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Using its native Sound Designer II and Broadcast Wave audio files, you can send audio to and from Pro Tools with sampleaccurate time stamping. If the kazoo solo started at 3:12 in your original recording, it

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# ...you need one of these.



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24-TRACK 24-BIT HARD DISK RECORDER/EDITOR MX-2424

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# LATE-BREAKING NEWS

As I'm writing this, it's just shortly after the horrific events that took place on September 11 in New York City, Washington D.C., and Pennsylvania. We're fortunate in that the EQ offices here in the midtown area of Manhattan were far enough away from the site of the tragedy to be unaffected. And, even more fortunately, none of EQ's staff was injured or lost; however, almost all of us have friends, family, and loved ones who were directly victimized by the terrorist attack. Our hearts and thoughts are with all of those here and elsewhere who are suffering in this difficult time.

At the time of the terrorist strikes, this issue had already gone to the printer, but we were able to pull this page out at the last moment to insert this updated editorial. The biggest industry-related news at this point is that the 111th AES conference, to have been held September 21–24th, has been postponed to November 30–December 3, 2001. The venue will remain the same, the Jacob Javits Convention Center here in New York City.

As AES executive director Roger Furness told our sister publication, Pro Sound News, to have held the AES show as scheduled would have been, "not only very insensitive to what had happened here, but practically, very unworkable." In addition to this, there was the question of whether the Javits Center would be able to take the show in, whether freight would be able to get into New York City, and whether the airlines would be running anywhere near normal. Furness says another factor, "very reasonably, was people's concern about flying. The best solution was that we were able to reschedule the dates to a time we felt was appropriate and workable."

Industry reaction to postponing the show has been supportive. "Almost without exception," Furness continues, "99% of people have openly and warmly recognized and welcomed not only the postponement, but also that the new dates have been quickly identified, so people know what's happening. I must say, personally, I've been extremely pleased by people's reaction to what is, after all, a very difficult problem. It seems we were able to make the best decision possible, considering the bad situation."

Originally, this issue of EQ was to have arrived on the first day of the AES conference; it contains continuing preview coverage of the show (begun last month), including announcements of products that were to have been debuted on the show floor. Because of the late hour, we were unable to pull these announcements from the issue. Our sincere apologies to those manufacturers affected by this.

At the time of this writing, the world situation is still in turmoil. We can only hope that resolution, justice, and comfort for those victimized will quickly be forthcoming. Be well, be safe, and let there be peace on Earth.

-Mitch Gallagher mgallagher@uemedia.com





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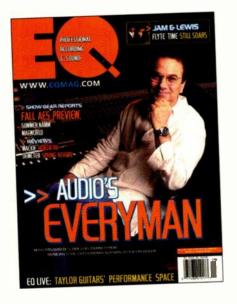




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### **BETTER BURNING**

I use an Apple G4, digi 001 with Toast deluxe 4 and Jam 2.5. How can I make CDs without space between the songs (like a live record)? Toast won't let me do it.

I've noticed that the same playlist in Jam has a softer output level than in Toast. You can also boast levels several dB in Jam for each track. Don't they have the same zero?

Also, is there a Mac program that will let me drop track IDs where I want them while looking at the waveform (*á* la CD architect). This would also be a great thing for live recordings.

> Trevor Reddick via Internet

[I do not use Toast for audio CDs. I use Toast for archiving audio files on CD-ROM. I use Jam for audio CDs. I know that Jam levels are the same as the original file. I use Sound Designer II for editing the audio that is burned with Jam. Jam recognizes Sound Designer II regions. The problem is that Digidesign no longer supports Sound Designer, so you have to beg them to sell you a copy or find a music store that still has an old copy. Version 2.83 is the latest.

For seamless audio such as live performances try this: Load the entire hour of audio into Sound Designer II. Make regions for the selections. Make sure the start of one region is exactly the same sample as the end of the

"The most capable, and responsible engineers have consistently been people that have previously worked as assistants."

previous region. After you have marked all of the regions, start Jam. In preferences, select 0:00 as the default spacing. Open the audio file in Jam.

Select "regions" in the file open dialog. Select all of the regions and click "Done." Jam will display all of the regions with zero space between them. Change the space before the first cut to 00:02:00 (two seconds) which is mandatory for audio CDs. You can preview the songs in Jam and listen to the transitions from song to song before you cut the CD. That is it.

As far as the level control, raising the level of a song that is recorded at full level will cause overs and clipping. If you need to adjust levels of songs that you know are at full level, lower the level of the other songs and leave the loudest one at zero.

Toast 5 will cut audio CDs with no space, but there is no preview or level adjustment. Your CD burner must support DAO (or Disc-At-Once) mode to allow zero space between songs. Most current burners support DAO, but some of them, like the ARCHOS portable, will not produce a DAO disc.

—Roger Nichols]

### **EVERYTHING I LEARNED...**

I am writing in response to the article "Service is King" by Bobby Owsinski [July 2001]. I wanted to commend Mr. Owsinski for writing an article that deals with this very real and important position in the studio — the assistant engineer. Although his words were direct, and may have portrayed a less than glorified studio position to potential assistants, it is important to impart these truths (facts) to the younger generation of engineers that are making their way into our industry.

I now own my own studio, and although it is smaller than the "big city" studios where I started out, I do my best to provide the feel and professionalism of those studios. All of these things were learned while working as an assistant engineer.

In my position as a studio owner, I

### -SF NORTON, EAST RUTHERFORD, NJ

have had the responsibility for hiring engineers, and have recognized one very important and interesting fact. The most capable, and responsible engineers have consistently been people that have previously worked as assistants. They seem to understand and know the protocol of a typical session. They have respect and a healthy attitude toward any session.

Thanks for the great magazine, and it is nice to see *EQ* addressing each of the different positions that go into making a fine recording.

> SF Norton Rhyme, Rhythm & Reason Recording Studios East Rutherford, NJ

### IF WISHES WERE I/OS

Regarding the wish list in Mitch Gallagher's July 2001 editorial on guitar amp modeling processors, as a fellow engineer, I appreciate your insight, and I agree with you completely. One thing, though, I would like to extend that wish list to apply to all studio processing equipment. In view of this proposed extension, are we "almost there," or do we "still got a long way to go"?

> Gary Pogoda JPGT Studios via Internet

### CORRECTIONS AND CLARIFICATIONS

In response to those of you who have been asking where June's Dr. Dre cover was shot, the answer is Studio B at Record One in Studio City, CA.

While it is true that producer/engineers Danny Saber and Brendan O'Brien performed on Dave Navarro's *Trust No One* [July 2001], production credit on the album goes to Rich Costey.

Finally, in August 2001's Session File, that isn't Korn drummer David Silvestra pictured with Frank Filipetti and Kevin Syzmanski — it's drum tuner Judd Kalish.

Our sincere apologies for these omissions and errors.







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### CORRECTING A DRUM TRACK

I'm looking for some ideas (besides recording over the tracks) to fix some uneven drum hits. I have a client who's given me a mix. The snare and kick are very light, but then are heavy at different times. Snare hits are from extreme to minimal. Limiting seems not to do much for the tracks. They don't want to use triggering. Besides actually going in and manually raising the volumes on each hit for a brief moment (a lot of light hits), what are some proven methods to solve this problem? -- Darr

Try this: Make a copy of the snare track so you have a safety. Go in manually and edit out every snare hit and move it up to an empty track, leaving the ambience between hits on the original track. Get it? Now you have two tracks. One has just the space between snare hits, but no actual hits. The other track has all the hits with nothing in between. Compress, limit. or ride with a fader or whatever you want to do to the snare hit track. Now you won't hear the ambience pumping because it's on a separate track.

This will take an hour or two to do, but if the client doesn't want to trigger, then they have to pay to do it some other way. It works - I've done it this way many (thousands) of times. -Roger Nichols

If the difference between softest and loudest is too great to be tamed by a compressor musically, then automation is probably the best way to go. Not a lot of fun to do, but sometimes you gotta bite the bullet and do what you know is right. -Jason

### CABLING QUESTION

I am in the process of setting up my home studio and need cable assistance. I am a songwriter/producer first,

ED CHERNEY BEHIND THE BIG BOARDS

ROGER NICHOLS DIGITAL RECORDING FORUM

GEORGE MASSENBURG

DAVID FRANGIONI STUDIO TECH

and then an engineer out of sheer necessity, so I must tell you I'm a little technically challenged.

I'd like to run all of my MIDI gear to the Neutrik patchbay normalled to the mixer for basic songwriting ideas. Once I get the MIDI stuff down and sequenced, I would like to be able to patch to the DAW for recording.

I know how I'd like to make the connections, but am getting confused on the type of connections (balanced versus unbalanced). -Smooveface

There's a lot of info necessary to really explain this - however, let's start with something straightforward:

· Make a list of all the gear that needs to be connected along with how many inputs and outputs each unit has, as well as what type of connections (1/4-inch, XLR, etc.).

· Most synths have unbalanced outputs via 1/4-inch jacks. When you buy the cables, get regular instrument cables 1/4-inch to 1/4-inch unbalanced.

 First connect your synth outputs to the line inputs of the mixer. Learn how the signal flow works and how to patch/normal. --- David Francioni

### LOW-LEVEL MONITORING

George, I've read in a few places that you like to monitor at very low levels for some of the time during mixes. Is this mainly for level setting, or do you make EQ and spatial/reverb decisions at low levels also? I'm curious as to how much you trust what's happening when you're listening "down there." -Tony

When I'm doing vocal balances (going through a tune and leveling a lead vocal, for instance), either on Pro Tools or on console automation, it's critical to hear the stuff that turning the monitoring level

### 

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

down reveals. Turning it down sort of removes the "hi-fi" and puts effects in perspective (because usually you lose effects/reverb away from your really hip monitoring). Also, I've noted that nothing tells you what the casual listener hears as well as monitoring very quietly. I mean, if you want to speak to the casual listener.

For low end, and for that hopefully solid feel of the groove, I listen loud on whatever's available - usually the "bigs." -George Massenburg

The lower you mix, the more sensitive your ears are. I try to stick to 80 dB when mixing, and then I'll give it a healthy boost for the client to listen. -Adam

### SMPTE BLEED

I have a Sony 3000 console with automation. I'm using ADATs with a BRC, using the timecode from the BRC, and I have bleed everywhere. I've grounded everything I can with no results. I can't help but think it is coming from my patchbay, but I can't find it. I never had this problem when using the automation with my Otari 80 and 90 (well a little track bleed every now and then) — I just can't track this down. Any thoughts on what might help? -E

Sounds like you've got SMPTE bleeding into console ground. If I remember correctly, the console patchbay is balanced and the BRC is 1/4-inch unbalanced. Check the wiring on the 1/4-inch connector. The high should go to the tip, and the low should go to the sleeve. The ground wire should not, as I've seen many times, be connected to the sleeve as well. Also, a common mistake is using a TRS (tipring-sleeve) 1/4-inch jack in place of the proper connector. -Bill Dooley

Have you connected the master and slave timecode devices directly together with a single cable? Try bypassing the patchbay and see if it goes away. -David Frangioni



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By Steve La Cerra

# Event EZbus

Event's EZbus computer audio recording interface is a USB-compatible interface with a twist. In addition to acting as a front end for digital audio recording software, the EZbus is a completely programmable control surface capable of functioning as a full-featured, stand-alone digital mixer. EZbus can be hot-plugged into any USB port on a laptop or desktop computer with no IRQ setup required for PC users. It supports bit-resolutions and sample rates up to 24-bit, 96 kHz.

EZbus can be used as a virtual controller for just about any digital audio recording/MIDI sequencing software run on a Mac or PC. Profiles are included for Logic Audio, Cubase VST, Nuendo, and Cakewalk, providing control over volume, pan, send level, mute, and solo. Profiles are also included for popular virtual instruments and plug-ins. Users can customize these profiles or create new ones using the included editor application. Front-panel faders,

### **EVENT EZBUS**

WHAT IS IT? A combination audio interface, virtual control surface for digital audio recording/MIDI sequencing software, and full-featured stand-alone digital audio mixer.

WHO NEEDS IT? Anyone who records using a computer or gigging musicians using laptops on stage.

WHY IS IT A BIG DEAL? EZbus cost-effectively combines a digital audio recording interface, programmable control surface, and stand-alone digital mixer. USB-compatibility makes it easy to use with laptops — it also has the ability to process asynchronous sample rates.

SHIPPING: September 2001 PRICE: \$849

CONTACT: For more information, contact Event Electronics at 805-566-7777 or visit www.eventelectronics.com. EQ FREE LIT. #: 101 switches, encoder knob, and transport controls are user-programmable, allowing EZbus to send MIDI control data via USB, as well as to two MIDI outputs.

Up to 32 scene snapshots can be stored and recalled via front panel, footswitch, or MIDI program change. Mixes may also be saved to, and foaded from, the host PC. Front-panel control moves may be recorded into any MIDI sequencing program for dynamic automation. A front-panel switch toggles the unit between virtual and audio modes, allowing the EZbus to instantly change between controller operation and onboard audio mixing.

Eight "primary" audio channels are provided on EZbus's digital mixer, sourced from 16 TRS balanced line inputs (two of these accommodate instrument level), two mic preamps with 48-volt phantom power, a coaxial S/PDIF interface, or an ADAT lightpipe I/O. Each primary channel features three-band EQ (high and low shelf plus parametric mids), dynamics (compressor, expander, and noise gate), four sends (individually programmable for pre- or post-fader operation), mute, and solo. Four of the analog input channels accept up to three independent linelevel signals per channel. Eight discrete analog outputs are available including a stereo main mix output, stereo aux output, sends one and two, and a stereo headphone output. Analog-to-digital and digital-to-analog conversion is 24-bit/96 kHz.

A rear-panel lightpipe output provides direct outs for the primary audio channels, enabling EZbus to act as a front end for an ADAT or any lightpipe-equipped audio card (direct outs can also appear at the USB, S/PDIF, aux one and two, and headphone outs). Lightpipe outputs can be independently assigned as main mix outputs, alternate mix outputs, and sends. The lightpipe input can accept S/PDIF optical data and automatically senses which type of signal is present.

An interesting feature of the EZbus is that it supports asynchronous sample rates. That is, it can run two different sample rates simultaneously and perform high-quality sample-rate conversion. This could be really handy in a situation where you need to bring in 48 kHz DAT tracks via EZbus's coax S/PDIF input while simultaneously recording at 44.1 kHz.





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where brands come and go at the blink of an eye. But we're not growing old - far from it. We're seventy-five years young and our efforts continue, generating new and groundbreaking ideas that bring advancements to the science of loudspeaker design and application. Designs that stand the test of time and meet the demanding needs of industry professionals.



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# **Fairlight DREAM Series**

By Mitch Gallagher

At the 111th AES show, Fairlight introduced their new DREAM (Digital Recording, Editing, And Mixing) series of audio production tools. The suite consists of several modular components, including the DREAM Station, DREAM Satellite, DREAM Console, and related expansion modules. The new family of products is based around Fairlight's QDC Technology platform, a dualprocessor control system with embedded Fast SCSI and Sync System, combined with independent DSP processor cards, each providing four pairs of Analog Devices SHARC DSPs. QDCpowered systems can offer up to 48 tracks of 24bit/96 kHz audio, with seamless punch in/out capability across all 48 tracks simultaneously. In addition, instantaneous simultaneous real-time crossfades are available across all 48 tracks.

The DREAM suite components incorporate Fairlight's new Binnacle ergonomic control surface. Named after the housing of a ship's compass, Binnacle centralizes all editing and transport functions around the jog wheel and allows users to efficiently access dedicated keys for each function. In addition, a dedicated macro

### FAIRLIGHT DREAM SERIES

WHAT IS IT? A full-featured integrated suite of audio production tools, providing recording, editing, mixing, and processing. WHO NEEDS IT? Audio and postproduction professionals WHY IS IT A BIG DEAL? The DREAM family offers professional-grade technologies at a low cost in an independent or integrated series of components. New QDC audio engine and Binnacle technology streamline editing procedures. SHIPPING: November, 2001 PRICE: Starting at \$27,524 **CONTACT:** For more information contact Fairlight USA at 310-287-1400 or visit www.fairlightesp.com.au or www.fairlight.net. EQ FREE LIT. #: 110

keypad features 27 macros.

The DREAM suite components can operate either as an integrated system or independently. The DREAM Satellite comprises a 16-, 32-, 48-track audio or recording/editing production system based around the QDC engine. Binnacle editing reduces the keystroke count by 30 to 50% for most actions. The DREAM Satellite can be configured with digital or analog I/O at resolutions up to 24-bit/96 kHz, and the open architecture allows for expansion and support for third-party plug-ins.

The DREAM Station is a fully integrated editing and mixing system that offers configurations up to 48 tracks of recorder plus eight live inputs mixing into formats up to 7.1-channel surround. DREAM Station is fully automated with six-band EQ and comprehensive dynamics available on each channel and every bus. Third-party plug-in support is offered, as is all the bussing and monitoring capabilities required for music or post applications. The DREAM Station may be expanded with the Master Sidecar and Slave Sidecar.

The DREAM Console represents Fairlight's DREAM entry into the large-format digital audio mix realm. A fully loaded DREAM Console offers an integrated 48-track recorder with Binnacle editing, 96 audio channels with sixband EQ and full dynamics, 48 returns with two-band EQ, and 48 auxiliary inputs that can share EQ and dynamics with their associated full channels. Plug-ins are supported, as is mixdown in up to 7.1 surround format on nine separate multi-format busses. The DREAM Console uses four QDC cards for a total of 16 pairs of SHARC DSP chips - enormous processing power potential - and can accommodate twice that number. Full automation is provided for every parameter of every function, including those on third-party plug-ins.

Whether used independently or as an integrated system, Fairlight has designed the DREAM suite of components to offer complete functionality to a broad range of studio sizes and applications, from music recording to postproduction.

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Tony Bennett Piano

Getting the right sound in a live recording situation

"The piano for a Tony Bennett session is a critical element, both for the role of the instrument as well as its driver, Ralph Sharon," shares long-time Tony Bennett producer/engineer Joel Moss. "Ralph and Tony have been together forever and the seamless interplay between them is a branded signature of their recordings. The setup for these sessions is pretty unique and was a determinant in both microphone and preamp selection."

### SIGNAL PATH

Joel Moss explains, "On these sessions I used a pair of AKG C451's and a Neumann U 47 tube. All three mics went to Avalon M2 preamps and direct to tape without EQ or compression. The tape format was [Sony]

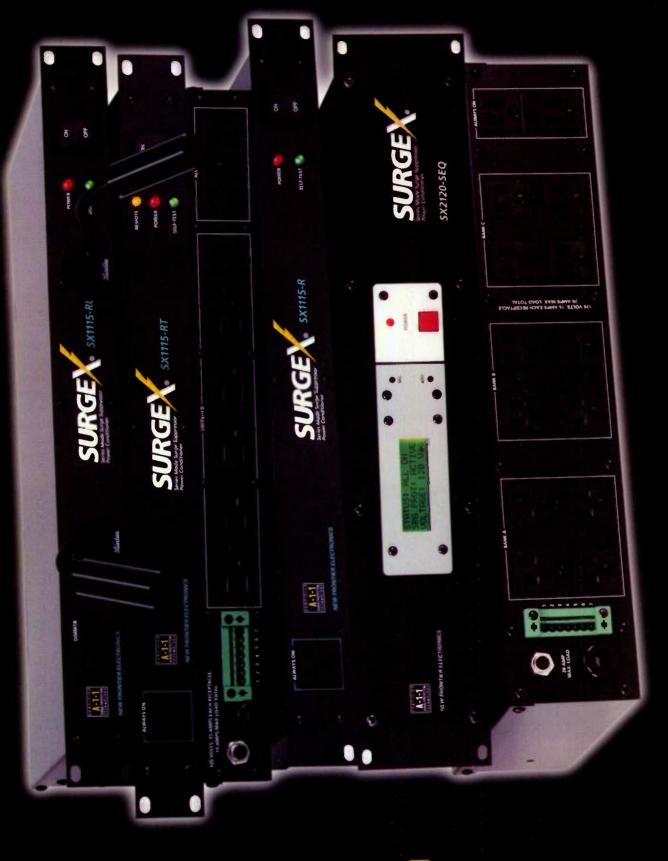
DATE: April 19, 2001	
TUDIO: Capitol Studios, Studio A	
LOCATION: Hollywood, CA	/ Charles
ARTIST: Tony Bennett with Ray Charles	
<b>PROJECT:</b> Playin' with My Friends — Benr Sings the Blues	ett
TRACK: Ralph Sharon playing piano on "Evenin"	
PRODUCER: Phil Ramone	
ENGINEER: Joel Moss	
ASSISTANT ENGINEER: Charlie Paakkari	

3348HR 24/48 at -18 dB, and we were on the Neve VR60 console."

