-One Dual Effects Processor

The M-One allows two reverbs or other effects to be run simultaneously, without compromising sound quality. The intuitive yet sophisticated interface gives you instant control of all vital parameters and allows you to create awesome effects programs quickly and easily.

- 20 incredible TC effects including Reverb, Chorus, Tremolo, Pitch, Delay and Dynamics
- Analog-style user interface
- 100 Factory/100 User presets
- Dual-Engine design
- 24 bit A/D-D/A converters
- S/PDIF digital I/O, 44.1-48kHz
- Balanced 1/4" Jacks - Dual I/O
- 24 bit internal processing

D-Two Multitap Rhythm Delay

Based on the Classic TC2290 Delay, the D-Two is the first unit that allows rhythm patterns to be tapped in directly or quantized to a specific tempo and subdivision.

- Multitap Rhythm Delay
- Absolute Repeat Control
- Up to 10 seconds of Delay
- 50 Factory/100 User presets
- 24 bit A/D-D/A converters
- S/PDIF digital I/O, 44.1-48kHz
- Balanced 1/4" Jacks - Dual I/O
- 24 bit internal processing

ALL ITEMS ARE COMPLETE WITH ALL ACCESSORIES AS SUPPLIED BY MANUFACTURER

CIRCLE 05 ON FREE INFO CARD

MICROPHONES

AKG C414 TLII "Vintage TL"

Combines the best of old and new: legendary C12 acoustics and the latest generation of C414 transformerless FET electronics. Although similar in design and shape to the C414BULS, the TLII features a capsule that is a faithful sonic recreation of the one used in the classic C12 tube mic combined with computer-aided manufacturing techniques that assure greater uniformity in response from microphone to microphone.

FEATURES-

- Cardioid, hypercardioid, omnidirectional and figure 8 polar patterns
- Warm, smooth microphone that is suitable for high-quality digital recording.
- **Frequency response 10Hz to 20kHz**

C4000B ELECTERET CONDENSER

This new mic from AKG is a multi polar pattern condenser micropone using a unique electret dual large diaphram transducer. It is based on the AKG SolidTube deisgn, except that the tube has been replaced by a transistorized impedance converter/ preamp. The transformerless output stage offers the C4000B exceptional low frequency

FEATURES-

- Electret Dual Large Diaphram Transducer (1st of its kind) • Cardioid, hypercardioid & omnidirectional polar patterns • High Sensitivity
- Extremely low self-noise • Bass cut filter & Pad switches • Requires 12, 24 or 48 V phantom power
- Includes H-100 shockmount and wind/pop screen
- **Frequency response 20Hz to 20kHz**

RØDE NT-2 Condenser Mic

The RØDE NT2 is a large diaphragm true condenser studio mic that features both cardioid and omnidirectional polar patterns. The NT-2 offers superb sonic detail with a vintage flavor for vocal and instrument miking. Like all RØDE mics the NT-2 is hand-assembled in Australia and is available at a breakthrough price.

FEATURES-

- Dual pressure gradient transducer • 1" capsule with gold-sputtered membranes • Low noise, transformerless circuitry • Omni and cardioid polar patterns • 135dB Max SPL • High pass filter switch and -10dB pad switch • Gold plated output connector and internal head pins
- Shockmount, Flight Case, and Pop Filter included
- **20Hz-20kHz frequency response**

audio-technica. AT4047 Cardioid Condenser

The AT4047 is the latest 40 Series large diaphragm condenser mic from Audio Technica. It has the low self noise, wide dynamic range and high sound pressure level capacity demanded by recording studios and sound reinforcement professionals.

FEATURES-

- Side address cardioid condenser microphone for professional recording and critical applications in broadcast and live sound
- Low self noise, wide dynamic range and high SPL
- Switchable 80Hz Hi Pass Filter and 10dB pad
- **Includes** AT8449/SV shockmount

MICROPHONE PREAMPS

AVALON DESIGN VT-737SP Mono Class A, Vacuum Tube-Discrete Preamp-Opto-Compressor-Equalizer

The VT-737SP is a vacuum tube, Class A processor that combines a mic preamp, instrument DI, compressor and sweepable 4-band equalizer in a 2U rack space. Like all Avalon Design products the VT-737SP utilizes a minimum signal path design with 100% discrete, high-bias pure Class A audio amplifiers and the best active and passive components available. Used by renowned artists and studios world wide and the winner of the Electronic Musician 1999 Editors' Choice Award for Product Of The Year.