MIC POSITION "The position of the three mics is about 30% science and 70% trial and error," Moss states. "Ralph had just switched from being a Steinway

artist to a Yamaha artist, and this was my first look at this particular nine-foot concert grand. Because the piano lid was resting on a customized stick (this is part of the science), there was a limited amount of space available for mic placement. My goal for the pair of 451's was to create a natural stereo image of the keyboard, low to high. I started with the pair about a foot and a half away from the hammers and as high up as the lid would allow. I like to place the mics almost touching - as if they were connected at their mid point. The low side mic was angled slightly away from the hammers and the high side slightly toward them at an angle of about 110°. Here's where the trial and error comes in: There's an optimum angle, front-to-back and between the mics, that will produce the best image with the least amount of phasing - about ten minutes of adjustment made us happy. The U 47, in the omni position, was placed vertically at the bend in the piano. Its height was also determined by slight adjustments while Ralph played. As a final tweak, I had Ralph play at various dynamics while I set the preamp levels for maximum output while listening to the mics panned left, right, and center. A few more slight adjustments, and we were ready to go."

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Phil Ramone and Tony Bennett (do we really have to identify who's who?) during the recording of Bennett's latest disc, *Playin' with My Friends — Bennett Sings the Blues*.

### PROCESSING

"I guess, like many of my contemporaries, I hold to the belief that processing is inappropriate in a situation like this," says Moss. "Good mics properly positioned with quality preamps give me the desired result 99.9% of the time. I'm a big fan of Avalon gear. It's so transparent, and is my first choice for lots of applications."

### TRACK NOTES

Moss concludes, "Tony and his quartet are always ready and polished before they get to the studio, and it's Tony's desire to make the sessions about the music rather then technology. On the last CD, Ellington, Hot & Cool, we set up the Hit Factory, Studio One just like Tony's live stage setup - risers, monitors, etc. We had a big band setup and an orchestra setup, and everyone played without headphones as if it were a live performance. It was so successful, on many levels, that we decided to approach the new CD in the same way. The orchestration on this



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project was much simpler - piano, bass, drums, guitar, and Hammond B3 on some of the tracks. Capitol's Studio A is a great-sounding, versatile room, and Phil Ramone and I agreed on a basic setup. The studio atmosphere became almost clublike, and all of the guest vocalists (even those who initially wanted to be isolated to allow for fixes), ended up on stage singing live with Tony. One of the consequences of this arrangement was the amount of leakage from the PA and other instruments into the piano, which prompted some blanketing. Ralph's technique is truly amazing. He can be so expressive while producing the least amount of sound. Being able to capture this quality without making the piano leakage react like additional room ambience took some time. It was also important not to deaden the sound of the piano in the room. (I had a mic array for my 5.1 format and wanted all of the live elements to be speaking naturally in the room). Having Tony's long-time FOH mixer, Tom Young, in the studio controlling the PA was an added bonus. "The 'Evenin' duet with Ray Charles was rather typical of how these sessions went. Ray showed up ready to go, like always, and the ease of the live element gave the room a kind of party atmosphere. Phil and I were both out in the studio. I was adjusting something or other and Phil was getting everybody comfortable and focused. Suddenly, somebody counted off the tune and Phil and I both raced for the control room to make sure tape was rolling. We missed a bit of the intro, but that first take was amazing. We did a second take right behind it, and it was 'amazing-er.' Start to finish, we spent about 20 minutes on the tune. Phil turned to me and said, 'Man, I'm a great producer.' Damn, I thought it was all about me .... "



Proving that two heads are better than one, Phil Ramone and Joel Moss strike a pose.



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By Steve La Cerra

# NuMedia NY

New and old meet in Manhattan

### STUDIO NAME: NuMedia NY

Exposé E8

KEY CREW: Owners Bassy Bob Brockman and Yaron Fuchs, engineers Bo Boddie, Janice "JC" Cruz, and Noah Kay, studio tech Hiro Hotta CREDITS: Faith Hill, Madonna, Christina Aguilera, Fugees, Bob Dylan, Heather Nova, Brian McKnight, Mary J. Blige, Babyface, Smashing Pumpkins, Deepak Chopra, Cake, Prince, Billy Crawford, Soulive, Laurie Anderson CONSOLE: Harrison Series 10B (Studio A), Digidesign Pro Control (Studio B) MONITORS: Augsperger, Yamaha NS-10M, Genelec 1031A, Proac Studio 100, KRK

AMPLIFIERS: Bryston 4B [6] RECORDERS: Studer A827 2-inch [2], A820 1/2-inch; TASCAM DA45 DAT, 122mkII cassette; Panasonic SV3700 DAT [2], HHB CDR-650, Alesis ADAT XT

EFFECTS: AMS RMX, DMX; Lexicon 480L w/LARC, PCM70, PCM80, PCM42 [4]; Klark-Teknik DN780, Eventide H3000 SE [2], Instant Flanger; TC Electronic 2290

OUTBOARD: Neve 33609 compressor, Teletronix LA-2A, Urei LA-3A [2], LA-4A [2]; Empirical Labs Distressor [2], Manley Labs Vari-MU Limiter [2], ELOP Limiter [2], High Frequency Limiter, Massive Passive, EQP-1A [2]; dbx 160VU [2], 160XT [2], 120XP, 902 deesser [4]; Avalon 2055 EQ, GML 8200 EQ, Drawmer DS201 gates [2], API 550a [2], 550b [2], 560 [2]; SPL Vitalizer, BBE 802 Sonic Maximizer, Desper Spatializer, Waves L2



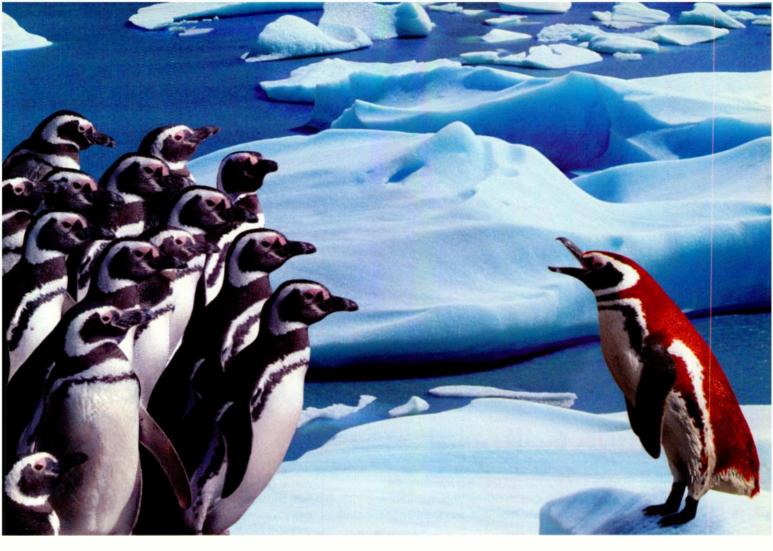
### Ultramaximizer

MICS: Manley Gold Reference Tube, Microtech Gefell UM92 [2], UM72; Neumann UM 57, SM 2, U 87 [2], TLM 170 [2]; AKG C414 [3], C451, D12, C460 [2]; Shure SM81, SM57 [2]; Sennheiser MD421 [5], Beyer MC740, M160; Oktava MC012, Electro-Voice RE20, Crown PZM [2]

MICROPHONE PREAMPS: Manley Dual Mono Mic Pre, Neve 1083, Summit Dual Mono Mic Pre

KEYBOARDS/SAMPLERS/MIDI: Kurzweil PC88, K2000; Emu E4XT, Roland JV-1080, MC-505, TR 808, Juno 106; Access Virus, Oberheim Matrix-1000, Studio Electronics Midi Minimoog, Korg Triton, M1 COMPUTERS: PowerMac G4 dual 500 MHz. PowerMac 9600 with 500 MHz G3 processor DAW EQUIPMENT: Digidesign Pro Tools Mix3 with 48 channels of I/O [2], SampleCell [3] SOFTWARE: Digidesign Pro Tools 5.1.1, SampleCell Editor; Emagic Logic Audio Platinum 4.73, plug-ins include the Waves Gold Bundle, Bomb Factory, Prosonus Orange Vocoder, Serato Pitch n' Time, GRM Tools EQUIPMENT NOTES: "I love mixing on the Harrison," says Bassy Bob Brockman. "It's a very transparent console, and, with the instant recall feature, I can switch songs in about five minutes - including inserts.

"I swear by Logic Audio. There are so many hip features like the arpeggiator and delay, and it has a great feel. With the Logic TDM bridge, all the things you love in a VST environment can be used in Logic with Pro Tools hardware. For overdubs and mix we port everything into Pro Tools and feed the outputs to the Harrison."



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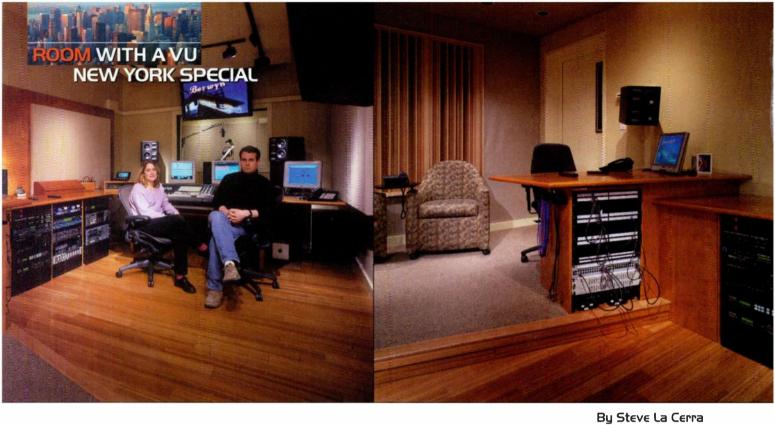
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# **Berwyn** Editorial

Making space count

**STUDIO NAME:** Berwyn Editorial **KEY CREW:** Chief engineer Cheryl Johnson Ottenritter, assistant engineer Mark Biggs

CONSOLE: Fairlight Prodigy 2 System with 24-track MFX Editor

MONITORS: M&K MPS-2510 [5] and MPS-2510 powered subwoofer; Auratone Monitors [2] RECORDERS: Alesis MasterLink 9600, Sony PCM-7040 DAT, TASCAM DA-98HR OUTBOARD: Manley Stereo EQP-1A, dbx Quantum Digital Mastering Processor, BSS Opal DPR 422 compressor/de-esser, TC Electronic DBMax Digital Broadcast Maximizer, Dolby DP 563 Surround Encoder, DP 562 Multichannel Decoder; Dorrough 40-A2 Loudness Meters

MIC PREAMPS: dbx 786 tube mic pre MICROPHONES: Audio-Technica AT4050/CM5, AKG C414

**EFFECTS:** TC Electronic System 6000 **VIDEO EQUIPMENT:** Sharp LC-150M2U 15-inch, flat-screen monitor [2], LC-130M2U 13-inch-flat screen monitor; Sony PFM-500A2WU 32-inch plasma monitor and D1; Digibeta Beta SP, Pluto DDR Hard Disk Recorder

STUDIO NOTES: According to studio architect John Storyk, "The space we had to work



with at Berwyn was rather limited (250 square feet) because we were reconstructing a preexisting room, and it's a small space with a low ceiling. It had to be a 5.1 monitoring environment, but also had to be able to hold as many people as possible due to the nature of the ad agency work done at Berwyn. Placing the iso booth at the front of the room was the only way to configure the room for clean sight lines. We incorporated several space-saving features, including the installation of Sony and Sharp flat-screen monitors. Since the room is used most often for stereo monitoring, we opted for a movable center speaker. That maintained clear sight lines to the iso booth when working in stereo, while allowing proper position of the center channel for 5.1 sessions.

"Low-frequency control is always an issue in a room of this size, usually in the range below 150 Hz — it's just physics. Gabriel Hauser at our office in Switzerland performed a modal analysis and made recommendations for corrective absorbers that were installed in the ceiling and on the rear wall. The room didn't require much in the way of high-frequency treatment beyond the typical diffusion on the rear wall. To maintain isolation from the other production suites at Berwyn, we constructed the studio as a room-within-a-room."

EQUIPMENT NOTES: "When choosing the equipment for the room, we selected as many 24-bit/96 kHz-compatible pieces as possible," notes Cheryl Johnson Ottenritter. "We also Legendary producer and 9-time Grammy winner Phil Ramone is one of the most respected and recognized names in the music industry. From a beginning engineering records for jazz greats John Coltrane and Stan Getz, Phil went on to amass a starstudded portfolio that includes projects as diverse as Tony Bennett, Elton John, George Michael, Luciano Pavarotti, Paul Simon, and Barbra Streisand.

Elliot Scheiner, studio engineer extraordinaire, is no stranger to success either, having worked with some of the most-listened-to artists ever recorded: Phil Collins, The Eagles, Fleetwood Mac, John Fogerty, Steely Dan and Sting, just to name a few.

Together, Phil and Elliot have merged their amazing talents on projects with Natalie Cole. Aretha Franklin, Billy Joel and Frank Sinatra.

To accurately capture the essence of an artist, they rely on 40 Series microphones. "The first time Lused the 40 Series, Eknew that A-T was on to something special," says Phil. They have an almost magical ability to bring out the best in any performance, while always remaining true to the source."

Take a tip from these music industry legends and try 40 Series microphones on your next session. Who knows? You might just be making musical history – like they have.

Special thanks to Capitol Studios, Hollywood, CA

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MFX. The 6000 also has 5.1 features and contains effects from the TC M5000, which I'm used to."

### **PRODUCTION NOTES:**

"The mix suite at Berwyn," Cheryl continues, "was designed to service ten Avid suites and an online finishing suite. The booth is wired so that the editors can record directly to their Avids using the booth without actually involving the mix room. This is also true with the ISDN lines, and allows for great flexibility. The audio media files are sent to the MFX as OMF through the network and all the rooms are tied with a digital router. What's beginning to happen is that I'm being pulled into the creative process much earlier to do

The room may look sizable, but John Storyk, the studio's designer, only had 250 square feet of space to work with.

had to keep in mind the available rack space. The TC 6000 is great because the core unit only takes up one rack space, but is very powerful and flexible. It also has pitch and delay features that I use to augment those available on the sound design or work on audio issues instead of waiting for the final mix. It's very much a collaborative effort."

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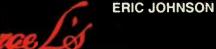
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"The System 6000 not only changes the way I work but speeds the process up!"

Brant Biles





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Finust say, at this point, Edo not think Foould get along without it!"

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By Rich Tozzoli

# JSM Music

The Big Apple's haven of shielded cable and sound

### STUDIO NAME: JSM Music

KEY CREW: Joel Simon, owner/president; Jim Nicholson, composer/producer; Joe Salvatto, chief tech; Tom Cassell, computer genius/engineer

**CREDITS:** Hasbro Mags, Bristol Meyers, United Nations, Jeep, Toyota Tundra, Sirius Satellite Radio, Doc Otis

MIXING CONSOLE: Digidesign Pro Control with sidecar

MONITORS: Genelec 1031A, Genelec 1029 RECORDERS: Synclavier Post Pro

EFFECTS: Lexicon PCM 91, PCM 80; Micmix Dynaflanger, Yamaha SPX 900, many plug-ins OUTBOARD GEAR: Neve 32254e compressor, Summit DCL200

MICROPHONES: Neumann U 67, U 87, KM 86i MIC PREAMPS: Focusrite ISA215, ISA115HD KEYBOARDS/SAMPLERS/MIDI GEAR: Kurzweil K2000RS, Clavia Nord Rack 2, Emu

Mo Phatt [2], Alesis QSR, Roland JD-990, Juno 106 [2]; Sequential Circuits Prophet T8

**COMPUTER:** Apple G4 733 MHz, internally mounted 36 GB hard drives.

DAW EQUIPMENT: Pro Tools 5.1, Apogee AD-8000 [4], Digidesign USD, 882 [2], 1622

STUDIO NOTES: "It took four months to put this particular room together," says JSM chief engineer Joseph Salvatto. "John Storyk designed it, but I've never done a room before that was so digitally intensive. Not only did we have to worry about the conventional analog wiring, clean power considerations, and ground-



ing, but we also had concerns with FireWire and SCSI wires that had to run almost 100 feet." Salvatto continues, "Essentially, this and all the other JSM rooms are shielded from top to bottom. Even our troughs, which were open for a long time during construction, have lead in them. Our RF shielding in midtown Manhattan is really exceptional. And there are 100 tons of air conditioning that run the place — all on isolated, separate systems."

EQUIPMENT NOTES: "I love [Propeliorhead] Reason because you can change the pitch without changing the tempo or change the tempo without changing the pitch," Nicholson says. "I use it as a sound source, sound generator, and sound manipulator. With [Propellorhead] Recycle, I can take all my sounds, throw them onto our server, grab them with my laptop, and tweak them. I then create a REX [file] out of it, manipulate it, and send the Mac analog output through some Class A gear back into the Synclavier."

**PRODUCTION NOTES:** Nicholson continues, "Having worked on the Synclavier for 12 years; I've created a library that goes back to the '80s. This is a very tactile surface, because it's button-based and extremely fast. It's a 16-channel Post Pro system, along with a complete sampler and sequencer all combined into one. What I've done is routed that through a 72-input Pro Tools system with Apogee AD-8000's on the way in. I record to the Synclavier, then use Pro Control and Pro Tools as a large DSP console. If I need a picture, I can simply go get it on the server. On final output, instead of going to DAT, I will just send it right back to the server for final distribution. It's that easy."

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Taking Digital Further ... Again



# Mel's Skylight Lounge

NY Noise raises their glass

STUDIO NAME: Mel's Skylight Lounge KEY CREW: Craig Bishop, Rick DePofi, Erika Noise

CONSOLE: Mackie 32-8 w/24-channel expander

MONITORS: Event 20/20bas, Optimus Pro X44-AV [2 pair], XTS 40 Cubes, AKG 240M [12] POWER AMPS: Hafler Pro 1200, P1500; Behringer HA909 headphone amp

**RECORDERS:** Alesis ADAT XT [4], TASCAM DA-88, Panasonic SV3700 [2], HHB CDR 800, Denon DN 790R cassette

OUTBOARD: Empirical Labs Distressor [2], Daking 91579 compressor [2], Summit Audio TLA 100, Behringer Composer, Intelligate [2]; Drawmer 1961 EQ, Valley People Gatex

**EFFECTS:** Roland SRV330, SDE1000; Eventide H3000D/SE, Yamaha SPX90II, Ibanez HD1000 Harmonics Delay, Lexicon JamMan

MICROPHONES: Microtech Gefell UM92, Neumann U87Ai, Coles 4038, AKG C414 TL II, C3000 [3], C451 [2]; Shure Beta 52, SM57 [7], SM58 [2]; Audio-Technica AT4050/CM5, Sennheiser MD441, Crown 30D PZM, Altec 633A, Electro-Voice EV PL10

MIC PREAMPS: Daking 52270 [2], Drawmer 1960, Giltronics 4TMP, ART Pro MPA, Tube MP [2]; Aphex 107 Tubessence

SAMPLERS/KEYBOARDS/MIDI MODULES:



Roland S-760, JV-80, JD-800, R-8M, JV-1010, MC-505 Groove Box; Akai S-900, EWI 1000 wind controller; Sequential Circuits Prophet VS, Yamaha DX7, DJX; Oberheim Matrix 6R, Matrix 1000; Voice Spectra Vocoder, Opcode Studio 4

COMPUTERS: Apple PowerMac 9600/200MP with Newer Technology Max Power G3/400 MHz processor, 288 MB RAM

**SOFTWARE:** Cubase VST24 v.4.1, Adobe Premiere v.4.2, Adaptec Toast v.4.2, FWB Tools v.2.0, Norton Utilities v.4.0, OMS v.2.3.8, Recycle v.1.7, Peak v.2.0

**DAW EQUIPMENT:** Apogee AD-8000 with ADAT AMBus card, Fostex DP-8 digital patch bay, MOTU 2408, Roland DA-400 4-channel D/A converter

STUDIO NOTES: Mel's Skylight Lounge features a 4-x8-foot skylight that floods the room with sunlight to avoid that "cave" feeling, and has a saltwater fish tank in the wall behind the console! According to NY Noise executive producer Craig Bishop, "We had all these cool design ideas to explore: no control room, lotsa' glass. Then we realized we'd probably be setting ourselves up for acoustic disaster. But our design consultant, Richard Oliver, kept saying 'Tell me what you want to do and I'll show you how to make it work.' He did, and we've got a room that's live but not out of control, with pleasing natural reflections and decay. Coupled with the lounge, Studio B, and my office (which are all wired), we effectively have five separate live areas - each acoustically unique."



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# Pentron 710G

MICROPHONE NAME: Pentron 710G FROM THE COLLECTION OF: Vinnie Zummo, VAZ Music, New York

YEARS OF MANUFACTURE: 1961 to 1964 (see notes)

PRICE WHEN NEW: \$13 TYPE OF MIC: Crystal element POLAR PATTERN: Semi-directional FREQUENCY RESPONSE: 60 to 9,000 Hz OUTPUT LEVEL AT 1,000 Hz: 50 dB below 1 volt per microbar (equivalent to 3.15 millivolts) RECOMMENDED LOAD IMPEDENCE: 1 to 5

mega-ohms CABLE: Single-conductor plus shield CONNECTOR 1/4-inch TS DIMENSIONS: 3.21 high x 2.68 wide x 1.12 deep (inches)

WEIGHT: 12 ounces

**MIC NOTES:** This Pentron 710G microphone was sold along with a Pentron reel-to-reel tape recorder as part of a "home recording" package during the early 1960s. It may look suspiciously familiar to fans of vintage Shure microphones, and it should — the Pentron mic does in fact have the Shure logo on the front grille, and was OEM'd by Shure for Pentron between 1961 and 1964.

Shure's 710 Series (manufactured from 1948 to 1970) included the 710A and 710S, sold under the Shure name, as well as the 710G and 710GS, which were OEM versions.

Referred to in Shure literature circa 1949 as the "Rex," the 710 was a low-cost microphone intended for ham radio operation, public address, and home recording. High-frequency extension of the 710 was specified at 6,000 Hz in a 1952 Shure catalog; that spec was changed to 9,000 Hz in the 1969 catalog. An "S" suffix in the model number indicates that the mic incorporated an on/off switch. All of these microphones were crystal mics and utilized a Bimorph, Rochelle-salt-crystal element. The 710's flat bottom made it suitable for desktop placement.

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# Satellite

DREAM Satellite is Fairlight's new digital audio workstation, engineered to streamline and simplify the processes of audio acquisition, editing and track laying to a degree previously unobtainable. Expanding on the intuitive operation and ease of use of Fairlight's MFX generation, DREAM Satellite offers up to 48 tracks of pristine 24-bit, 96kHz digital audio quality. Designed for use with a studio's existing analog or digital mixer, DREAM Satellite is available in 16, 32 and 48 track configurations with a choice of analog and/or digital inputs and outputs.

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DREAM Station is a comprehensive digital audio recording, editing and mixing environment, capable of delivering final mixes in any format up to 7.1 surround. Station incorporates all the functionality of a 48-track Satellite integrated into a full specification, fully automated 56/16 mixing system. With third-party plug-ins rounding out the effects processing capability, and all the bussing, sub-bussing and monitoring facilities required for a vast array of post-production tasks, DREAM Station is all a studio needs for full production and mixing of the majority of short form, commercials and radio projects. Station may be further expanded with optional Sidecar bays in blocks of 8 faders and external metering options are available to enhance the high-precision on-screen meters.



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CIRCLE 87 ON INFO CARD

returns with 2-band EQ, and 48 short fader paths that can share EQ and Dynamics with their associated full channels. The bus structure of the DREAM Console has been expressly designed for multi-format projects for the simultaneous generation of multiple, multi-channel formats up to 7.1 with individual level

trims for each independent mix. The extensive automation system encompasses every parameter of every onboard function, including processing, routing and third-party plug-ins. With the same recording, editing and mixing capabilities as DREAM Station, but on a much larger scale, the DREAM Console delivers resources which have been hitherto unavailable on any system, at any price, and puts them within reach of any facility aiming at serious production and mixing work.

www.fairlight.net







### What is the key to your phenomenal success?

Service, communication, and a good team. To be able to use the gear properly is the basis, but good service and being able to read the client's mind makes the difference. Besides that, I did a lot of travelling to the United States and looked at the concepts of the top studios in New York and Los Angeles, and I had the luck to get to know [studio manager] Chris Stone, who taught me a lot about studio business.

### What types of work are you doing now?

Everything from simple voice-overs to major act recording and mixing. You have to do everything because the market is so small. To book five control rooms around the clock is a challenge. The mixture between short two-hour sessions and block bookings is the key. You need to think about the facility as a full audio service station. It's not only things that have to do with recording, but everything that's related to it, like format conversion, audio transmission, and even being able to help your client build a proper listening room.

### What is your competition?

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Where do you hope to be in five years?

Our main aim is to get our record label going and to push our reputation further. I don't want to get any bigger in terms of number of control rooms — but maybe a live club and a recording mobile? Who knows.

### What are your feelings about analog versus digital?

Properly aligned analog equipment still

sounds fantastic. But the things that you can do with nonlinear recording are much more creative. On projects where there is just a little or no editing necessary, I use analog, but these projects don't come along very often. For the rest, I use [Digidesign] Pro Tools MixPlus wherever possible. I just love what you can do with it. I think Dave Pensado's method of sourcing from Pro Tools and mixing through the [SSL] 9000 onto 1/2-inch analog so that you can vary the tape compression by the master fader is very good.



# What did you learn from George Massenburg?

Be a genius. Have golden ears. This man is really far away. What really fascinated me was the fact that everything he does, he does 100%, even if he's playing Playstation 2 with his son. And old is not necessarily good, in terms of equipment. He's the only man I know who's top on both the creative and the technical side.

What did you learn from Ed Cherney?

Keep your nerves. We were mixing a Rolling Stones live show with a ridiculous schedule. For me, it seemed impossible with what we had on tape. He managed to finish it off right on time and in a very straightforward way. And although he never looked back, the two-hour show was completely matching from start to end. He just knows what he's doing. Besides that, I very much liked his method of keeping the automation on at all times from the very start, dropping the elements from manual to automated while he was progressing.

# How was it working with Bono and The Edge?

What an experience. Both guys are so musical. We did an acoustic version of "Stuck In A Moment You Can't Get Out Of" — Daniel Lanois producing [All That You Can't Leave Behind, Interscope, 2000]. Both guys were coaching each other while they were recording. Very straightforward. They really understand the trademark U2. And Dallas Shoe, who's worked for The Edge for 17 years as guitar tech, provides the guitar sounds so fast that it never breaks the musical flow.

# Who were your engineering heroes when you were getting started?



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A ROKOLO



# ESTORY BY LISA ROY • PHOTOS BY MR. BONZAI CONFERNING A CONFERNING OF A PROFESSIONAL FAN THE RICK RUBIN STORY

With my radio set to K-ROQ, System of A Down's "Chop Suey" fills the air as I head for Hollywood. Making a right turn off the Pacific Coast Highway onto Sunset Boulevard, the song ends and I find that I'm apparently not the only one in Los Angeles completely hot for this song. The DJ follows up with a dramatic ode to...the producer. Not the band (although they're one of the most buzzed-about groups), not the songwriter, not the recently released album (*Toxicity*), but the producer, Rick Rubin. The obvious "super-fan" radio personality recounts, in brief, Rubin's enviable body of work with acts such as The Red Hot Chili Peppers, The Cult, and Tom Petty. He credits him with birthing "Rock Rap" with albums by the founders of that era — The Beastie Boys and Run-DMC. As the diatribe continues, he praises Rubin's astounding diversity, citing his forays into country with Johnny Cash, and heavy metal with Slayer. And, most of all, he salutes his individualism as a producer. I decided to look up the Zen-like producer and see what kind of magic he's making today....

#### **PRUBIN'S CUBE**

RACI

High above Sunset Boulevard, I met Rick Rubin in his Eastern-decor home that truly reflects the man he has evolved into today — a centered soul that values tranquility so much he spends hours every day in mediation and being a student of yoga. He is quick to point out that he's hoping to increase his visits to the ocean when he gets the ten (yes, ten!) projects he's currently working on finished. For now, he's content with daily yoga sessions and the occasional trip to the beach on the weekend. "I've been in the studio for a while now. I'm very hard working and I suppose I'm a perfectionist. I'm really concerned with getting things right."

Some of the things he has been "getting right" lately are projects with Neil Young, Macy Gray, and a new collaboration between former Rage Against the Machine members Tim Commerford, Tom Morello, and Brad Wilk and Soundgarden's former lead vocalist Chris Cornell. "It's not going to be called Rage Against the Machine," Rubin confides. "The band is so different with Chris that it just sounds like an entirely new band, so they didn't think it would be right to use the old name, which I agree with. They don't have a name yet." They may not have a name, but they do have Rubin's stellar leadership to which they have clung to for this album and one prior as Rage. Rubin reports that they were working on twenty-one songs for about six weeks during preproduction, which begs the question: How do you decide when it's time to go in the studio?

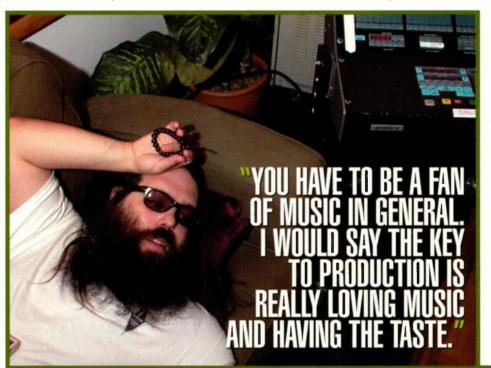
"It usually happens by itself," Rubin responds. "Some fall out. When you hear some of them done, they just don't sound like you thought they were going to. Some other ones that you really didn't think much of all of a sudden become your favorite songs. So, you can't really predict

how it's going to be. You have to kind of go through the process, listen to what you've got, and usually everyone's in pretty close agreement. It's important that everybody feel good about their art."

For this particular project, Rubin has chosen one of his favorite studios. Cello, in Hollywood. His engineer, David Shiffman, applauds this choice as well. "Both Rick and I are partial, recording-wise, to old 80 Series Neves. There's just something about them," Schiffman reports. "We were in Studio 2 recording this project. As far as I'm concerned, it's one of the best studios in the world because it has this magical Neve 8038 in it with old 1073's and the Ampex ATR124. We cut everything to analog. We're editing it in the computer, but both Rick and myself are strong believers in having it hit tape first because it really makes a difference."

Rubin concurs, "We use a tremendous amount of tape in making records. It's not unusual to go through 150 or 200 reels of Emtec/BASF tape in two weeks. We record everything — just in case."

Rubin also has strong opinions and a unique perspective on recording within the "older" rooms of the city, as opposed to some of the newer, more touted rooms. "Something that makes a huge difference — that is less talked about these days — is the actual room that you record in. I tend to work in older studios. I don't know much about the design of studios, but it seems like there was a different attention to detail in the way rooms sounded in the old days. If you worked in a recording studio that was built in the 1950s, sonically, things sound good in those rooms. Even the older control rooms tend to sound more like the records I like. Also, because technology has come so far, people have gotten more caught up in the technology than with things like the acoustics, and the acoustics make a huge difference."



### 🗬 RICK RUBIN — PRODUCING ON AN ARTIST-BY-ARTIST BASIS

**TOM PETTY:** "There are certain artists, like Tom Petty, who are amazing craftsman in the studio and will stop at nothing to get it right. It's a pleasure working with someone like that because you're never really twisting his arm to do anything. He could be a producer himself — he is a producer himself!"

**JOHNNY CASH:** "I've always been fascinated by outlaw music. Johnny is great. He's got a cool studio set up in a log cabin across from his house. It's great for about four or five people sitting around in a log cabin making music; it's really nice. The songs we picked resonated with the myth of Johnny Cash."

**MACY GRAY:** "I got a call asking if I would come down to the studio and hear what she was working on. I heard it, and it was cool; then we started working together. I'm the executive producer, Darryl Swan is the producer. They had been working on her new record for so long and recorded so much stuff. They asked for someone with fresh ears to come in and help sort through it all and tie up the loose ends to get it done — so we did."

**SAUL WILLIAMS:** "I can say he's an artist with a unique musical vision. He's such an amazingly talented and strong-willed guy who likes to do things his own way. I think he's great and his debut album is a good representation of who he is. You just hear his vocals and it's spine chilling. Truly an amazing artist."

NEIL YOUNG: "Neil's been working on tracks for his new album and asked me to come up and lend an ear. It's really thrilling for me just to be in the room with him because I love him so much."

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# **CONFESSIONS** of a **PROFESSIONAL** FAN

As the music business evolves, we're finding more and more producers wearing multiple hats of songwriter/engineer/programmer. Rubin states, definitively, that he is nothing more than a producer, and, most importantly, a fan. "You have to be a fan of music in general. I would say the key to production is really loving music and having the taste. It's really in the job description to have taste. Because an artist is usually very close to the material that they're working on, and it's almost like being a professional fan - it's really what the job is."

This fan-like passion was actually what began it all back in the early 1980s in Long Island, New York, when a teenage Rubin became obsessed with the "underground" phenomenon that was hip-hop. "I just started doing it --making music. I've never worked in a studio and have never been an engineer. I just started as a producer. I was living in New York and was a fan of hip-hop music. Hip-hop was really an underground thing at the time. There weren't even albums at the time, just 12-inch singles. I'd go to clubs and hear this music and love it. Then I would, always as a fan, go out and buy the records. But the records didn't really reflect what I would hear at the clubs. So, just really as a hobby and for fun, I started making records that sounded

From his dorm room at New York



## of the technorat

David Schiffman has been one of Rubin's engineers of choice since 1995. In "one hot minute" he went from being the assistant engineer to Rubin's main man on the boards. In between tracking Tom Morello's guitars and setting up a vocal sound for Chris Cornell in Studio 2 at Cello, Schiffman comes clean with the details of those late-night recording sessions.

"What was amazing about the process of recording Tim Commerford, Chris Cornell, Tom Morello, and Brad Wilk was that they had rehearsed for three months prior to coming into the studio, and Rick and the guys were still making changes — arrangement changes to the songs and all different things. It would always sound better at the end of the day. They would usually take about a day to a day and a half per song to track.

"Tom was using one Peavey cabinet, which just sounds great, and his Marshall ECM head. I put three mics in front of it, a pair of Shure SM57's and a Neumann U 87, and mixed them together. I would use the pair of '57's really close up on the paper sides of the speakers and get them to where they're exactly out of phase and then pop in phase. It's really a full sound.

"We're starting vocals with Chris. He owns a Neumann M 149, and we put that up. It sounds really good on him, but, honestly, if we put up a Dixie cup it would sound great on Chris because he's a phenomenal singer and he makes it sound easy. What I ended up going with for most of the vocals was Cello's [AKG] C12. It cuts through the track and it really complements his higher voice — no EQ, flat through [Neve] 1073 with [UREI] 1176, and standing on it pretty hard. He's one of the very few vocalists I've worked with that works the compressor; the compressor doesn't work him. He's a very gifted singer.

"I'm at the point where I've worked with Rick for a while to where I know what he likes to hear. He likes stuff to sound like it's right in the room with you. He likes it when the listener's place is sitting right in the middle of the band. I have to agree; that's a very exciting, aggressive sound. Part of doing that is making stuff dry and not making it ambient. Not making it dead, but you're really not miking for the room. You're miking to find the best tome of the instrument. So, a lot of my mic placement is very close to the source. Not a lot of omni miking æ a lot of cardioid mics, so it's more about capturing sound rather than space.

"I'd say the most important thing I've learned from Rick in the studio is that it's about the song and damn everything else. Damn the fancy bass part or the cool drum fill or the cool guitar lick. When a band is making a record, it's about the song, and you're a slave to your song. That's something Rick is always very focused on. He has an incredible talent for taking something that sounds good and isn't quite there to really finding the essence of that song and flushing it out."

University, Rubin began Def Jam Records, which, most would agree, defined early rap styles through

powerful releases such as *Licensed* to *III* [Def Jam, 1986] by the Beastie Boys, LL Cool J's *Radio* [Def Jam,

#### Service of the servic

Last year, after several calls and conflicting schedules, Andrew Scheps and Rick Rubin finally teamed up for the first time at Conway Studios to work on Saul Williams's record. Scheps, the Pro Tools guru, recently received another call from his comrade-de-rock to do his PT "thang" with the former Rage Against The Machine boys and Chris Cornell. Scheps gives us a peak at his set up in Studio 7 at Cello.

"I'm using World Link's rig, which is a Mix Plus. I brought in my own computer keyboard because it has all the stickers on it and my track ball," enthuses Scheps. "We're using almost no plug-ins and the core software. We're up to about 150 GB of hard drive space. We're also using the Benchmark A/D converters.

"David [Schiffman, engineer] records the basic tracks to two-inch tape, and Rick and the band make notes on the takes. Then the tapes get transferred into Pro Tools, where I do the edits, and then it all goes back to tape, because all the overdubs are still done to tape.

"Rick's a real easy guy to sit in the room with, and he's very quick to know what he likes and doesn't like. With every song there's about 60 pages of tracking notes from Rick as well as from the band, but mostly from Rick. He has certain takes checked off to indicate it as a great take. So I always start with that. It's a lot like cutting tape. There's no fixing to do. I'm just doing big block edits, 32 bars of a song or half a song; it's not real tweaky edits. We're doing a couple of things with Tom's guitar where we're putting together some intro pieces, just editing, and we're not using any plug-ins. He's a wizard. He has all kinds of stuff going on and you don't want to mess with it."

1985], and the unforgettable *Yo!* Bum Rush The Show [Def Jam, 1987] by Public Enemy. Rubin was also responsible for the groundbreaking Run-DMC smash *Raising Hell* [Profile/Arista, 1986]. It was at this time that the controversial side of this meditating man emerged and he began to speak out against censorship, garnering himself a reputation as a rebel.

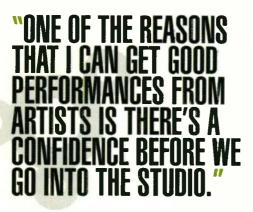
### **\*** A NURTURING SPIRIT

Not just a rebel, Rick Rubin has a nurturing side that can be seen in the relationship he has with his artists as well as his approach to his productions. "I would say it's usually an experiment. I try to do as much work as possible with a band before we go into the studio so that the studio is really more about just capturing the perfor-

mance. With some artists we spend months and months in preproduction, and that really is the time that the record is made even though we



CIRCLE 99 ON INFO CARD EQ | OCTOBER2001 | 45 haven't recorded anything yet," he continues. "I remember with the Chili Peppers' *BloodSugarSexMagik* album [Warner Bros., 1991] we rehearsed



for that record nine months. We wanted to cut it very quickly, but it was that advance time that really made the record what it was. It's more about

working out the details, the transitions, and the arrangements. This way you have a very good draft before you go into the studio, so you're not trying to write the song in the studio. You're not trying to arrange the song, you're trying to just get the best performance, and you're not focused on 'maybe it should change here.' The studio is not the best place to question the material.

"I think that's one of the reasons that I can get good performances from artists is there's a confidence before we go into the studio. We're not in the studio fishing. We know exactly what we're doing, and tend to make records very quickly once we're in the studio," he says. For an example, he cites System of A Down's self-titled

record where they cut 32 songs in seven days.

Rubin shares that his process of "nurturing" a band begins even in the fetal stages of a project. "Usually in the rehearsal room, the band will work on material. Depending on the project, and how far along it is, either on a regular or semi-regular basis, I'll come in one or two days a week,

> sometimes every day, and we'll discuss the songs. We'll talk about what parts are great, and what parts could be better — how they could be better — and just build them from there."

### STECH TALK

One piece of technology that Rubin does know and admits to relying on in the recording stage is Digidesign's Pro Tools. But, like many produc-

ers, he's torn on its pros and cons. "I think the technology can be helpful, but it can also work against us because the technology makes certain Pro Tools. I use them on my records. They clearly are a good tool, but they need to be used as a tool and not a beall, end-all — play a song one time and then make that into it because you can. It has to be more about the passion of the performance and the human quality. I think that's what people connect to; they don't connect to it sounding right, they connect to it sounding real, personal."

Rubin again points to room sound as the other key. He even recounts a story of making a record in a New York City studio and not being happy with the drum sound. He sent his engineer out to every studio in Manhattan with the same snare drum, same mic, and same DAT recorder with the objective of finding the best sounding room. "We listened to the DAT and they all sounded remarkably differ-

## og THE HITMAKERS ON RICK RUBIN

**GLEN BALLARD, PRESIDENT OF JAVA RECORDS/PRODUCER/SONGWRITER:** "Of all the producers that I'm aware of, he somehow seems to get to the essence of an artist the best. He seems to simplify, clarify, and amplify the core of the artist and he does it so economically and so deftly that I'm always studying his records because they're never hyped, but always powerful. He just has a way of getting the clearest expressions of what the artists do, whether it's the Chili Peppers, Johnny Cash, or Tom Petty. There's a ciarity to it, and it seems effortless; it does what it's supposed to do without a lot of histrionics. He's got the most natural-sounding records imaginable. They're not your usual sort of bombastic tripped-out records — there's an organic quality to them that really works. He's awesome."

DALLAS AUSTIN, CEO OF FREEWORLD ENTERTAINMENT/PRODUCER: "When I first heard Rick Rubin's records, I thought he was just a black street kid who made great hip-hop records. He's so versatile. No matter what genre of music he's focused on, the records always sound incredible. I admire that."

JOSH ABRAHAM, PRESIDENT OF JAB RECORDS/PRODUCER: "He's like the Godfather of Production. He has a lot of charisma, great ears, extreme talent as an executive. He's made a lot of good decisions and worked with cool bands. The one thing that really inspired me about Rick Rubin was that you can't pigeonhole him with one sound. He knows music as a whole and that's very important as a producer. Plus, the talent of creating a label as an executive, too, was a big influence on how I wanted to model myself."

JERMAINE DUPRE, CEO OF SO SO DEF/PRODUCER/ARTIST: "LL Cool J's first album is the first time I remember hearing about Rick Rubin. The thing that would attract me to working with Rick is that he was so far ahead of the game when he was making rap records, and then he stopped. I would love to see what rap he would come up with these days."

DR. DRE, PRESIDENT OF AFTERMATH/PRODUCER/ARTIST: "He's the sh\*t!"