FEATURES–

- Combination of TUBE preamplifiers, opto-compressor, sweep equalizer, output level and VU metering in a 2U space
- Four dual triode vacuum tubes, high-voltage discrete Class A with a 10 Hz to 120kHz frequency response ±0.5dB
- **The Preamp** has three input selections- The first is a high performance XLR balanced mic input transformer with +48v phantom power, the second is a high impedance instrument DI with a 1/4" jack located on the front panel and the third is a discrete high-level Class A balanced line input.
- High gain switch boosts overall preamp gain and a passive- variable high pass filter, hardwire relay bypass and phase reverse relay is available for all three inputs
- **The Opto-Compressor** uses a minimum signal path design and features twin Class A vacuum tube triodes for gain matching. A passive optical attenuator serves as a simple level controller. Variable threshold, compression ratio and attack and release offer dynamics control from soft compression to hard-knee limiting.
- The dual sweep mid-EQ can be side chained to the compressor allowing a broad range of spectral control including de-essing. The EQ can be assigned pre and post compressor from the front panel to add even greater sonic possibilities.
- Two VT-737 SPs can be linked together via a rear panel link cable for stereo tracking
- **The Equalizer** utilizes 100% discrete, Class A-high-voltage transistors for optimum sonic performance.
- The low frequency passive shelving EQ is selectable between 15, 30 60 and 150HZ with a boost and cut of ±24dB
- The high frequency passive shelving EQ is selectable between 10, 15, 20 and 32 kHZ with a boost and cut of ±20dB
- The low-mid frequency is variable between 35 to 450 Hz while the high-mid frequency is variable from 220Hz to 2.8 kHz. Both mid-band frequencies offer a boost and cut of ±16 dB and a hi-Q/lo-Q switch.
- When the EQ to side chain is used, the low and high EQ is still available for tonal adjustment
- **The Output** level is continuously variable and utilizes an another dual triode vacuum tube driving a 100% Class A, high-current balanced and DC coupled low noise output amplifier.
- Sealed silver relay bypass switches are used for the most direct signal path

POWERED STUDIO MONITORS

VERGENCE A-20 Studio Reference Monitor System

Incorporating a pair of 2-way, acoustic suspension monitors and external, system-specific 250 watt per side control amplifier, the A-20 provides a precise, neutral studio reference monitoring system for project, commercial and post production studios. The A-20's control amplifier adapts to any production environment by offering control over monitoring depth (from near to far field), wall proximity and even input sensitivity while the speakers magnetic shielding allows seamless integration into today's computer based studios.

- Type Modular, self-powered near/mid/far-field monitor.
- 48Hz - 20kHz frequency response @ 1M
- Peak Acoustic Output 117dB SPL (100ms pink noise at 1M).
- XLR outputs from power amp to speakers
- Matched impedance output cables included.
- -6dB LF Cutoff 40Hz
- 5 position wall proximity control
- 5 position listening proximity control between near, mid and far-field monitoring
- Power, Overload, SPL Output, Line VAC and Output device temperature display.

Amplifier

- Amplifier Power 250W (continuous rms/ch), 400W (100ms peak).
- XLR, TRS input connectors
- Headphone output
- 5-position input sensitivity switch with settings

Speakers

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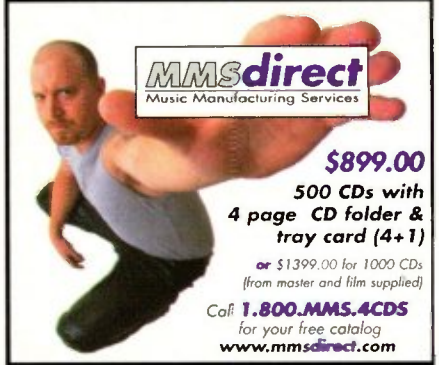
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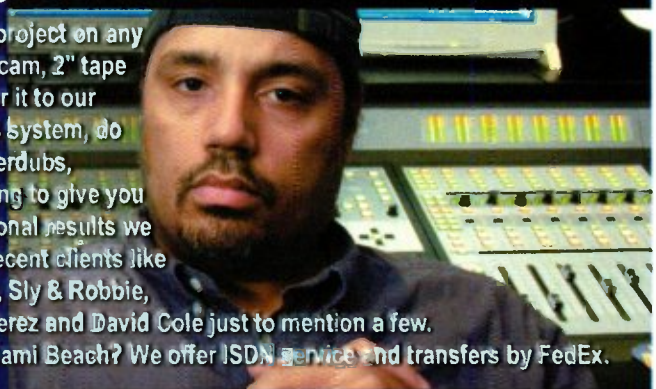

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THOM PANUNZIO

▶ continued from page 69

rather than giving him a pristine, crystal clear vocal sound, you put it through a little Marshall or Pignose amp to disguise it.