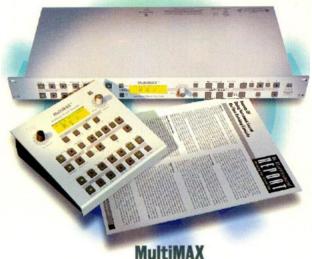
things so easy to get it right that the human passion and emotion behind really getting it right isn't strived for. So, I would say — and I'm not antitechnology — that I feel there are definite uses for the new technology and ent," he recalls: "It was a huge difference from studio to studio. So it's not just about who's got the cool old vintage Neve desk — which is a nice thing — it's a combination of the right room and the right gear that kind of gives you the balance of sound you're looking for."

When discussing the engineer's role in the studio, Rubin has a very clear perspective, "I find that, when working with engineers over a period of time, it gets much easier, because they get an idea of what I like and that helps speed things up. That's why I tend to work with the same group of people a lot." He elaborates, "I want an engineer with a good ear who knows about mic placement and how to make things sound natural. I would say the biggest problem of both producers and engineers, really, is more getting in the way. Our job is really to stay out of the way, to help organize the material, but then to get out of the way and let it be what it is. I've worked with engineers before who try to make it theirs, and it ends up not being what it should be."

The always-candid Rubin isn't afraid to vent his frustration over spending his life trying to make great sounding records when the quality is being so drastically changed by new technology like MP3s. "With people downloading MP3s off the Web, the quality of the material just gets degraded and degraded. Even CDs...I went to a hi-fi store that specialized in analog equipment and they had CD and vinyl versions of the same albums. I listened to a CD and it sounded good. It sounded like I was familiar hearing it and then I put on a record of the same music and the CD was blown out of the water! It was heartbreaking, because I put so much time into trying to make CDs sound good when it's not the greatest format."

Although he refutes notions that he has actually defined a sound of his own, many a producer has attempted to emulate Rick Rubin's productions. "I would say that there is a thread that runs through the records that I make, but I wouldn't say I have a distinctive sound. There are great producers who have a distinctive sound, but for the kind of producer I am, I don't think that would be possible because of the different kinds of music I work on." He continues, "It really is a question of personal taste. I'm trying to hear music the way I want to hear it. I've talked to a couple of producers who told me that they specifically will do something with the idea of a song being a single or getting on the radio. I can't imagine trying to guess what somebody else would like, which is what it seems like some people can do. I can't do that. I really make records for myself - what I like. As I said, I'm a fan."

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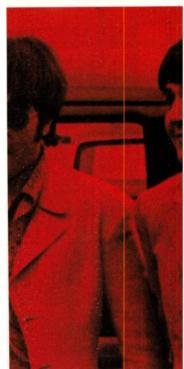
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Ever since the days of Colonel Tom Parker and Brian Epstein, the artist manager has had a fair degree of visibility. Intriguingly, to this very day, most seem to even physically emulate one of the two models: either the cigar-smoking fast-talking wiseguy, or the mild-mannered, impeccably dressed businessman. But, either way, they're most definitely the power behind the throne, the force behind the scenes. At the early stages of an artist's career, the manager is the guy collecting the money from the promoter at the gigs. When things break big, he's the guy staring down the record company bigwigs, demanding points, options, riders, you name it — all to keep his client happy and creative.

But here, in dawning days of the 21st century, the role of the artist and the record producer is blurring — a phenomenon we explored in the December 2000 EQ article "Talk About Pop Music." Yes, the artist is the public "face," touring behind and ceaselessly promoting each new release, but, all too often, the producer is either a collaborator or even the sole creative force behind the music. As a result, today's successful producer needs his *own* manager — someone to take care of business and ensure that he can do his thing without unnecessary interruption, hassle, or karmic upheaval.

## WHO'S MANAGING WHO?

you get a name producer onboard, you get a record deal, though a lot of people seem to believe that. But, from time to time, something interesting will come along and we'll do a short agreement stating that if the

producer does the demo, then you agree to work with him on your record if you get a deal, and, if not, there are certain provisions to try to make it very fair. I think those kind of spec deals can be valuable in terms of finding new bands and getting in early rather than waiting until there's a bidding war.

"On some level," he adds, "anyone you know in

the music business is an avenue to help you get a deal. A mistake I see a lot of unsigned artists make is to go after the top, most in-demand record producer to work with them. The problem is that frequently the people who are most in demand have the least amount of time to devote to such a project. The sensible thing to do is to find someone who has the experience and the aesthetics that you're looking for — someone who can help you, but doesn't necessarily

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> have so much going on that they won't be able to work with you." McDaniel often actually sits down and listens to tapes with his clients. "I think having producers listen to tapes from unsigned bands is an invaluable service. Getting a producer onboard

very early on in the creative process can be very helpful to them."

Interestingly, all four managers assert that a producer's success is not just about record sales — apparently, there is a "cool" factor involved,

too. "There are producers out there who haven't had major hit records, either recently or ever," marvels McDaniel, "but there's just something hip about them and they keep getting calls to produce band after band after band." O'Shea adds, "In my world, credibility and commercial success are one and the same. It's all about development, and that development needs to

continue throughout a producer's entire career. A lot of times, these guys get so busy when they get successful, they keep doing the same sort of thing because that's what's coming at them, and they don't really have the time to stop and think about



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## WHO'S MANAGING WHO?



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where they're going to be in five years. Part of my job is to provide the vision — to be the person who's removed from the situation and, therefore, more objective. At the same time, I need to be connected to what's going to keep them creative and interested." Interestingly, objectivity is what the producer is relied upon to provide in the studio while a record is being made. "I agree, absolutely," asserts O'Shea. "I see a lot of similarities between what I do for the producer and what the producer does for the artist."

The big question, of course, is: At what point in your career are you ready to take on a manager? "When there's something to manage," states Freeman flatly. "If you're in a studio making a record but you find yourself spending 50% of your time returning phone calls to people that want to hire you so that you're not doing your job, then there's something to manage. If you're sitting at home watching TV all day, there's nothing to manage." McDonough agrees: "The key point is the point at which you have done some work worth publicizing. If you've produced 15 albums, but no one's ever heard of the artists, then having a manager go around and tell everyone you've done that work isn't going to help you — as a matter of fact, that kind of thing can actually hurt a manager's credibility."

McDonough concludes by stating, "The most important thing is finding a manager that understands what you do and has a vision for where you can go and can talk about what you do enthusiastically and with conviction." Or, as O'Shea puts it: "You need to have someone who understands your sensibilities and your boundaries and who can appreciate you for who you are, not just for your skills. The manager's job is to educate the industry about who and what the producer is — but without a story to tell, you can only do so much."

Howard Massey's latest book, *Behind The Glass,* is a collection of interviews with record producers, now available from Backbeat (Miller-Freeman) Books.



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Apple has also taken over roles that formerly belonged to third-party developers. "Multichannel and high-resolution MIDI was in danger of going away with all the issues revolving around OMS," Brown says. "We retained experienced engineers and developed a full-featured MIDI layer."

And, for the first time, Apple is developing a plug-in protocol, called

Audio Units plug-ins. "The developer community has said they had to build their own (plug-ins) because the system lacked them," Brown says. "Now we have plug-ins at the system level. We hope to encourage developers to create apps for this standard."

#### A NEW ADDRESS?

The key to taking advantage of these audio features is in the inner workings of the system itself, which will change radically from previous Mac OS. "Looking at Mac OS X 10.1, we had to acknowledge that you can do so many things under OS 9," Bourdon says, "but there are also confusing and conflicting protocols between vendors — a Tower of Babel of drivers and standards. We've made it easier on the users to configure their own systems."

But, traditionally, the developer community has been the driving force moving the Mac forward as an audio platform. In fact, many developers (and users) have grumbled in the past about Apple's seeming disinterest in the audio community. According to Brown, that's about to





change. "We believe we can deliver a system-level protocol to entice developers to maintain a standard. They can keep their own user interface, but leverage system resources to do the grunt work." ASIO may stay as a layer between the software and the system, but it will be a much thinner layer.

Still, for some applications, making the switch is more than a matter of porting code over to the new OS. Digidesign's Pro Tools, for example, doesn't just operate as a software layer on top of the system it addresses proprietary hardware, too. "OS X 10.1 addresses the hardware, Brown says, "Whereas under OS 9, the apps address the hardware directly. The new audio system is device-class compliant. There's no support for vendor-specific drivers. Our platform revolves around industry standards. TDM is proprietary to Digidesign. We won't be addressing non-standard technologies."

Brown points out, however, that developers like Digidesign and others will still be able to write support for their own devices through unique drivers. And though the transition may take some time, things are moving forward. Dave Lebolt, vice president of product strategy at Digidesign, says that users can expect full compatibility in the near (but undetermined) future. "The audio press and our ▶ continued on page 147

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# AES PREVIEW

Last month we featured Part I of our preview coverage of some of the many new products that were unveiled at the 111th AES conference, held September 21–24 at Jacob Javits Convention Center in New York City. Picking up where we left off last issue, here's our continuing coverage of the show. Look for more information on these and other new products in the coming months. —*Mitch Gallagher* 

#### AKG ACOUSTICS

AKG Acoustics has introduced their new C900 performance microphone. It features a 24-karat-gold transducer case, a frequency-independent cardioid polar pattern, and a frequency range of 20 Hz to 20 kHz, which is enhanced by the integrated PB1000 Presence Boost Adapter that provides a 3–4 dB peak between 5–13 kHz.

Also new, AKG's MicroMic III Series includes the C430 instrument condenser microphone and the D409 clipon instrument dynamic mic. AKG will be adding accessories to the line such as the MicroMicIII B 29 L (which powers one or two L versions of the MicroMic III Series Mics), the B 15 (an in-line battery supply for all standard Micromics), and the MPA III L phantom power adapter (a mini-male 3-pin XLR connector to standard 3-pin XLR with preamp connector).

Contact: AKG at <u>www.</u> akg-acoustics. com. EQ free lit. #111.

AUDIENT Audient's new surround monitoring controller, the ASP510, offers comprehensive 5.1 monitoring and mix capabilities. It supports three 5.1 and three stereo sources, features eight inputs from console bus sends, and provides eight outputs to recorders (5.1 and stereo).

Audient's ASP8024 analog console uses horizontally mounted boards (spanning 12 channels) that are "arranged on a functional basis, not a channel basis...an 80-channel console with full 24-track routing occupies no more than a standard two-meter (78inch) frame."

Contact: Audient at <u>www.audient.</u> co.uk. EQ free lit. #112.

#### AUDIO PRECISION

Audio Precision showed their two new audio test systems (the ATS-2 and the System Two Cascade Plus). ATS-2 is

a PC-based audio test and measurement system utilizing both harmonic distortion and multi-tone analyzers. Cascade Plus is a performance enhancement to Audio Precision's System Two Cascade.

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Audio Precision and Digigram are working together for first-rate sound card testing. They are releasing a special Digigram version of their Application Note for PC Audio Device Performance Tests (free at their AES booth).

Contact: Audio Precision at <u>www.</u> audioprecision.com. EQ free lit. #113.

#### AUDIOEASE/MOTU

AudioEase's new Altiverb is a reverb plug-in for Digital Performer and MAS. It provides one-, two-, and four-channel sampled acoustics of "real halls, churches, forests, bathrooms, and virtually any acoustic environment." It is Altiverb's first native reverb plug-in to take full advantage of Altivec (Velocity Engine co-processor) performance in Apple Power Macintosh G4 computers. Contact: AudioEase at www. audioease.com or MOTU at www.motu.com. EQ free lit. #114.

> CADAC Cadac's R-Type touring console features

AUDIENT ASP8024



facilities for both FOH and monitor mixing — typically a 24-slot frame with 48 mono and three stereo inputs, a full output section, plus dedicated LCR outputs and 16 DC Masters. Expandability with additional frames can reach 180–200 inputs.

Contact: Cadac at <u>www.cadac-sound</u>. com. EQ free lit. #115.

#### CELESTION

Celestion has added the new KRc to their KR Series. The KRc features power handling of 100 watts, full-range response of 80–20,000 Hz, and a reflex-loaded 5.25-inch bass driver and a coaxially mounted polymer tweeter. **Contact:** Celestion at <u>www.</u> celestion.com. EQ free lit. #116.

#### **CIRRUS LOGIC**

Cirrus Logic's new Crystal CS4362 and CS4382 converters support audio formats such as DVD-Audio (192 kHz sample rates) and Super Audio CD (Direct Stream Digital or DSD) and dynamic range performance of 114 dB, THD+N of 100 dB.

The company is also launching CobraNet (developed by Peak Audio) that combines multiple channels of audio into an Ethernet packet. The CobraNet protocol features sample clock distribution and control, as well as monitoring data sent over the same network as the audio.

**Contact:** Cirrus Logic at <u>www.cirrus</u>. <u>com</u>. *EQ* free lit. #117.

#### COMMUNITY

Community is showing five new additions to their XLT500 Series of loudspeakers. The model XLT502 and XLT505 stage monitors, the dual-15 Model XLT509 subwoofer, the XLT530 three-way bass-reflex trapezoidal enclosure, and the XLT525 trapezoidal three-way device are built with transportable PA applications in mind.

The new Community CPL26 and CPL28 each have IntelliSense driver protection and high-frequency horns,

which can be rotated 90 degrees to facilitate either vertical or horizontal mounting.

The WET Series is expanding to include the WET218, a two-way device operable at eight Ohms between 70 Hz and 18 kHz, and the WET228, which features quasi-three-way configuration and a pair of eight-inch carbon fiber low frequency and low-mid elements.

Contact: Community at <u>www.</u> loudspeakers.net. EQ free lit. #118.

#### **CREST AUDIO**

Crest Audio has three new power amps: the CPX900, the CPX1500, and the CPX2600. The CPX900 provides 450 watts per channel at 2 Ohms and 900 watts at 4 Ohms, bridged mono. The CPX1500 delivers 750 watts per channel at 2 Ohms and 1,500 watts at 4 Ohms, bridged mono. Lastly, the CPX2600 pumps 1,300 watts per channel at 2 Ohms and 2,600 watts at 4 Ohms, bridged mono.

Crest also has a new line of LH Series loudspeakers with no less than four models (LH1, LH2, LH3, and the LH4 subwoofer), as well as three floor monitors (the LH5m, LH6m, and LH7m). They feature trapezoidal cabinets for "reducing the build-up of internal standing waves to ensure a minimum of midbass and mid-range coloration."

Crest's new LQ Series enclosures (the LQ-10, LQ-12, and LQ-15) feature Series injection-molded enclosures composed of "high-impact injection-molded polypropylene in a trapezoidal shape for easy stacking or cluster formation."

Crest's LT Series of power amps includes the LT500 (250 watts per channel @ 4 Ohms), the LT1000 (500 watts per channel @ 4 Ohms), the LT1500 (750 watts per channel @ 4 Ohms) and the LT2000 (1,000 watts per channel @ 4 Ohms) and feature Crest's Linear Power Supply and Class-D amplifiers.

**CREST XR-20** 

The X-Matrix expander module, Crest's solution for adding new flexibility to the X-VCA console, provides the ability to power up to four units directly from the X-VCA. This offers a 12 x 12 matrix on the X-VCA — more can be added through the optional external power supply.

Crest's XR-20 is a compact rackmount mixer that features 12 mono and four stereo inputs (a total of 20 inputs) with mic preamps and switched 48-volt phantom power capability.

Contact: Crest Audio at <u>www.</u> crestaudio.com. EQ free lit. #119.

#### **CROWN AUDIO**

Crown's new Power-Tech.1 Series of power amps (the Power-Tech 1.1, 2.1, and 3.1) feature a two rack-space design. Their front panels sport recessed level controls along with signal presence and IOC (Input/Output Comparator) indicators for quick performance information.

Contact: Crown Audio at <u>www.</u> crownaudio.com. EQ free lit. #120.

#### D.A.S.

D.A.S. has introduced two new active powered loudspeakers. The Compact 1 is a three-way, biamplified self-powered

# STUDIO OBSERVER Volume 4 - Number 3 - September/October 201

# Analog

is that most proven of all audio beasts: just when you think it's hit its technical glass ceiling, along comes a new twist which gives it yet more sonic dimensions to explore. That's certainly been the case with the 1-inch/2-track and 2inch/8-track analog tape formats, championed by a few intrepid technical wizards and which has brought a new perspective on mixing all the way up to engineering's highest echelons. Combined with robust media such as EMTEC's Studio Master 900 Series tape, suddenly, for many, it's digital media that's become the back-up format, while a newly enhanced large-format analog takes center stage.



# BACK the FUTURE

Engineering's Finest Are Finding New Life In the One-Inch Analog Stereo Format

#### "The Finishing Touch"

Joe Chiccarelli has been an avid analog fan for 20 years. However, the relative scarcity and cost of the few 1-inch 2-track decks had limited his analog work mainly to 2-inch 24track for tracking sessions, and half-inch analog for mixing. But as demand for the 1-inch format expanded, more of the decks came to the market. "There are now a number of Mike Spitz's ATR Service decks on the West Coast, including at Cello Studios and rental facility Design EFX." says Chiccarelli, whose extensive discography includes Beck, U2, Tori Amos and Shawn Colvin.

He got his first mixing opportunity on the format on the upcoming Elton John release, which he tracked and which he shared mixing duties with Bill Bottrell. Chiccarelli was impressed: "It sounds unbelievable, "he exclaims. "It is simply the widest, fattest analog you have ever heard." Chiccarelli says he especially likes what the 1-inch format does with mid-range frequencies. "Even the best half-inch analog sometimes can change the mid-range balances within a mix," he says. "The 1-inch format, with [EMTEC] SM 900 tape on it, makes the entire spectrum sound warm yet perfectly balanced and very present across the spectrum."

Chiccarelli also uses analog tape as part of his signal processing technique. He aligns the one-inch deck at +5/185 nWb, while overbiasing +1.75 dB@10 kHz. He likes to run the deck at 30 ips. "It all depends on the music," he says. "With Elton John, we used a light touch on the tape, with no stereo bus compression – just the slight compression the analog tape itself gives you," he says. For the mix of the upcoming hard-rock Hallovejoy Band (Universal Music) recording, Chiccarelli says he'll be hitting the tape harder. "That's the great thing about analog tape in general, and the 1-inch format in particular," he says. "You can vary any number of things and change the sound of the tape-and-machine combination, just like you would a signal processor. I use Pro Tools extensively now for all of my recording but still love to hear at least one generation of analog in the recording process. It's the world's best stereo compressor and the results are always quite consistent and predictable."

#### "The Prodigal Son"

With an SSL M-T digital console at the core of his studio, Back Stage, within Nashville's top-tier Sound Stage studio complex, and a

reputation for being at the forefront of many musical and technical trends, not the least of which is mixing for the 5.1 audio format, Chuck Ainlay might seem the epitome of a digital devotee. However, the arrival at Sound Stage of a pair of Mike Spitz-modified Ampex ATR-100 1-inch 2-track decks has left him a changed man.

"I had departed from analog media for quite a while," Ainlay recalls. "I loved how musical it was, but the noise was becoming more of an issue as music moved further into digital. I found I had moved deeply into digital for all aspects of production and mixing, as well. Until I found this combination of one-inch 2-track and the [EMTEC] SM 900 tape. It brought me back."

www.emtec-usa.com



WR





EMTEC is now the only name that the professional audio and video industries need to know. As per the terms of the agreement made in late 1996 in which BASF shed its magnetic media manufacturing assets, EMTEC was empowered to use the BASF name and logo for five years as part of a branding transition process. By December. 31, 2001, that process will be complete. Also as part of the agreement, EMTEC will retain the use of the spiral, which has been in use since EMTEC Magnetics became independent.

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new level of importance and meaning for every business throughout the world. And I'm very pleased that all of the professional media industry sectors have made this transition with us, coming to perceive EMTEC as an instantly recognizable and identifiable brand. And I want to continue to emphasize that the brand is the only thing that has changed – the people, the products, the technology, and the quality will all remain in place.

Remember, change is good and at EMTEC we welcome it.



Joe Ryan, President • EMTEC Pro Media, Inc.

Ainlay is now a hard-core fan of 1-inch analog for stereo mixing. He finds it works well and consistently across all genres of music, using it recently on both country artist Toby Keith and on Dire Straits guitarist Mark Knopfler's recent recording, "Sailing To Philadelphia." "Regardless of the kind of music you're doing, I don't know how you could not love what 1-inch analog



tape does for it," he says. Ainlay says he thinks of analog tape as a metaphorical signal processor, one with as many parameter controls as most other outboard gear. His alignment settings on the 1-inch 2-track deck range between +3 and +5 dB @250 nWb, running at 15 ips. Ainlay says he loves how analog tape saturates and sounds at 15 ips. "We did some comparisons, and 1-inch at 15 ips is still 7-dB quieter than conventional half-inch tape at 30 ips," he explains. "And it sounds so much better."

Interfacing an analog deck with a digital console is not an issue, Ainlay assures. Though the M-T console has considerable dynamic headroom at its output, he simply backs the input gain controls of the 2-track deck back a bit and uses the comp/limiter function of the TC Electronics 6000 processor to smooth the tracks out a bit. "It's going to get compressed at mastering or at radio," he says. "I'd rather have some of the control over that at the mix stage. The bottom line is that I've found a way to mix to analog again that keeps the music sounding the way it needs to."

#### "The Big Mix"

Elliot Scheiner has been using a specially configured 8-track, 2-inch Studer A827, modified by John French, for his ongoing series of 5.1 surround music mixes. While this format had first come to the industry's attention when producer Michael Bienhorn began using it for drum tracks, Scheiner says he had conceived of it as a 5.1 mix format some time ago. His remix of the Eagles' "Hotel California" confirmed for him that largeformat analog was perfectly suited for 5.1 music mixing. "I started out thinking that this was a hedge against future digital specifications," Scheiner explains. "The sampling rate for most DVD audio is 96 kHz, but I've been doing 192 kHz for stereo mixes. Who's to say 192 kHz won't be the DVD standard a few years from now? Analog transcends future format issues."

However scientifically he had conceived of it, though, Scheiner found that it was the sound of large-format analog that convinced him. "The fact is, it sounds amazing," he says. "I still mix in both digital and analog formats; 'Hotel California' was mixed in three formats two digital and the two-inch analog. The two digital formats A/B-ed pretty closely, even though they were using different converters. But the analog mix was the one that [mastering engineer] Ted Jensen was blown away by." That mix, as were other 5.1 music mixes by Scheiner, including Queen's "Night At The Opera" and the new R.E.M. recording, was done using EMTEC SM 900 tape, running at 15 ips, calibrated at +3 dB/185 nWb, using Dolby SR noise reduction.

As good as the largeformat analog sounds, Scheiner points out that it's still an artistic choice. "That warmth that analog is so famous for adding to recordings isn't



what everyone wants to hear," he says. Nonetheless, using analog makes as much logical sense as it does esthetic sense in many instances. "I truly do feel that these older formats actually relate better to music recorded using them," he explains. "It makes sense when you realize that ['Hotel California'] was done on analog to begin with, and that by mixing in analog we maintain the sound." **Large** format analog tape recorders are the ultimate in magnetic media hardware and the ultimate irony: the format proclaimed to have been eternally eclipsed by digital recording has returned bigger and better than ever to act as the process which humanizes the sound of digital. 1-inch decks converted to stereo mixdown machines, and 2-inch decks reconfigured for 8-channel surround music mixes, have rejuvenated both analog technology and music recording. Two people who get a laugh out of this are also the two most responsible for the development of analog-on-steroids - John French, owner of JRF Magnetics, and Michael Spitz, owner of ATR Service Co. Here, In Session, they discuss the implications of a new era in analog recording.

#### SO: When did the demand for large-format analog 8- and 2-track decks first begin to manifest itself?

John French: [Producer] Michael Beinhorn actually sparked it. He was doing an Ozzy Osbourne record in 1995 and was looking for a way to record really fat-sounding drums. He went to [Mercenary Audio owner and avowed analog aficionado] Fletcher, who called me. I said the only way to fatten the sound was to fatten the tracks. The first-go-a-round was a Studer A800 2-inch deck that I built an 8-track headstack for. Michael wanted to record at 7.5 ips, which I tried to talk him out of, but he loved the way that [tape speed] made the low end sound.

Michael Spitz: The first time I saw this approach used was in the mid-1980s, when a record company named Water Lily used a Studio C-37 1-inch machine fitted with 2-track heads. That was the first time the socalled large-format machine emerged.

SO: You each have a somewhat different approach to large-format. Michael, you have specialized in rebuilding vintage Ampex ATR decks. John, you've been more eclectic in terms of platforms but staying focused on building and fitting headstacks to Studer, Otari and other decks. What other differences are there?

# John FRENCH Michael SPITZ

within +/- 0.7dB and down to 25Hz.

MS: Today we can also make a head that has better interchannel phase [coherence]. We've been able to improve sonic performance by making the gap scatter [a function of track/phase alignment] much tighter. We're also rebuilding the decks well beyond what the original specs called for.

#### SO: These have been expensive items, costing upwards of \$12,000 for 8-track decks, and only a relative handful of either 1-inch 2-track and 2-inch 8-track decks have been built thus far. Is it possible to make this largeformat technology more affordable and more accessible to more people?

MS: We'll be releasing a new bolton technology package, called Aria, at the AES Show. The entire package will allow you to add a completely new set of electronics, from the power cord to the headstack, to whatever deck you have. All the deck will do is pull tape.

JF: We've been taking a look at the widest base of machines out there and found that the Otari MX-5050, a quarter-inch deck, is a good candidate

for higher production of conversions to half-inch 2-track. It's only a 15-ips machine, but that still delivers a tremendous amount of enhancement to a much larger base of



users because the machine converted and rebuilt will come in at closer to



system for full-range stand-alone performance. The D.A.S 118A self-powered subwoofer incorporates a Class D switching amplifier utilizing one 500watt ICEpower module. The unit delivers a maximum SPL of 131 dB at one meter.

Contact: D.A.S. at www.dasaudio. com. EQ free lit. #121.

#### DENON

Denon's AVR-2801P A/V surround receiver features 90 watts of power (into eight ohms, 20 Hz-20 kHz, 0.05% THD) from the five channels and supports all primary multichannel playback formats.

Denon's **CDR-W1500P** dualdrive/dual-tray CD recorder/player offers standard CD playback or playback of HDCD discs via the built-in HDCD decoder (drive 1), as well as a CD-R/CD-RW recorder or a standard CD player (drive 2). Analog inputs of the CDR-W1500P offer full 24-bit A/D conversion.

The DN-C550R dual-disc CD recorder (CD player/CD-R/CD-RW recorder) creates CDs in one all-inclusive package. It comes with XLR inputs and coaxial S/PDIF inputs (SCMS defeatable).

Contact: Denon at www.del.denon. com. EQ free lit. #122.

#### DIGIGRAM

The Digigram showcased HitPlayer-L, a networked digital audio for providing and controlling audio at multiple ...mote locations. The HitPlayer-L is remotely controlled via TCP or RS-232 using Aztec Radiomedia IP2 technology and utilizes FTP, HTTP, SMTP, SNMP, Telnet, PPP, and NetCom services for network connection and configuration.

Digigram's miXart PCI sound card has added an AES/EBU digital input/output option and an option for on-board real-time MPEG audio encoding and decoding.

Contact: Digigram at www. digigram.com. EQ free lit. #123.

#### EARTHWORKS

Earthworks has introduced the new Flex Series microphones. The series includes the FM720, FM500, and FM360 mics with responses of 50 Hz to 20 kHz within ±2 dB.

The  $\Sigma 6.2$ Loudspeaker is Earthworks' new precision soundfield reproduction system that is designed for high-definition playback that utilizes "the same principles that led to Earthwork's microphones."

There is a new variation on the Earthworks M30 Mic. The M30BX is powered by a single AA cell (500 hours) and has a flat time-coherent response from 9 Hz to 27 kHz, ±1 dB.

Earthworks Contact: at www. earthwks.com. EQ free lit. #124.

#### EAW

EAW's new Steerable Line Array technology is designed to provide high intelligibility in audio application (auditoriums, etc.) through digital signal processing.

EAW is also showcasing the DCS8 subwoofer, created with the same footprint as the flagship DC1 system, and the SM64, EAW's high-output two-way stage monitor with 1.4-inch exit neodymium compression driver on a unique 40° x 90° angled-front horn. Contact: EAW at www. eaw.com. EQ free lit. #125.

#### FAIRLIGHT

Fairlight and Steinberg Media Technologies are adding VST plug-ins to the Fairlight Plug-Ins Manager to extend its functionality. A wide selection of VST plug-ins can now be accessed by Fairlight users at pro audio or MI retailers or on the Internet (www.cubase.net).

Fairlight has also announced their DREAM (Digital Recording, Editing, And Mixing) family of com-

ponents. See the First Look in this issue.

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Contact: Fairlight at <u>www.fairlightesp.</u> com.au. EQ free lit. #126.

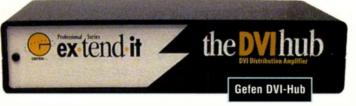
#### FOSTEX

The Fostex Model RM-1 is a stereo monitor panel that fits into one rack space. The A/B Input Selector determines the A stereo group or B stereo group to output to the drivers or headphone jack.

Contact: Fostex at <u>www.fostex.com</u>. EQ free lit. #127.

#### **GEFEN INC.**

The DVI-Hub is designed to increase productivity by increasing access to multiple computers. The DVI repeats the DVI signal and extends it 50 feet. This allows a flat-panel digital display



to be placed away from the computer, allowing wider options of work areas.

The Gefen's DVI-Switcher gives the option of switching between multiple computers with the same flat-panel digital display, thereby saving space on the desktop.

Contact: Gefen at <u>www.gefen.com</u>. EQ free lit. #128.

#### GENELEC

Genelec's 1029A is a two-way, biamplified active monitoring system. This compact, nearfield product is powered by 40-watt amplifiers and has a frequency response of 68 Hz–20 kHz ( $\pm$ 2.5 dB) from a five-inch woofer and 3/4-inch hard-domed tweeter. Genelec's 2029B 24-bit/96 kHz digital active monitor to the state the state of the

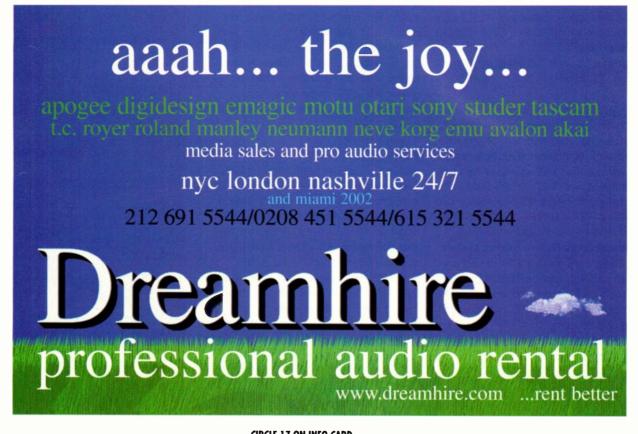
kHz version of the Genelec 2029A.

The Genelec DI8A Active balance converts an unbalanced line signal to a balanced line signal. This reduces electronic interference and improves the quality of the signal.

The S30D monitor system (24-bit/96 kHz) with three-way enclosure features an eight-inch woofer in a vented cabinet. The S30D supports digital input signals with a word length of up to 24 bits and sampling rates up to 100 kHz. **Contact:** Genelec at <u>www.genelec.com</u>. EQ free lit. #129.

#### GEPCO

The Gepco's D5526EZ digital cable is a dual version of the 5526 series of



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110-ohm cables. The 26-gauge D5526EZ features a bonded foil shield with drain wire for quick shield termination and non-conductive polypropylene rod that stabilizes and maintains the impedance as the cable is flexed.

Gepco has improved the Gep-Flex jacketing compound in the latest version. It is now available on Gepco's main line of the GA618 series, GA724 series, and 5596GFC series of digital audio multi-pairs.

Contact: Gepco at <u>www.gepco.com</u>. EQ free lit. #130.

#### GOLD LINE

Gold Line's new EQ2 digital parametric equalizer has software allowing 24-bit functionality, 10 bands of parametric filters per channel, high- and low-pass shelving filters, and two discrete delay lines.

Gold Line also added functionality to its TEF20 acoustical analysis system with Sound Lab Polar ETC software for Windows. Polar ETC provides TEF users with a way of quickly identifying the direction of origin for any reflection, and provides the basis for selection and placement of acoustical materials. **Contact:** Gold Line at <u>www.gold-line.</u> <u>com.</u> EQ free lit. #131.

#### **INNOVA-SON**

Innova-Son featured their Large Scale Digital Console. The Large Scale series has the capability to process 96 input channels, 46 pre-mix busses, and 20 matrix and LCR master busses using a crystal clear 20-bit interface/40-bit internal word size with the intuitive interface and diminutive footprint.

Contact: Innova-Son at <u>www.</u> innovason.com. EQ free lit. #132.

#### JBL

JBL's Precision Directivity line of speakers come in a number of varieties (the PD162, PD162U4, PD162L4, PD125, PD128, PD743, and PD764). Their low-frequency array systems are the PD162 with six 12-inch drivers per enclosure (125 to 300 Hz), the PD125 with two 15-inch drivers (50 to 250 Hz range), and the PD128 with two 18-inch drivers per

enclosure (30 Hz to 125 Hz). The PD764 and the PD743 are mid/high Precision Directivity speaker systems. **Contact:** JBL at <u>www.jbl.com</u>. EQ free lit. #133.

#### **JOEMEEK**

Joemeek's new MicroMeek MQ1 is a drivebay-installed recording channel with effects for PC/Mac. It features a handy (right on the front of your computer) mic/instrument channel with 48 volts of phantom power, a Joemeek optical compressor, and a five-stage "Current Sense" mic pre.

JoeMeek is also showing the new TwinQ dual mono/stereo tracking unit features a CurrentSense mic preamplifier, optical compressor, and Meequalizer EQ. **Contact:** JoeMeek at <u>www.joemeek.</u> <u>net.</u> EQ free lit. #134.

#### **KLARK TEKNIK**

Klark Teknik's has upgraded their DN1248 active microphone splitter. The DN1248 Plus has a more flexible rear panel to allow the user's choice of multipin connectors through retrofitting. There are also two sets of outputs and one set of inputs located together on the rear panel.

Contact: Klark Teknik at <u>www.</u> klarkteknik.com. EQ free lit. #135.

#### LEXICON

Lexicon featured the MPX 200 dualchannel processor. It's a true stereo, 24-bit dual-channel processor with 24bit A/D-D/A and S/PDIF digital inputs and outputs. The unit features a digital compressor, as well as reverb and effects (240 presets with Lexicon reverb programs such as Ambience, Plate, and Chamber).

A new software kit (Version 2) for the MPX 500 dual-channel processor is being showcased. The upgrade kit adds features such as a dedicated stereo compressor, input-level meters showing calibration values, and 250 new presets. **Contact:** Lexicon at <u>www.lexicon.</u> <u>com.</u> EQ free lit. #136.

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Clock is a low-jitter clock source outputting word clock or Digidesign's superclock format. It features clock frequencies of 44.1, 48, 88.2, and 96 kHz. The six BNC clock outputs have corresponding front-panel switches for selecting word or super on a per-output basis.

Contact: Lucid at <u>www.lucidaudio.</u> com. EQ free lit. #137.

#### MARK OF THE UNICORN

Mark Of The Unicom's new version 3.1 update of Digital Performer has a number of new features such as unlimited multiple undo (which shows a list of the user's actions as reference), Timeline Undo (an unique feature that allows the user to jump to a corresponding time in a session to undo from that point), and built-in waveform editing of surround audio files. **Contact:** MOTU at <u>www.motu.com</u>. *EQ* free lit. #138.

MSS-10

#### MARQUETTE LABS

Marquette Labs has brought original Pultec specs to their new EQ. The Mercury EQ-H Program EQ has transformer-balanced input and output, and a single-ended gain make up amp (as did the original).

The new Mercury 66 Limiting Amp is an all-tube/all-transformer, fully balanced variable-bias limiter with fast attack time that can produce full limiting in 1/5000th of a second as well as release time from 0.3 to 25 seconds. It uses a single push-pull stage of amplification (transformer coupled in/out — no capacitors in the signal path) with a highcontrol voltage.

The Mercury M72 studio microphone amplifier is a dual-channel unit that offers all-tube/all-transformer circuitry per-channel, as well as features such as variable gain (34 to 56 dB), phase reverse, input pad, and direct input (transformer balanced). The new Mercury M76 studio microphone amplifier is a dual-channel mic amp with features such as line input, impedance select, and output fader. **Contact:** Marquette Labs at <u>www.</u> <u>marquetteaudiolabs.com</u>. EQ free lit. #139.

#### MEYER SOUND

Meyer Sound has introduced a line of self-powered loudspeakers and a new online version of the Acoustic Prediction software.

The new UPM-2P parabolic sound beam is a compact, self-powered, bi-amplified three-way loudspeaker system with dual 5-inch cone transducers and a 1-inch titanium dome highfrequency driver.

The Meyer Sound DF-4 is a dedicated, self-powered downfill speaker system with a 15-inch low-frequency driver and a 4-inch diaphragm high-frequency compression driver coupled to a symmetrical 50° horn.

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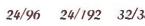
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CIRCLE 49 ON INFO CARD

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**CIRCLE 75 ON INFO CARD** 

Meyer's M3D line array loudspeaker is a self-powered line array system with a high-frequency REM (Ribbon Emulation Manifold) system sporting a Constant-Q horn and a proprietary system of front- and rear-facing low-frequency drivers for even coverage. **Contact:** Meyer Sound at <u>www.</u> **meyersound.com.** EQ free lit. #140.

#### MIDAS

Midas showed the new Midas Legend 3000 console, a semi-modular multiapplication live production mixing consoles. It features XL4 preamps and XL3 EQ. To offer two separate mixes, Legend provides the user with two sets of controls. There are 12 auxiliary sends that can be used individually as foldback or FOH effects sends.

Midas's new Heritage Control Software (theater control software) for the Heritage range of consoles enables users to make global online changes to scene setups from a PC. The next phase (out next year) will be the development of dynamic control that will operate in "the way that already exists for Klark-Teknik products such as the DN9848."

Contact: Midas at <u>www.midasconsoles.</u> com. EQ free lit. #141.

#### NEUMANN

Neumann showcased their new digital microphone system, Solution D. With this new technology, they have successfully transferred the dynamic range and fidelity of their best studio mics to the digital domain. Solution D uses a new A-D conversion process, a specially developed synchronization method, and remote control of mic parameters and mixing console functions. The first products include the D-01 digital mic, the DM1-2 digital mic interface, and remote control software. **Contact:** Neumann at <u>www.neumann.com</u>. *EQ* free lit. #142.

#### NEUTRIK

Neutrik showcased their line of BNC cable connectors and bulkhead jacks. The BNC 75-ohm cable connectors are also being offered in push-pull and rear-twist versions.

The NYS 224-S is Neutrik's new popcanceling phone plug for fighting the speaker-harming sound of plugging in



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an instrument or other device. The 224 "depresses upon insertion and acts like a ground lift to eliminate the pop." **Contact:** Neutrik at <u>www.neu-</u> **trik.com.** EQ free lit. #143.

#### OTARI

Otari is premiering the CDP-64 large-scale CD-R duplication

unit. The CDP-64 is configured with a maximum of 64 CD-R drives mounted in the chassis as a matrix of eight columns by eight lines and features the Quick Disc Auto-Loading System, as well as a double feed prevention/detection system.

The ND-20 is the opener in a new line of Otari networking products. The ND-20 features A/D and D/A conversion standalone or it can be combined with other ND-20's, creating a 96 kHz digital audio network. It has 32-channel capacity (16channel with 96 kHz sample-rate) for analog or digital inputs or outputs.

Otari is also showcasing the FS-96 format and sample rate converter. It transfers AES3 (AES/EBU), TDIF-1, ADAT optical, and SDIF-2.

Contact: Otari at <u>www.otari.com</u>. EQ free lit. #144.

#### ROLAND

Roland showcased their next-generation workstation keyboard, the Fantom. This 76-note instrument incorporates expandable XV synthesis and effects with a redesigned sequencer and larger display.

They also showed the BR-532 digital studio, a four-track digital recorder that puts an interface derived from the BR-8 into a battery-driven design for recording on the go. The BR-532 has an optical digital output for recording to a computer or stand-alone CD recorder for burning CDs.

On display will be the V-Producer software for use with the VP-9000 VariPhrase processor. A proprietary technology, VariPhrase is capable of independently manipulating the three most fundamental elements of sound pitch, time, and format — using an encoding process called "Wave Training."

**Contact:** Roland at <u>www.rolandus.</u> <u>com.</u> EQ free lit. #145.



#### SADIE

SADiE debuted their new CD-R Tower, a multiple CD-burner for SADiE digital audio workstations. The unit is available in four or eight recorder models, and multiple Towers can be interlinked to offer the capability of recording up to 64 discs simultaneously. All models feature an internal hard drive that can store up to 20 different bit-accurate CD images. **Contact:** SADiE at <u>www.sadie.com</u>. EQ free lit #146

#### SHURE

Shure unveiled their new Easyflex line of affordable installed sound microphones. A total of eight different models are being introduced: Easyflex, gooseneck, and overhead models were scheduled for a late summer release, while a pair of boundary mics is slated to ship in the fall. **Contact:** Shure at <u>www.shure.com</u>. EQ free lit. #147.

#### SINTEFEX

Sintefex's FX 2000 stereo digital classic EQ/compressor utilizes samples of original classic analog gear to re-create the sound of vintage products such as the Pultec IA3, Fairchild 660, and Urei LA3.

Also, Sintefex showcased the CX 2000 precision stereo sampled classic compressor gate. It provides a number of classic analog compressor effects, additional expander/gate, and sidechain EQ in a digital form.

**Contact:** Sintefex at <u>www.sintefex.</u> <u>com.</u> EQ free lit. #148.

#### SONIC SENSE/BENCHMARK

Sonic Sense, Inc. and Benchmark Media Systems showed the new AD2K+ converter, a unit suited for portable use with a wide-ranging variety of mic preamps and mixing consoles. Measuring eight by five inches, the AD2K+ features front-panel controls that adjust input sensitivity, sample rate, and seven word-length reduction settings.

Sonic Sense also showed their SoniCase equipment carrying case. Its weather-resistant enclosure provides storage and protection for a full-size portable DAT recorder, two rechargeable batteries, a microphone preamp, microphones, cables, and other vital accessories.