A typical problem in mixing is getting a vocal to sit in the track correctly. What sort of tricks or techniques have you come up with for getting a vocal to lay in there just right?

There are a lot of different ways to do it. Sometimes, if you have a big snare drum, you need to pan it off to the side a little bit. Or maybe you need to take a little of one frequency out and let the vocal pop through. Sometimes you've got to make the vocal a little bit louder than you'd normally make it, but then put something on it to give it some dimension so it doesn't sound like it's going to fall off the front of the speaker. If you have lots of things in the middle, you've got to put them to the sides; sometimes just the effect can make a big difference.

One thing I used to do — and I still do it occasionally if I can find one — is, I'll take a Dolby two-track and I'll hook it up backwards and put the vocal through it so I have a fader with the vocal un-Dolby'ed and noisy, since it's encoded but not decoded — similar to the Aphex [Aural Exciter] effect. Then you mix that in a little bit. A lot of times I'll take a mult of the vocal, and I'll run [one channel] through a 1176 and limit it a lot — I do that a lot, maybe EQ that one a little differently, too, or maybe [set up a channel that] will have more of an effect on it. Or put the signal in the room through a Marshall amp and just mix a little bit of it in, not so it sounds like the devil, but so it gives it an edge.

Presumably you need to check carefully for phase.

Sure, anything and everything should always be checked for phase. I go through every microphone cable and piece of outboard gear; I check the bass drum phase with the overheads, I check the snare with the overheads, I check the toms with the bass drum, I check the toms with the snare — you've just got to go through all that. Same thing with guitar mics — if you can't get a good guitar sound, chances are half of them are out of phase. All you've got to do is just hit the [phase reverse] button on the console and see if it sounds better in or out of phase. It's very simple; you just go down the line and check it. It takes no time — if it took an hour, it would be well worth it for the trouble it saves you later.

This interview is excerpted from Howard Massey's new book *Behind The Glass*, now available from Miller Freeman Books.

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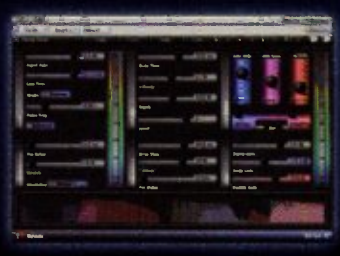

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The moogerfooger Analog Delay is simply the coolest (and warmest!) delay in the digital domain. Due to component shortages, fewer than 1,000 "real world" versions exist! Bomb Factory snagged serial #1 and, as always, meticulously modeled every detail of Dr. Moog's classic analog design. Wait until you hear it!

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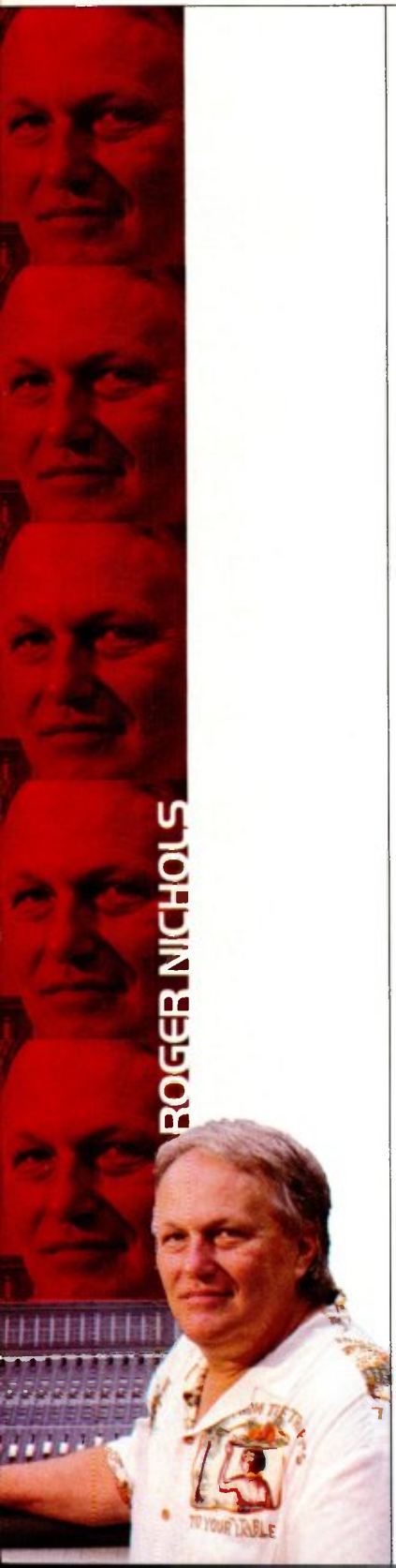

Well, the real Millennium is finally just around the corner. As far as I can tell, there was no year zero. Nobody started using zero as a number for something until the advent of computers. If the first number you counted was zero, then you could actually store something at that address. A byproduct of this counting scheme has led me to a hotel in Key West. The hotel's address is Zero Duval. Right on the water. The computers at the Post Office handle the address just fine.