**Contact:** Sonic Sense at <u>www.</u> sonicsense.com. EQ free lit. #149.

### SONOMIC

Sonomic showcased their online service for the first time. This service provides instant access to over 120,000 sounds. Using any Internet-connected computer, users can search Sonomic's sound library by category or keyword to find ready-to-use sounds.

Contact: Sonomic at <u>www.sonomic.</u> com. EQ free lit. #150.

### **SONY**

Sony's version 2.0 software for the DMX-R100 digital console enables surround sound processing at double sample rates (88.2 and 96 kHz), and features enhanced sub-level control on each channel in conjunction with fivechannel panning. Sony also introduced a DMX-R100 MADI card.

Contact: Sony at <u>www.sony.com</u>. EQ free lit. #151.

#### SOUNDCRAFT

Soundcraft USA is shipping all three models of the company's new Spirit M Series. The Spirit M4, M8, and M12 offer a choice of four, eight, or twelve mono inputs, respectively; all three mixers are equipped with four stereo inputs, stereo returns, and auxiliary sends, as well as 100-mm faders and a S/PDIF stereo digital output.

Contact: Soundcraft at <u>www.</u> soundcraft.com. EQ free lit. #152.

### STAGE TECH

Stage Tech's new TrueMatch reference microphone converter allows a microphone to be connected directly to the TrueMatch RMC. The TrueMatch technology (resolution of 28 bits) brings the digital noise floor down, and the high dynamic range allows it to handle "all conventional studio input levels from -128 dB to +22 without gain adjustment."

Contact: Stage Tech at <u>www.</u> stagetechinc.com. EQ free lit. #153.

### **SUMMIT AUDIO**

Summit Audio released the TD-100 instrument preamplifier and tube direct box. The TD-100 is a half-rack unit with an internal, high-voltage power supply and discrete circuitry. The input section is driven by a 12AX7A/ECC83 vacuum tube, with the output section driven by a discrete transistor circuit utilizing  $\pm$ 24-volt rails.

The TLA-50 tube leveling amplifier is a half-rack compressor based on Summit Audio's classic tube circuitry. The unit offers linking with another TLA-50 for additional stereo compression capabilities.

Contact: Summit Audio at <u>www.</u> summitaudio.com. EQ free lit. #154.

#### SWITCHCRAFT

Switchcraft premiered the new HP75BNC series connectors, true 75ohm connectors made from machined brass with 50MI gold-plated center pins.

Switchcraft is expanding the TQG series of connectors by offering an SMT and right-angle PC-mount plastic versions. Customers can choose between true surface mount and right angle PC mount versions. They are available in 3-8 pins, male only, offer two different types of bushings, and two body sizes. **Contact:** Switchcraft at <u>www.</u> switchcraft.com. EQ free lit. #155.

### TRANSAMERICA AUDIO GROUP

Drawmer introduced the Six Pack, a six-channel multidynamics processor featuring universal linking technology designed for surround sound dynamics control applications.

Brauner showed the new Valvet Voice Microphone, a cardioid version of Valvet mic that's dedicated solely to



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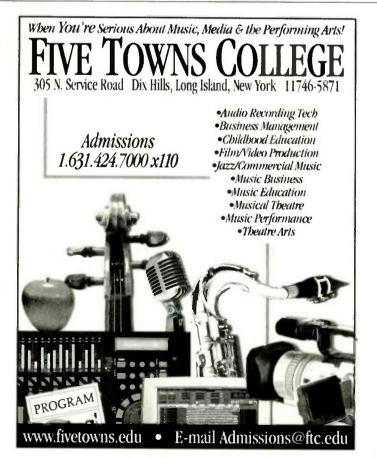
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vocals. It's designed and engineered by Dirk Brauner.

FMR Audio is showcasing the RNC (Really Nice Compressor) Enhanced Versions and an all new mic pre — the RNMP.

**Contact:** Transamerica Audio Group at <u>www.transaudiogroup.com</u>. *EQ* free lit. #156.

### TURBOSOUND

The Turbosound QLight series features three new products. The TQ-220 is a



compact passive two-way loudspeaker based around two five-inch LF drivers and a half-inch liquid-cooled HF tweeter.

The TQ-230 is a two-way loudspeaker with two five-inch LF drivers and a one-inch HF driver. It has an internal passive crossover, frequency response of 70 Hz–20 kHz, a dispersion pattern of 100 x 60. It has a power handling of 125 watts RMS, 250 watts program, and 325 watts peak.

The TQ-259 is a trapezoidal passive loudspeaker with a front-loaded 12inch LF driver and a one-inch HF compression driver.

The latest additions to the TCS contractor series are the TCS-108, a compact front-loaded eight-inch subwoofer; and the trapezoidal TCS-35 background and surround sound loudspeaker, which features an eight-inch LF driver and one-inch titanium tweeter.

Turbosound is also showing the TQ-440SP, a self-powered, three-way, full range enclosure incorporating a custom-designed dual-concentric 12inch/one-inch driver for accurate reproduction of bass frequencies, and a 6.5inch TurboMid driver for mid and high frequencies.

Contact: Turbosound at <u>www.</u> turbosound.com. EQ free lit. #157.

### WAVEFRAME

WaveFrame Inc. released WaveFrame/7, a new generation of the company's audio

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**CIRCLE 40 ON INFO CARD** 

# Bass Management for Surround Sound

It's common knowledge that effective multi-channel monitoring requires accurate reproduction of low-frequency energy. Traditionally, achieving this goal has been difficult. But with the Model 65 from Studio Technologies, bass management is now available in a simple, yet powerful product.

The Model 65 provides a 5.1 input, along with five main and two subwoofer outputs. Using conservative filter design, the all-analog circuitry redirects bass energy from the main inputs to the desired subwoofer outputs. While you can use the Model 65 right out of the box, we've made certain that you can "tweak" it to meet the needs of your specific application. Want to try 10.2? No problem with the Model 65!

Of course, the Model 65 is directly compatible with Studio Technologies' StudioComm for Surround products, as well as being easily connected with other surround sources. For more information, call us or check out our website.



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**CIRCLE 68 ON INFO CARD** 

workstation system. The new product line keeps the WaveFrame editing interface while adding 24-bit digital audio resolution, 5.1 surround mixing, DSP plug-in effects, networking capabilities, and up to 32 channels of I/O.

WaveFrame's new FrameWorks/ DX Version 4.0 brings new capabilities to the system such as increased expandability with support for running multiple Mykerinos DSP boards (up to eight) in the same system. This allows for adding increased numbers of DSPbased effects processors to the system's integrated surround mix architecture.

Contact: WaveFrame at <u>www.</u> waveframe.com. EQ free lit. #158.

### WAVES

Waves introduced the Restoration processor bundle for Native (PC and Macintosh) platforms. The new bundle addresses the increasing demand for noise and transient elimination tools. It includes four new plug-ins: X-Noise, X-Click, X-Crackle, and X-Hum. All are based on audio restoration technology licensed from Algorithmix GmbH, Germany.

Waves also premiered their new audio plug-ins for VST on Windows PCs. The update, version 3.2.1, is free to Waves version 3.x owners and includes improved efficiency providing acceleration for all native users. Version 3.2.1 comprises a comprehensive release supporting the many products using VST format on the PC.

Contact: Waves at <u>www.waves.com</u>. EQ free lit. #159.

### WESTLAKE AUDIO

Westlake Audio released their new twoway Lc4.75 monitor speaker system. Smaller than its predecessor, the Lc4.75 was designed for



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tracking and mixing studios, audio/video postproduction facilities, and mobile units. It employs a four-inch woofer with a 3/4-inch soft dome tweeter with a rated frequency response of 65 Hz-20 kHz.

Westlake also introduced the Lc3w12V monitor speaker system. It's housed in a bass-reflex enclosure and offers extensive electro-mechanicalacoustical dampening and integrated passive crossover for single or bi-amp operation.

The Lc5.75 comes in an extremely compact enclosure. At 14 x 6-1/2 x 9 (inches), and weighing only 18 pounds, it can be purchased in pairs or individually. Power handling is 80 watts continuous and the sensitivity is 88 dB at 1M for 2.83-volt input.



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Contact: Westlake Audio at www. westlakeaudio.com. EQ free lit. #160.

### X-VISION/AUDIO SERVICE

Audio Service was at the X-Vision Audio Booth with several new products. The Audio Service SDIF2 interface supports the Sony Digital Interface 2 format, which is used in Sony DASH recorders (3324, 3348) and Sony DAT recorders. The size of the card is the same as the Yamaha CD8 cards, so it fits into the D.A.I.S., 02R, and 03D mixers.

The new Audio-Service CD8MYAT enables the use of 24-bit word length in Alesis ADAT format for the Yamaha 02R, 03D, and the Audio-Service D.A.I.S. The Card uses the Yamaha MYAT Interface card, which is installed on the Audio-Service CD8-Extenderboard. Both Cards are supplied together.

The D.A.I.S.-DSP represents an integrated, compact matrix and DSP system. The basic system is equipped with the D.A.I.S. Router, a complete personal computer, and one DSP Card. Third-party DSP cards can be implemented.

Contact: X-Vision at www.xvisionaudio. com. EQ free lit. #161.

### XTA

XTA's remote control software for the company's Seriously Intelligent Digital Dynamics unit, SiDD, is designed for ease-of-use and is downloadable from the XTA Web site, the software will permit full control of up to 32 units (64 SiDD channels) for all EQ. compression, noise gate/expansion, limiting, and dynamic EQ functions of SiDD. Having all of these on a single screen gives any engineer quick access to all parameters and instant visual response.

XTA also presented SiDD (Seriously Intelligent Digital Dynamics), a dualchannel dynamics processor designed specifically for powerful and instant control in live sound applications. SiDD provides a comprehensive suite of dynamics tools.

Contact: XTA at www.xta.co.uk. EQ free lit. #165.

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### CIRCLE 81 ON INFO CARD

### **IN REVIEW**

# Røde NTK and NTIOOO Large-Diaphragm Condenser Mics

Røde's latest mics pack a mammoth punch at a modest price The availability of affordable, large-diaphragm condenser microphones stopped being news a while ago, but it hasn't stopped being noteworthy. When you consider the fact that classic entry-level condensers from the likes of Neumann, Telefunken, and AKG once cost as much as a small digital mixer does today, you realize just how important a role the low-cost condenser has played in the democratization of the recording biz.

> Røde Microphones was among the first companies to make the high-end mic manufacturers sweat. Many low-cost, largediaphragm condensers looked the part, but sounded as though there was Scotch tape across your tweeters, but those first Rødes sounded credible; if not world class, certainly legit enough for a real recording.

But, if those seminal Rødes might have been characterized as "nice mics for the money," the tube NTK and its FET sibling, the NT1000, do away with the qualifiers. These are impressive microphones; the fact that they happen to be a bargain is just the icing on the cake.

### **BASIC FEATURES**

Both mics are austere but elegant in design, and share many of the same basic components. Each has a one-inch capsule with a gold-plated membrane. Each is housed in matte-silver casing that's somewhat reminiscent in look and feel to a Neumann U 87, a much sturdier package than the early Røde models. Each mic screws securely into a basic yolk that offers some flexibility in positioning. The capsules are internally shock-mounted (an external shock mount is an optional extra). I tested them through a Millennia HV-3 preamp, with and without outboard compression, recording a



### **RODE NTK AND NTIOOO**

MANUFACTURER: Røde Microphones, 5 Averill St., Rhodes, NSW 2138 Australia. Phone: 61-2-8765-9333. US dealer: 866-841-1457. Web: www.rodemicrophones.com.

SUMMARY: Both the Tube NTK and the FET NT1000 raise the performance bar for affordable large-diaphragm condensers — in fact, they compare favorably to mics costing two and three times more. Thanks to their ability to handle a wide range of material and impressive audio specs, the only time you'll be aware of these mics' relatively low price is when you check your bank balance — after you've bought them.

**STRENGTHS:** Excellent sound. Wide dynamic range. Ability to handle high SPL. Hot output. Low self-noise.

WEAKNESSES: Fixed polar pattern. No pad or high-pass filtering.

PRICE: NTK \$999; NT1000 \$599 EQ FREE LIT. #: 102

variety of acoustic and electric sources.

Each offers a fixed-cardioid polar pattern and no other switches or controls - no pad, no low-frequency roll-off. While the fixed polar pattern probably won't matter in 90% of recording situations, the absence of the pad and roll-off could be more of an issue in how you use these mics in high SPL situations (the pricier Røde Classic II offers nine switchable polar patterns and high-pass filtering). That said, both mics are tough customers when it comes to handling hot signals - the NT1000 can deal with 140 dB SPL, the NTK with a whopping 158 dB. Even more important, both mics proved themselves versatile, reproducing both high- and low-level signals with integrity and color.

### NTK

Tube mic technology has had a nice resurgence in recent years, and not just because of the vintage sentimentalism that seems to be a

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CIRCLE 58 ON INFO CARD





Here are a few of the innovative software developers who offer support for the US-428. Cakewalk, Sonar and more virtual synth support coming soon. See the TASCAM web site for the latest info.

### SPECS AND FEATURES

### ΝΤΚ

- CAPSULE: Externally polarized 1-inch pressure-gradient condenser
- ACTIVE ELECTRONICS: Unity-gain closed-loop mpedance converter; vacuum-tube input with bipolar buffering
- PICKUP PATTERN: Cardioid
- FREQUENCY RESPONSE: 20 Hz~20 kHz (±6 dB)
- OUTPUT IMPEDANCE: 200 ohms (100 ohms per leg)
- SENSITIVITY: -38 dB ref 1V/Pa (12mV @ 94 dB SPL) ±1 dB
- EQUIVALENT NOISE: 12 dB SPL (A-weighted per IEC268-15) ±2 dB
- MAXIMUM OUTPUT: >+29 dBu (@ 1 kHz, 5% THD into 1k (load))
- DYNAMIC RANGE: >147 dB (A-weighted, per IEC268-15)
- MAXIMUM SPL: >158 dB SPL (@ 1 kHz, 5% THD into 1k (load)) SIGNAL/NOISE RATIO: > 82 dB (A-weighted,
- per IEC268-15)
- EXTERNAL POWER SUPPLY: 100-120V/200-240V AC (user selectable) 50/60 Hz, 25 VA

byproduct of digital technology. Tube mics are quieter, more reliable, and better sounding than ever before - welcome

- NTIOOO CAPSULE: Externally polarized 1-inch pressure-gradient condenser
- ACTIVE ELECTRONICS: Unity-gain closed-loop impedance converter; JFET input with bipolar buffering
- POLAR PATTERN: Cardioid
- FREQUENCY RESPONSE: 20 Hz-20 kHz (±6 dB)
- OUTPUT IMPEDANCE: 100 ohms (50 ohms per leg)
- SENSITIVITY: -36 dB ref 1V/Pa (16 mV @ 94 dB SPL) ±1 dB
- EQUIVALENT NOISE: 6 dB SPL (A-weighted, per IEC268-15) ±1 dB
- MAXIMUM OUTPUT: +13 dBu (@ 1 kHz, 1% THD into 1k (load))
- DYNAMIC RANGE: > 134 dB (A-weighted, per IEC268-15)
- MAXIMUM SPL: > 140 dB SPL (@ 1 kHz, 1% THD into 1k (load))
- SIGNAL/NOISE RATIO: > 88 dB (A-weighted, per IEC268-15)
- POWER REQUIRÉMENTS: 6 mA @ P48 (35V-53V)

ond

ASTIC OUT

news to anyone who's suffered while vintage tube hiss ruined an otherwise breathtaking sound.

The NTK is the guietest tube mic I've ever heard. In fact, with a reported signal-to-noise ratio above 82 dB, it rivals or outdoes many world-class solid-state mics. That's especially good news because the NTK's combination of robust sound and sensitivity makes it ideal for featured tracks in a sparse arrangement. The NTK captures vocals and acoustic guitar with all the intimacy and immediacy you'd want, bringing out the timbral nuances of the source with clarity and warmth. That last adjective is overused - we've all head marketeers say something sounds "warm" when, in fact, it sounds muddy or dull, but the NTK's warmth is genuine — fat, but with ample high-end detail. The mic has a nice proximity effect, adding depth to the low mids without overwhelming the sound. It yielded exceptionally good results with an electric guitar amp. On playback, I felt like I was standing in front of the amp's cabinet, not a pair of nearfields. The NTK produces a hot signal - the Millennia's input control never needed to go above 2. It's amazing what

tance

All Cables Sold Separately.

Finally, Litepipe<sup>™</sup> feeds can be longer than 30 feet. A LOT longer! Hosa's ingenious two-piece OGC-361 system makes possible Litepipe<sup>™</sup> feeds of *more than 300 feet (!*) over glass-fiber cables.

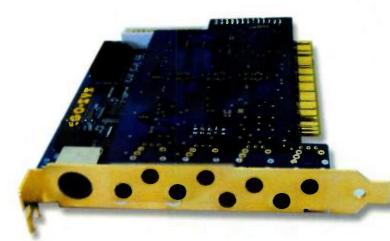


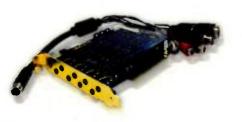
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		WDM	E-WDM		
11	MME bit depth	Up to 16 bit	10/24 bit up to 32 bit		
2	Total channel availability	12 In / 10 Out	Liniinited I/O		
	Independent MME support	NO	YES		
4	GIGA X ready	NO	YES		
5	ASIO 2.0	Ranety	YES		
6	SONAR with 1.5ms	NO	YES		
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7	985E/ME/2000/XP	YES	YES
8	Multi Client	NO	YES
9	Multi Streaming	YES	YES
10	GIGA WIRE Enabled	NO	YES
11	Multiple MIDI ports	NO	YES
12	Multiple Direct Sound	NO	YES
15	+6 dB Problem fixed	NO	YES

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a strong mic signal can do for the rest of your signal chain.

Setup is easy. Like most tube mics, the NTK comes with an external power supply. You connect the mic to the power supply via the supplied 30-foot seven-pin cable and connect the power supply to your mic preamp via a conventional XLR cable. The power supply house switches to lift ground and to set the voltage for the country you're in, but has no other controls. The power supply itself is quiet enough to position close to the mic, but the 30-foot cable also gives you the option of keeping the line from power supply to preamp as short as possible.

### THE NTIOOO

Tubes might garner all the glamour, but the FET NT1000 is no less impressive than the tube-driven NTK. In fact, it has even better noise specs (>88 dB), while boasting a similarly impressive capacity for handling high SPL and dishing out hot signal.



### Excellence

Since 1987 the M-1 mic preamp has been impressing artists, engineers and listeners around the world. Typical comments: "Whoa!" "Even the producer could tell the difference." The audio circuitry is simple, elegant and superior:

• Jensen JT-16-B mic-input transformer, Jensen's best mic-input model. If you thought transformers were a compromise, you haven't heard this one!

 990C discrete op-amp provides extremely low input noise, excellent output characteristics and superior sonic performance. Class-A operation.

• No coupling capacitors in the signal path. Capacitors degrade the signal. Transformerless circuits need them. Cheaper circuits use them. Not the M-1.

•VU-1 LED meter option (shown) provides great metering where you really need it. •Jensen JT-11-BMQ line-output transformer option (Jensen's best).

• All push-buttons are LED backlit, dimly when off, brightly when on. Channels and options can be added later. Much more. 15-day trial period. Experience excellence!



The NT1000 sounds more "open" than the NTK. It offers a fair amount of space in the upper midrange, giving sources such as acoustic guitar and female voice detail and sparkle without making them sound hyped or strident. It also worked very well on a midrangey male vocal from both moderately close and very close mic positions. I did have to throw a pop screen in front of the mic to handle the worst plosives, but that's true of most sensitive mics.

Like the NTK, the NT1000 works well with a variety of dynamic material (in fact, thanks to their high sensitivity, low noise, and wide frequency response, both these units would serve well as room mics). I was especially impressed by how the NT1000 captured a violin (positioned about 24 inches above the instrument) and a tin whistle. Both can sound shrill, but the NT1000 managed to get their detail without any harshness. It also worked well on electric guitar; it favored the upper mids more than the NTK, but lacked some of the tube mic's punch. The NT1000 handled drums guite well, capturing the attack and resonance of a floor tom; unfortunately, this is one area where I wished the mic had a pad - it was hard to avoid overdriving my recorder's inputs, even with the Millennia turned all the way down.

### A PAIR OF WINNERS

Working with the NTK and NT1000 is a little like dating great-looking twins. Both mics excel at a variety of tasks while offering exceptional specs. Perhaps their most impressive quality is their ability to handle a wide dynamic range of material. Many condensers can do a great job on intimate vocals and acoustic guitar, while others can handle drums, electric guitar, and the Screamin' Jay Hawkins school of singing, but very few can do both things well: these do. When it comes to bang for the buck, the NTK and NT1000 are in a class by themselves.

Emile Menasché used both Røde mics to record the following over and over: "I will not buy more gear, I will not buy more gear."

CIRCLE 72 ON INFO CARD

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# Cakewalk Sonar XL Digital Audio Sequencer for Windows

The new face of audio, MIDI, and loop construction Okay, show of hands — how many of you can get by on just one piece of music software? Set aside plug-ins for a moment, those are necessary additions to *any* rig, but core composing/production software is a different story. While all the major players are loaded with features, there's inevitably one or two that are missing. "Why can't Pro Tools handle MIDI better?" "Why doesn't Logic offer Acid-style time stretching?" "If only Acid had stronger MIDI functionality...."

Sonar, from Cakewalk, is more than a repackaging and upgrading of the company's venerable flagship package Pro Audio 9. It's an attempt to combine the most popular modern music-making tools, including audio recording and editing, MIDI recording and editing, audio loop construction, software synthesis, virtual mixing, digital video support, and low-latency native audio, into one package. While the new software builds on many of the qualities that have made Cakewalk so popular with PC users, it offers a new interface and a long list of new features.





### **GETTING STARTED**

Sonar provides a complete arsenal of native audio/MIDI features, including an unlimited number of audio and MIDI tracks and the ability to handle audio resolutions up to 24-bit/96 kHz. Any audio track can be mono or stereo - the program creates the appropriate type to suit the incoming signal or prerecorded clip, so you don't have to specify or deal with error messages for stereo incompatibility, as you might in some competing programs. Installation is easy, with only serial number copy

FIGURE 1: Sonar shows you all the relevant mix information on its main screen.

FIGURE 2: Sonar ships with a number of soft synth plug-ins, including the DreamStation DXi pictured above. FIGURE 3: Sonar's Loop Construction window lets you set an audio clip's tempo and pitch parameters in precise detail.



### CAKEWALK SONAR XL

MANUFACTURER: Cakewalk, 51 Melcher Street, Boston, MA 02210. Phone: 888-225-3925. Web: www.cakewalk.com.

SUMMARY: A slick interface, high-performance audio engine and a long list of modern music-making tools will make Sonar a major player in the digital audio sequencer arena.

STRENGTHS: Seamlessly combines audio, loop, software synthesis, and MIDI recording. Works with WAV, AIFF, and MP3 files. Drag and drop support. Elegant and efficient interface. 24-bit/96 kHz capable audio engine. Flexible I/O. Capable of latency as low as 1.5 ms. Ships with a number of full-featured DXi synths. Excellent online help. Frameaccurate sync. Digital video support. Imports Acidized files.

WEAKNESSES: Tool selection can be cumbersome at times. DXi synth technology isn't as widely supported as VST. Processor hungry. Relatively weak sample editing implementation. Can't export Acid-ized files.

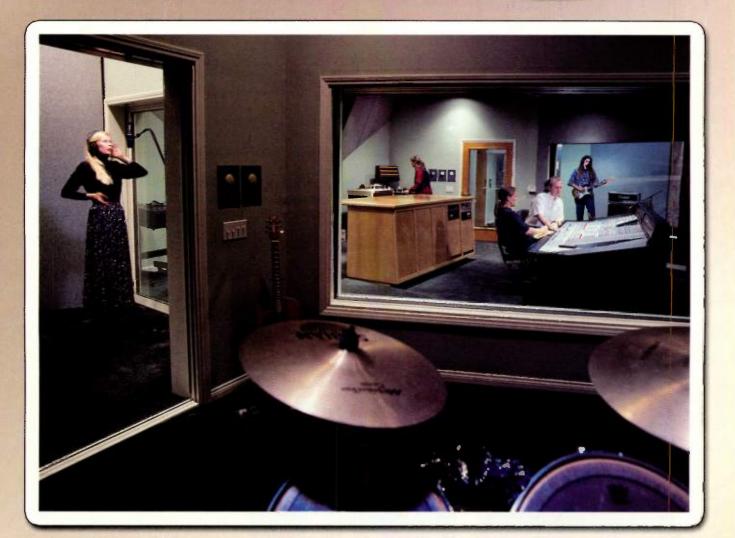
VERSION REVIEWED: 1.0.2 PRICE: Sonar \$479; Sonar XL \$739 EQ FREE LIT. #: 162

protection to deal with. I had a little bit of trouble getting Sonar to recognize my sound card at first; some helpful online tech support and a driver reinstall solved the problem.

Latency is native audio's biggest drawback. The ASIO 2.0 spec, championed by Steinberg and adopted by much of the rest of the native audio community, offers impressive performance. Sonar goes a different route. Using Microsoft's new WDM audio drivers under Windows 2000, latency can be as low as 1.5 milliseconds (you can also use WDM drivers under Windows 98 SE). Check Cakewalk's Web site to see what WDM drivers are available.

My Windows 98 SE system is fairly modest (a Pentium III with 128 MB RAM and a Fast SCSI hard drive). With a Soundscape Mixtreme audio card, I got consistent latency as low as 37.7 ms on recording and playback without dropouts.



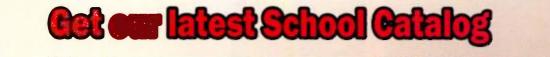


OS ANGELES

RECORDING

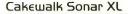
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### **IN REVIEW**

Sonar allows direct monitoring of inputs with effects, so you can use it to mix disk tracks and external modules in real time.

### INTERFACE

At first glance, Sonar looks like every other computer-based audio/MIDI recorder. The main action takes place on the Track View screen, which offers a spreadsheet view of audio and MIDI data, with track name on the left-hand side and data on the right. But it's the second glance that's important. Sonar, like other programs, lets you expand and collapse individual tracks to get a better look at what's happening within them. However, when you expand a track in Sonar, you're also treated to a full view of that track's relevant parameters, including audio or MIDI input and output assignments, mute/solo and recordenable status, volume, pan, aux send controls, and insert effect assignments. What's more, you can control these parameters right from the Track View screen. No need to switch to a "Mixer" view to add an insert effect or bump up

### SONAR vI.3

At the fall AES show, Cakewalk announced version 1.3 of Sonar. Here some feature highlights:

### EDITING

- AUDIO SCALING: Zoom in on quiet audio to make detailed edits without changing track heights.
- IMPROVED ZOOMING CAPABILITIES: More flexible vertical scale with Envelope Pan and Zoom Scaling. Users can now view envelopes in +6 to -6 dB, +6 to -18 dB, etc. Scissors Tool: Split audio and MIDI clips quickly as well as drag-and-drop to a desired region.

#### MIXING

- OFFSET GAIN STAGE: Allows the mix to be adjusted independently from envelopes via Dual Mode Gain and Pan Controls.
- ENVELOPES: Make envelope changes and hear the results without disruption of the audio signal.
- FADE TOOL ENHANCEMENT: More flexibility in choosing the type of fade curve to apply to audio clips — also with enhanced slow and fast curves and crossfades.

The Sonar 1.3 update will be available on October 1, 2001 [free for registered Sonar users]. It can be found at <u>www.cakewalk.com</u>. the track volume; it's all right there under your fingertips.

Efficiency is the name of the game. Right click in the track's insert window to assign an effect or soft synth to the track; Click a button next to the inserted effect's name to bypass it. Double-click the insert, and its editor opens up. You can change the order of the inserts in the signal path by dragging them back and forth within the insert window. You can even set up mix groups right from the main screen. Even better, you can expand and collapse each track with a single mouse click. The Track View window offers a separate pane for aux and output busses, which you can control in the same way as the tracks.

If you feel more comfortable with a traditional mixer layout, you can open Sonar's Console view, which shows a mixer very much like the one found in older Cakewalk products. Any changes made on the Track View screen are carried over to Sonar's Console view. However, this mixer is somewhat hard to look at; once I got used to mixing from the Track View screen, the Console view seemed redundant, and switching to it merely slowed me down.

You can store and recall screen layouts — handy, because Sonar, like other digital sequencers, can get cluttered. It also offers dual-monitor support, and you can set individual windows to float so that they're always visible.

The Track View screen also offers an efficient and centralized platform for handling MIDI, audio, and mix automation. Like most programs, Sonar deals with music in clips — individual segments of MIDI and audio.

You can name individual clips, colorcode them, and move them freely within the arrangement. You can snap clips to a variety of grid values — musical notes, markers, SMPTE time, and more. You can set clips to butt up against the previous clip (as in Pro Tools Shuffle mode). You can also enter a manual spot time for any clip, in either timecode or in Bar:Beat:Click value. Nice.

Sonar lets you deal with all the data on a track globally, or right click on any individual clip to process it. A menu appears that lets you apply audio and MIDI effects (destructively), set edit parameters, and more. Sonar doesn't offer a separate

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### SPECS AND FEATURES

### SYSTEM REQUIPEMENTS

MINIMUM: Windows 98 or better (not compatible with Windows 95 or NT); 400 MHz PII or better, 64 MB RAM, 100 MB free hard disk space, 800x600 screen resolution/256 colors, CD-ROM drive (for installation), MIDI interface and/or Windows-compatible sound card

RECOMMENDED: 800 MHz processor; 256 MB RAM; Windows 2000; 7,200 RPM hard drive; 3 GB drive space; 1,280 x 1,024 screen resolution. Windows 98 SE or higher for WDM driver.

AUDIO DRIVERS MME, WDM

SAMPLE RATES: 11.025, 22.05, 44.1, 48, 96 kHz

BIT DEPTHS: 16, 18, 20, 22, 24 (records at 16 and 24)

**REAL-TIME PROCESSING BIT DEPTH: 32** 

VIDEO SUPPORT: Import AVI, QuickTime, MPEG

SYNCHRONIZATION: Frame accurate SMPTE, MIDI clock, internal, sound card

# AUDIO TRACKS: Unlimited mono/stereo

# MIDI TRACKS: Unlimited

INSERTS/TRACK: Unlimited (depending on processing power and memory)

SENDS: 16 per channel (pre and post switchable)

BUSSES: 64

I/O: Hardware dependent (see <u>www.cakewalk.com/Products/SR/FAQ-Hardware.html#3</u> for latest info)

EFFECTS: DirectX support. Ships with: Amp Simulator, Amp Simulator Lite, Chorus, Delay, Delay/Echo, Flanger, FxCompressor/Gate, FxDynamics Processor, FxExpande-/Gate, FxLimiter, Fx2 Tape Simulator, FxChorus, FxDelay, FxEQm, FxFlange, FxReverb, eight-band parametric EQ, Pitch-Shifter, Reverb, Alien Connections, ReValver

SOFTWARE SYNTHESIS: DXi format. Ships with DreamStation DXi, LiveSynth Pro SE (30-day trial), Tassman SE or XL, Virtual Sound Canvas Dxi.

AUTOMATION MODES: Overwrite, Touch, Auto Punch, Snapshot, Manual drawing of envelopes.

AUDIO FILE FORMATS IMPORTED: WAV, Acid loops, AIFF, Windows Active Streaming (ASF), Next/SUN (AU, SND), MPEG (MP2, MP3, MPG, MPEG)

AUDIO FILE FORMATS EXPORTED: WAV, MP3, RealSystem G2, Windows Media Advanced Streaming (Includes trial version of Fraunhofer MP3 encoder)

MIDI RESOLUTION: Up to 960 ppq

MIDI EDITORS: Piano roll, event list, notation

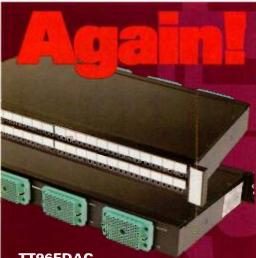
OTHER SELECTED FEATURES: Real-time MIDI effects, CAL programming language, dual monitor support, screen layouts recall, StudioMix support

audio editor (ä la Cubase or Logic). Instead, the Track View window lets you zoom in on individual audio clips right down to the sample level. One thing I found odd was that the audio processing available with the right mouse click includes any DirectX effects available on your system, but does not include staple "waveform editor" DSP processes such as Normalize and Gain Change. For these, you'll need to access the main Edit menu.

### MAKING ARRANGEMENTS

Sonar has raised the bar in terms of integrating conventional audio recording, MIDI, and loop construction. Thanks to the efficiency of the interface, arming and recording tracks is a breeze. Sonar offers a number of loop record and auto-punch tools that help you get your work done quickly. Unlike earlier versions of Cakewalk, Sonar lets you record as many channels as your I/O allows.

Adding prerecorded loops is also quite easy. The Loop Explorer window lets you search your entire system, including network drives, for audio files. WAV, AIFF, MP3, and other formats can be integrated into the same arrangement, as long as their sample rates match up. You can preview files from disk and tell the Explorer to output the files through any available mix bus, so you can hear them in context.



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### IN REVIEW

You can drag a file directly into the Track View.

Audio Clips come in two varieties. Standard clips are like any other audio data - they're linear tracks that have a fixed duration and pitch. Groove clips are embedded with tempo and pitch information (similar to Acid loops) that allows them to be time-stretched and transposed nondestructively on playback. This is Sonar's most powerful feature. You can import groove clips (including any Acid-ized clips you may have), and they'll lock up and play back in time without a problem.

Double-clicking a clip calls up the Loop Construction window, which shows a ReCycle-like view of the audio wave with markers at slice points. From here, you can optimize playback performance, enable looping (which allows you to repeat the clip by simply stretching it across the Track View window), enable stretching, (which allows the clip to follow tempo and pitch information), transpose the clip by half-step intervals, fine-tune it by cents, and preview vour work.

You can use Loop Construction to convert from a standard audio clip to a groove clip, which lets you impose tempo and pitch changes on your audio, after the fact, without having to go through any destructive time-compression routines.

Arranging with loop clips is a breeze. You can copy and paste individual clips or simply drag the end of the clip to the duration you want. One of the nice things about Sonar is that it lets you use any number of different clips on the same track, something not currently available with Acid.

Sonar handles Acid-style time and pitch manipulation like a champ. Its user-friendly tempo-mapping tools let you draw progressive tempo changes in your arrangement guickly and intuitively. As a test, I tried speeding up a song from 120 to about 140 over the course of four measures. The track consisted of Acid loops and some original guitar that I recorded and later converted to groove clips. Both the Acid loops and the guitar followed the tempo without a glitch - and without any undue fussing in the Loop Extractor. Impressive stuff.

### PLUG-INS AND SOFTWARE SYNTHESIS

Sonar XL ships with a number of staple audio effects, and is also compatible with other DirectX plug-ins. In general, the plug-ins sound good and are easy to operate, although the one effect. out-of-the-ordinary Amp Simulator, was a bit of a disappointment. But the real news is DXi, Cakewalk's alternative to VST synthesis. The VST/DXi wrapper from Amulet allows VST plug-ins (both effects and soft synths) to work in Sonar.

Sonar XL also comes with a number of DXi synths and processors, including DreamStation DXi, an analog-type synth, a thirty-day demo of LiveSynth Pro SE, which can playback SoundFont-compatible samples (when the 30 days are up, maximum SoundFont file size is limited to 1 MB), Tassman DXi, a beast capable of some real sonic madness, and Virtual Sound Canvas DXi, which offers a full complement of General MIDI sounds. There's also a vintage tube simulator, the ReValver SE, which does a very nice job of warming up the signal.

You can insert a DXi synth as a plug-in on any audio track - no need to pre-configure it for synthesis - and you can add effects to the track as needed. You play a DXi from a separate MIDI track. Once the synth has been activated, its name appears automatically among the MIDI output assignments. The only drawback to this system is that you can't solo the synth without also soloing the MIDI track.

### AUTOMATION AND OUTPUT

Sonar's mix automation is comprehensive and rock-solid. You can automate almost any parameter of any track, either in real time, via snapshot, or by manually drawing envelopes in the Track View screen. Space doesn't permit going into detail about all the automation modes and features. Suffice it to say that Sonar's integration between graphic and traditional

▶ continued on page 147

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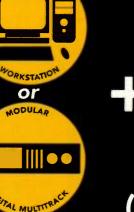
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CIRCLE 09 ON INFO CARD

### IN REVIEW

# Groove Tubes Vipre Variable-Impedance Tube Mic Preamp

Big, warm tone rises without impedance from a Class A mic pre The Vipre, or Variable Impedance Preamplifier, is a single-channel, all-tube microphone preamp from Aspen Pittman and the crew at Groove Tubes. Take one look at this 30-pound, threerackspace monster, and you know you've got something a little different. As the name implies, this preamp offers four different input load impedance choices, along with selectable rise time and VU meter ranges. What this translates to is a choice of sonic characteristics achieved by altering the way the preamp reacts with different microphones, old or new. This Vipre isn't a snake, it's a chameleon.

The manual proudly states that the unit features no semiconductors, transistors, integrated circuit chips, or electrolytic capacitors anywhere in the signal path. The Vipre is a linear Class A, all-tube design, capable of 75 dB of total gain. The frequency response is listed at 7 Hz-100 kHz, and there are a total of eight specially chosen military-spec tubes inside: four GT 6922 (6DJ8 or ECC88) in the first two stages, a GT 6205 on the instrument input gain stage, and a GT12AT7, followed by a matched pair of GT6005's (6AQ5) on the output stage. The custom-made input transformer is carefully shielded with a double Mu-metal casing. This humbucking transformer is a multi-tap design, which allows for the unique load impedance options.

The imposing-looking front panel features a matte black finish with two large, chrome rack handles. The first thing you notice on the Vipre is a big, classic-looking, round VU meter. Below that are two signal LEDs — a green LED for





### **GROOVE TUBES VIPRE**

MANUFACTURER: Groove Tubes, 1543 Truman Street, San Fernando, CA 91340. Tel: 818-361-4500 Web: www.groovetubes.com. SUMMARY: A single channel, all-tube Class A microphone preamp/direct box with Variable Impedance choices. STRENGTHS: Sounds great. Sonically flexible. Excellent metering. All-tube signal path. Killer DI box. WEAKNESSES: Too heavy to carry around, and I don't have two of them! PRICE: \$2,999 EQ FREE LIT. #: 163

peaks reaching -3 dB before clip and a red LED for a full clip. On either side of this section sit two large stepped gain control knobs. The left knob handles the gain from 20 to 70 dB in 5 dB steps, and the right cuts or boosts gain in 1 dB steps, with a 5 dB max either way. On the left side is a 1/4-inch instrument input, which feeds the highimpedance circuit with its own GT6205 tube. Next to that sits the input selector, with -20 dB Instrument, Balanced Bridge, and Balanced XFMR (transformer) choices. When set to Balanced Bridge, the input bypasses the input transformer. When set to Balanced XFMR, the Impedance selector knob becomes active. This allows you to experiment with any of the four impedance selections - 300, 600, 1,200, and 2,400 Ohms.

On the right side of the Vipre are the VU Meter Range and Rise Time knobs. The VU Meter Range, when set to 0 VU, shows a +4 dBm output. 0 VU Expand allows you to see a superwide range from -60 to +13 dB, and the three other choices are +10, +20, and +30. This unique metering functionality enables users to see both very low and very hot signal levels. The Rise Time knob features five settings: Slow, MS, Med, MF, and Fast. This controls the Vipre's slew rate (measured in volts per microsecond), which has a direct relationship to high-frequency and  $(\mathbf{r})$ 

# Take Control of Your Roon

London-14 Studio

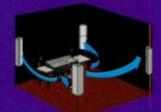
Europa Flutter Wall
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Europa Flutter Wall Reduces 'front to back' echo, standing waves and monitor fold back. Over 28 creative patterns to choose from. Prices start at \$150\*.

#### Scandia Scatter Blocks Affordable alternative to diffusion. Keeps room live and reduces standing waves. Over 12 creative patterns to choose from. Prices start at \$100\*.

Orientique Washboard Absorbs primary reflections and side-to-side flutter. Six creative patterns to choose from. Prices start at \$80\*.



Australis Bass Trap Effective oown to 45Hz, tightens up bass and reduces smear. Can be used in corners or on walls. Priced at \$100° each.

Primacoustic is a division of JP CableTek Electronics Ltd. #114-1585 Broadway, Port Coquitlam, BC, CANADA Tel (604) 942-1001 Fax (604) 942-1010

www.primacoustic.com

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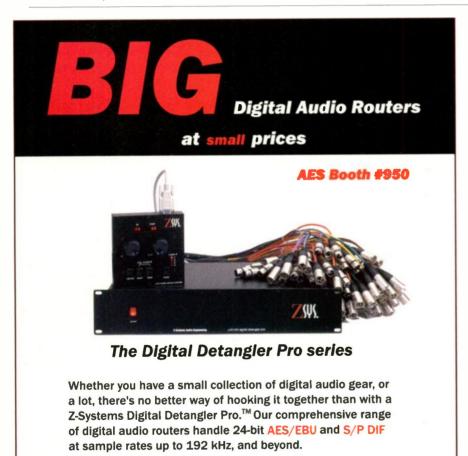
### Tell 'em you want to Take Control

### IN REVIEW

transient response. Fast corresponds to more modern preamps (6 volts per microsecond) and Slow is more representative of vintage gear (0.75 volts per microsecond). Topping off the front panel are two good-looking chrome grilles for additional heat dissipation.

The rear of the Vipre features balanced XLR input and output, as well as +4 dBm and -10 dBV 1/4-inch outputs. There's also a balanced line input in parallel with the XLR input, but with 20 dB lower sensitivity. This is where you would plug in synths or signal processing gear. The AC main out and an easily accessible fuse are also placed on the back of the unit.