Actually, there are other uses for zero. My wife says that is exactly what I am getting for Christmas. One of my favorite actors was named Zero Mostel. Mitsubishi made the Japanese Zero. The coldest temperature in the universe is Absolute Zero. I asked my bartender how much Russian Vodka he had left. He replied "Absolut, zero!"

Bits, Bits, Bits

My wife says all I do is bits. It's 20 bits this, 24 bits that. I mean, what's the floating point? Just when you thought it was safe to abandon your trustworthy analog recorder for digital audio, the bit wars begin. It is as bad as the ballot recounting in Palm Beach County.

I look at bits like automobiles. The nice 16-bit models cruise along pretty good, top out at the 44.1k speed limit, and get very good mileage. A tank of bits (hard disk space) can get you through a whole album's worth of mixes, including all of the various versions with vocals up and down.

You go to the showroom to check out the new hot rods. Twenty-four bits of power with a top speed of 96k. You pop the extra cash for this baby and drive it home. After a week of driving it around the block, you invite your buddies over and take it for a spin. Running at top speed with all the extra bits of power, the tank empties in 1/3 the time it did with your old machine. You didn't count on that extra expense, but you go out and buy extra hard disks to avoid running out of road. Then you notice little burps every once in awhile. It turns out that your bit pump can't keep up with the new demand and you have to spend more money on a hopped-up SCSI accelerator.

On your last project you only needed 57 tracks to record everything. Way under the top-end limit of the 16-bit, 44.1k machine. You check the page in the manual for the 24-bit/96k setup and find out that you have a maximum track capacity of 24 tracks at 96k. There is no back seat in this hot rod. You will have to leave some of your buddies behind. Not enough tracks.

Now you're a little wiser. You had your fun in the new speedster, and you are looking at pictures of next year's 32-bit/192k models. You ponder the shelf full of awards you won with your new album and wonder if it was all worth it. Yup. Been there. Done that. You go out to the garage and pull the bicycle off of your old 16-bit beauty and dust it off. "Well," you think out loud, "we've had some good times together. I've learned a lot from this machine. The new 24-bit machine is nice, but maybe the 96k is pushing it. I could save 50% on my hard disk bill by just keeping my foot off the (SCSI) accelerator. And I'll have room for all of my buddies on the next project." You walk back into the house smiling.

The Migration

I'm talking about migration from 16-bit to 20-bit or 24-bit recording. Let's say that you've been recording on 16-bit black-face ADATs for the last year, slowly getting your first album project together. You see a good price at your local music store on the new 20-bit ADAT. You decide to upgrade to three of the new machines.

At this point you have two choices. You can keep your project at 16 bits and work on the new machines, or you can start working at 20 bits. I would opt for the 20-bit path myself. Everything you already recorded will still be 16 bits, even after transfer to 20-bit tapes, but all of the new recordings will be 20-bit. The overall fidelity of the final mix will be better even though all of the tracks were not 20-bit to start with.

The same principle applies when transferring from 16-bit TASCAM to 24-bit TASCAM machines, or when transferring from 16-bit or 20-bit recordings into a 24-bit DAW. Make sure the destination is set up for the higher resolution. For ADAT, the tapes would be formatted to 20-bit, for TASCAM, the tape would be formatted 24-bit, and for Pro Tools, the session would be opened at 24-bit. Place the source tape in its machine and connect the source machine to the destination machine digitally through the necessary cables.

If there's timecode involved, then transfer the timecode from the source machine to the destination machine. If there will be more than eight tracks of information to transfer, do the transfer with the machines synchronized to timecode. There are boxes that will easily synchronize different brands of machines. One of these may be necessary to transfer from ADAT to TASCAM or from tape to DAW. For ADAT to ADAT or TASCAM to TASCAM transfers, absolute time lock will be satisfactory to sync the machines. You must still connect the timecode tracks and transfer that

▶ continued on page 131

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