The combination of variable impedance and rise time options on the Vipre make it a unique, highly flexible preamp. Older microphones generally like to see lower impedances, and new mics will sound familiar by running the Vipre in Balanced Bridge mode. By altering the rise times, the characteristics and transient attacks of the mics will change —



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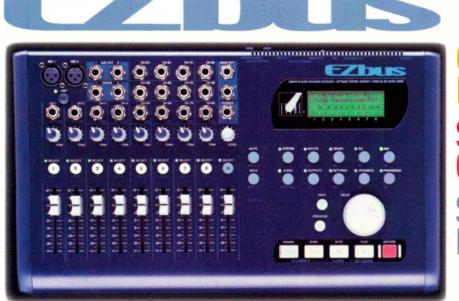
from quick and airy on Fast to round and smooth on Slow. There are no correct settings for any of these modes; it's truly up to your ears to decide.

Another use of the Vipre is as a Class A, tube-driven direct box. My first experience with the unit was plugging a Telecaster into the instrument input on the front and clicking the sturdy knob to, you guessed it, Instrument. To me, a Tele is a tough instrument to get a good DI sound out of, due to its honky, singlecoil pickups. The Vipre was up to the task and then some. The sound was smooth as silk, bringing out the true tone of the guitar, without the unpleasant top I usually hear on DIs. This is classic tube sound. Next in line was an old Fender Precision Fretless, and, again, the same results. Round, smooth tone — quite characteristic of the actual sound of the instrument. Highly recommended.

Now it was time to dig deeper. Taking an old AKG C12 out of the closet, I started with a male vocalist at 2,400 Ohms and fast rise time. The sound of the mic was what I expected, and had honestly grown to dislike (don't kill me!). I recorded passages at each setting (both rise time and impedance), and was quite amazed at the results. At 300 Ohms, the mic opened up on top with added depth, - I never heard it sound so good. I actually liked this mic again! Changing the rise time altered the characteristics somewhat, but not dramatically. With my next attempt, an older Neumann U 87 also took on new life, increasing in gain and fullness as I lowered the impedance. Then I recorded a trumpet player with a newer AKG C414, but found the changes much less dramatic at all settings. My GT AM series tube mic and Earthworks TC-30K changed the least of all, although the top end did smooth out a bit on both mics at slower rise times. This variable impedance was a concept I hadn't worked with before, but was immediately impressed with.

The Vipre is definitely a first-class preamp. Older mics literally take on new life with a few knob twists, and the unit is certainly easy to use. Combining smooth tube sound, an excellent DI path, and variable impedance options, it's a highly flexible studio tool. This one is a winner!

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# Earthworks IO24 Four-Channel Microphone Preamp

Four channels of Zero Distortion The cutsheet for the Earthworks 1024 microphone preamp states that it's clean, it sounds clear, and it has gain. Well, without sounding non-original and repetitive, it *is* clean, it does sound clear, and it has gain lots of it. It's almost that simple!

The 1024 is a four-channel, single-rackspace preamp from Earthworks Professional Audio Products, in Wilton, New Hampshire. Known primarily for their LAB series preamps and an expanding line of high-guality microphones, the 1024 is Earthworks first offering featuring their new Zero Distortion Technology (ZDT) tag. ZDT, according to Earthworks director of sales and marketing Eric Blackmer, is primarily two things - a standard of excellence and the beginning of a new series of products from the company. With under one part-per-million distortion at 10 volts, 2 Hz to 100 kHz frequency response, and very low noise of any kind, the preamp does provide exceptional specifications. The question is, how will those great specs translate to sound? I must admit, I was anxious to plug it in and have a listen.

The layout of the 1024 is straightforward and simple. The front panel is broken down into four identical sections, one per channel. Each of these features a large precision stepped gain knob, ranging from 5 to 60 dB of gain in 5 dB steps, that feeds the channel's XLR output connector. Next to that is a smaller continuously variable gain control knob that feeds the 1/4-inch TRS output. Each channel also has a cool clip indicator LED that's designed to warn you before the preamp actually clips. When reaching 90% of full output, the LED will flash momentarily. The farther you go beyond that threshold, the longer the LED will stay on. If you have a fullon clip, it will stay lit for one second. Below this Clip light is a 48-volt phantom power switch with LED indicator and a polarity



### EARTHWORKS 1024

MANUFACTURER: Earthworks, Inc., PO Box 517, Wilton, NH 03086. Tel: 603-654-6427. Web: www.earthwks.com. SUMMARY: A four-channel microphone preamp offering both XLR and TRS outputs on every channel. First in Earthworks new Zero Distortion Technology (ZDT) series of products. STRENGTHS: Four channels of preamp in a single rack space. Transparent. High-quality sound. Flexible output capabilities. Very low-noise. WEAKNESSES: No power switch. Limited metering. PRICE: \$3,500 EQ FREE LIT. #: 164

reversal switch. There's also a very useful standby switch, which mutes the preamp output while the microphone remains phantom powered. Finally, the master power LED sits at the right side of the unit, but there's no power switch on the front or the back. Once you power up your AC, you're on.

The rear of the 1024 features four XLR balanced transformerless inputs, configured pin 2 hot. There are two different types of outputs on the 1024 per channel; the first is an XLR labeled "ZDT Balanced Stepped Out," while the other is a 1/4-inch TRS jack called "Variable Out." The variable 1/4-inch out is 6 dB lower than the XLR out (when set to 0 dB with the variable output knob) and was included to provide a feed for unbalanced gear. Simply stated, the stepped gain control feeds the XLR output,



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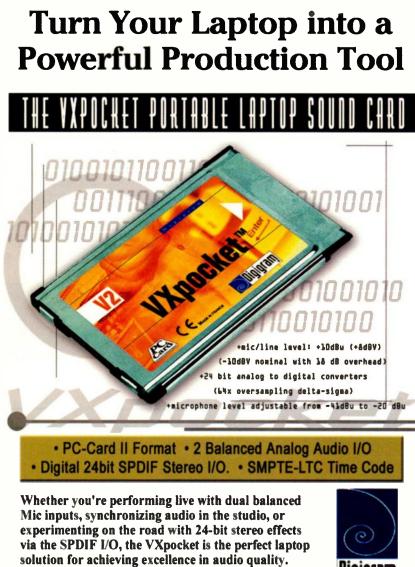
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### IN REVIEW

and the variable gain control feeds the TRS output. As you'd expect, the XLR out provides better specs, and is the recommended connector option. Earthworks noted that the primary gain structure, XLR input to stepped gain to XLR output, is an entirely differential balanced path - something not seen in many pieces of gear.

The day I received this preamp it went right to work. With a quick and easy setup, I began with a stereo track on a Ramirez flamenco guitar.

The mics were a matched pair of Earthworks QTC-1 omnis, sent to Pro Tools at 48 kHz, 24-bit. Dialing up a quick level, both the artist (in his cans) and myself immediately noted the grandé, truly authentic sound of the instrument. The audio coming through the speakers was exactly the sound I heard standing in front of the guitar. The transients of a flamenco guitar track can be sharp and quick, but the 1024 handled them with ease. I lit up the clip LED often, as I tend to



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and, again, I got clean, clear tracks

ble distortion came through.

with low noise levels. When using a preamp, those are fundamentally the qualities I seek, and the 1024 delivers the goods as advertised.

print as hot as possible, but no audi-

cussion overdubs with a pair of GT

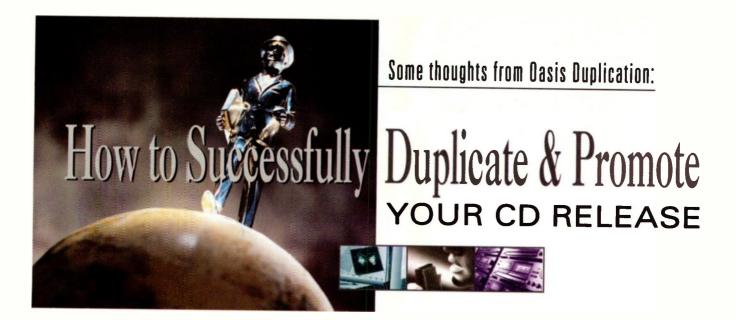
AM Series tube mics and DPA omnis,

Next, I tried some cymbal and per-

Next, it was upstate to the Clubhouse studios in Rhinebeck. New York for a surround session. The objective was a four-channel remiking of 16 individual passes of strings consisting of cellos, violas, and violins. Setting up two Hot House speakers and feeding the mix through a Sony DMX-R100 into the large live room, I was seeking a sense of clarity and distance from the originally close-miked section. I set up the 1024 directly in the room, and fed two close Earthworks TC-30Ks into channels one and two. then two distant QTC1's to channels three and four. The XLR outputs were run directly to Pro Tools, again at 48 kHz/24-bit. Once more, the results were excellent, with crisp clean tracks that truly added a sense of warmth and depth to the multichannel mix. I drove the preamp gain hard, lighting up the LEDs often, but the output to Pro Tools never distorted. In this particular application, low noise was essential, and the 1024's fully differential path let me capture dynamic tracks without adding unwanted distortion.

Overall, the 1024 provides a truly uncolored sound. For those who seek a sonically pure, high-gain transparent signal path, this preamp is for you. I found the 1024 revealed the true characteristics of the microphones that were plugged into it, translating the instruments and environments perfectly. This four-channel, single rackspace preamp is sure to find a place in many mobile trucks and audiophile rigs, but its TRS outputs will make home enthusiasts happy as well.

One last note for those who don't require four channels: Earthworks plans to release a 1022 two-channel model (\$2,000) in the fall.



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# editoria

# It's Not The Gig, It's The Commute

Engineer George Geranios once told me "It's not the gig, it's the commute." This point was driven home when a couple of frequent flyer statements arrived, reminding me that I flew almost 40,000 miles last month. That's an awful lot of "air" time, and a lot of potentially *wasted* time — especially in light of the general demeanor (read: disservice) of many airlines these days. I'm guessing that you're about as happy as I am about wasting time, so I thought it might be worth sharing a few ideas on how to spend some of that time productively.

Carry something to read. I'm just as content to read the new Tom Clancy novel, but, let's face it, there's always a pile of technical stuff waiting that we should have read long ago. Have you really tapped the potential of your processing gear? Have you even read the manual once? Reading it on the way to a gig might give you an idea to put into practice that night. Of course, you should *always* be carrying the latest issue of EQ — not only because it's full of great articles, but also because it impresses everyone around you!

Take your computer along for the ride. God made laptops for editing Digital Performer sessions on the road. Burn a CD-R before you leave, load it in, and off you go (please use headphones so as not to disturb others!). Add an audio interface, and you can have a studio in your hotel room. You can also use your laptop for creating stage plots or input lists, listening to CDs, and (oh the horror!) playing games.

Use your email server to its full potential. You don't need to be online longer than it takes to download your email and save it to an electronic filing cabinet. Answer it while you're in the air and use the "send later" feature to dump it when you get to the hotel. Most programs have automated routines for this sort of thing.

Carry a tape recorder. There's nothing worse than having a song in your head and no place to put it. Of course, you can always call your own answering machine and sing yourself a message.... If all else fails, you can do the crossword in the flight magazine. One across, three down, ZZZzzzzzzz...

-Steve La Cerra slacerra @uemedia.com



### 110 New Products The latest product

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The latest product releases aimed at live sound applications

### 112 Review AKG C900 Handheld Condenser Microphone

Feature Hancock in Surround Here are 5.1 reasons to see Herbie Hancock perform live

# **EQLIVE: NEW PRODUCTS**



### COMMUNITY WET218/WET228

THE PRODUCT: Community WET218 and WET228 THE BASICS: Weather-resistant loudspeakers THE DETAILS: The WET218 is a two-way loudspeaker that operates between 70 Hz and 18 kHz. It has a maximum output rating of 120 SPL (peak). The WET228 packs two eight-inch carbonfiber low-frequency and low-mid elements with a coaxially mounted high-frequency driver. Both units are designed to operate in demanding environmental situations such as rain and wind. CONTACT: Community at <u>www.loudspeakers.net</u>. Circle *EQ* free lit. #103.



**ERYSTON 6B-ST THE PRODUCT**: Bryston 6B-ST **THE BASICS**: Three-channel amplifier **THE DETAILS**: The Bryston 6B-ST three-channel amplifier is designed to remedy your crosstalk woes with three independent modules for improved imaging. Each channel can provide 250 watts into eight ohms or 400 watts into four ohms — each independently with its own circuitry, connections, and power supply. The unit features a three-position gain selector for balanced or single-ended inputs and a polarity switch on each channel, as well as a remote 12-volt power trigger input with a delayed output function. **CONTACT**: Bryston at <u>www.bryston.ca</u>. Circle *EQ* free lit. #104.



ATLAS SOLIND 2028/20210 THE PRODUCT: Atlas Sound 2028 and 20210 THE BASICS: Professional stage monitors THE DETAILS: Atlas Sound's 2028 and 20210 feature horizontally mounted woofers with centered high-frequency drivers to produce a targeted dispersion pattern. The 2028 handles 150 watts RMS, 225 watts peak, and total power handling of 600 watts. The 20210 pumps 200 watts RMS, 300 watts peak, and has total power handling of 800 watts. CONTACT: Atlas Sound at <u>www.atlassound.com</u>. Circle *EQ* free lit. #105.



RADIAL ENGINEERING STAGEFLEA 12 THE PRODUCT: Radial Engineering StageFlea 12 THE BASICS: Twelve-channel sub-snake THE DETAILS: Radial Engineering's latest edition to the StageFlea line is the StageFlea 12, a twelve-channel sub-snake that features a 14-gauge steel case and horizontally mounted connectors (an alternative that reduces the risk of damage to the unit and cables). The StageFlea 12 ships with XLR splay (or the option of 37-pin VLK or CPC multi-pin connector). CONTACT: Radial Engineering at <u>www.radialeng.com</u>. Circle *EQ* free lit. #106.





# AKG C900 HANDHELD CONDENSER MICROPHONE

### BY TIM FARRIS

AKG steps into the "for those working professionals who are ready to move up" marketplace with the Emotion Series vocal condenser C900. The Emotion C900 is a fantastic sounding microphone that should be considered when looking to upgrade your live vocal performances.

The C900 is an attractivefeeling and -looking mic with matte-black finish and a 24carat gold plated decorative ring, and "gold-sputtered" transducer. It comes with a standard PB1000 Presence Boost Adapter, which provides a 3-4 dB peak between 5 and 13 kHz. I learned that the PB1000 was an essential element in the mic's performance.

I first tried the C900 through an AMS Neve V3, monitoring it with Genelec 1031A's. There

was a pretty heavy low-end response — somewhat repressed in the mids and lacking a sense of openness and breath. Next, I tried on the PB1000 cap, and the mic came alive! The voice was clear and present throughout the upper audible range, and the extended low end was now accentuated

AKG C900	REVIEW
MANUFACTURER:	AKG Acoustics, 1449 Donelsen Park, Nashville, TN 37217 Phone: 615-360-0499. Web: <u>www.akgusa.com</u> .
SUMMARY:	Delivers the sound of more expensive microphones in a rugged and road-ready package
STRENGTHS:	Sounds great. Low price. Durable. Sturdy shockmount.
WEAKNESES:	None to speak of.
PRICE:	\$250
🗆 EQ FREE LIT. #:	107

with clarity, giving this mic a large condenser-type sound. Using the C900 for a voice-over job, the narrator's male voice sounded fantastic, with great warmth and clarity.

For live sound tests, we headed to Nashville's Ryman Auditorium. Working with Ryman engineer Les Banks, we tried the C900 (with PB1000) on vocals, and the mic had great presence and balance. The vocal sounded large and crisp in the room. Utilizing a Soundcraft SM-16 with 12AM wedges powered by Carver's CBA-1000, the C900 was loud and clear. Dynamic vocal mics came nowhere close to the C900's warm sense of low end and its clarity in the 8-12 kHz range. Gain before feedback was exceptional, and surpassed that of other mics compared to it. The frequency-independent cardioid pattern of this mic is very nice in most areas, except for the 10 to 12 kHz spike at 180 degrees - but most condensers have that trait. The C900 seems to have a tiny midband suppression at 1.6-2 kHz, allowing pretty high SPL while remaining pleasing to the ear. We compared the C900 with large diaphragm condensers on the grand piano, and it held its own against mics two to three times its price and size. We were impressed.

We also took the C900 onstage at Nashville's Wild Horse Saloon. Staff monitor engineers Tom Stegemann and Mike Thamann met me onstage. We needed to high-pass the mic to about 150 Hz and cut it about 6 dB at 400 Hz. Again, the level before feedback blew us away, and Thamann said the C900 sounded "spectacular" and "painfully loud." The rubber shockmount ring that holds the transducer case is rugged, sturdy, and does a great job at suppressing handling noise. This mic seems to be ideal for those who are traveling and need durability and performance.

This mic displays a lot of great sonic qualities that are only offered on mics at much higher prices.

Tim Farris is a veteran live sound engineer. He mixes the thrice weekly radio broadcasts for the Grand Ole Opry.

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BY STEVE LA CERRA

PHOTOS BY EDWARD COLVER

# HERBIE HANCOCK IN SURROUND HERE ARE 5.1 REASONS TO SEE HERBIE HANCOCK LIVE

When you look back at Herbie Hancock's groundbreaking past, it doesn't come as a surprise that he decided to bring his latest electric tour out in surround sound. As a longtime member of the Hancock camp, engineer David Hampton was called upon to make this happen, along with David Mann, who is responsible for mixing the "traditional" stereo FOH aspect of Hancock's live show. In light of the fact that the tour is carrying limited production, Hampton had to solve some interesting gear-related problems along with the surround issues.

During the tour's preproduction stage, Hancock, musical director/keyboard player Darrel Diaz, and Hampton reviewed new material from Hancock's forthcoming CD as well songs from his extensive catalog, evaluating possible surround applications for the new set (Diaz and Hampton both worked on the new album). They also spent time with surround expert Tomlinson Holman researching surround sound. "When people hear 'surround," Hampton begins, "they're waiting to hear trains or jets moving back and forth across the speakers. And when you hear music that was recorded in stereo and has been remixed or re-purposed for surround, you're dealing with someone's surround interpretation of stereo source material. Herbie went for a much more subtle approach. We wanted to respect cues from his music that are familiar to his listeners, and deal only with what we knew we could handle effectively which started off as eight inputs (though we're considering more for the shows in November and December)."

As a result, the PA complement for Hancock's tour consisted of two separate systems running concurrently -the traditional FOH stereo system run by Mann and the surround system run by Hampton. Hampton carried a Digidesign ProControl and Edit Pack Surround Mixing Surface for the surround rig, and spec'd Meyer CQ-2's for the surround stacks. Mann's FOH console varied due to the fact that it was being supplied locally. Mann's system took traditional inputs from drums, bass, keyboards, DJ, and horns. Hampton took eight separate lines (one per musician) from the stage to his rig, including a direct signal from bassist Matthew Garrison, triggered samples from (drummer) Terry Lynn Carrington's percussion rig, a second microphone for trumpet player Wallace Roney, and a direct line from DJ Disc's turntable setup. Hancock and Diaz both played modified Korg KARMA keyboards with the main outs routed to FOH, and the auxiliary outputs patched to Hampton's system.

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# HERBIE HANCOCK IN SURROUND

Hampton's ProControl was connected via Ethernet to an Apple PowerBook Titanium running Pro Tools 5.1. The Titanium's PCM-CIA card slot was used to connect a Magma two-slot expansion chassis, which held the Pro Tools PCI cards and interfaced the Titanium with two Digidesign 888l24 interfaces. Audio outputs from the system were routed to the surround stacks — sometimes as many as six — placed around the venue, completing Hampton's rig.

Hampton cites the microphones used for Wallace Roney [whenever possible, Sony C800's] as an example of leaving as much control of the surround element to the musicians as possible. "We used two mics on Wallace's trumpet - one that went directly to the FOH console and one that came to the Pro Tools system for the surround effect. For some songs we used a 'fixed pan' setting. The trumpet had a primary position in the stereo field, as well as an accented position in the surround field. This allowed Wallace to use the surround element the way he felt: if he wanted to play straight ahead, he'd step in front of his main mic; if Wallace wanted to see what the hall could do, he'd step in front of the 'surround' mic. I had the surround mic assigned and panned to a basic, fixed location - for example, in my left side stacks. When he moved between the two mics, he'd control whether his playing was in front of you or to the side." Hancock refers to this type of mixing as "immersive mixing," a phrase he uses extensively in his presentations discussing surround.

"DJ Disc sent a direct signal to my system," Hampton continues, "allowing me to bring him out into the room. There are a lot of elements to scratching that make it musical or rhythmic, so, through the use plug-ins, I could accentuate certain frequencies in the scratches or ambient sounds he used on certain songs. In at least one case, a plug-in really helped us out with DJ Disc's sound. He has these vintage phono cartridges he's been using for many years. Anyone who knows DJing knows that the cartridges are like an instrument, like playing a guitar. Well, at one point they got left behind in another city and we were at the whim of whatever turntable and cartridge showed up at the next gig from a rental company. I was able to use an EQ plug-in to compensate for that."

#### THE POWER OF THE BOOK

In addition to the PowerBook Titanium used for running the Pro Tools surround rig, David carried four additional PowerBooks. "Not for redundancy," he explains. "We tried to do something different this time out. In the past, when Herbie did an electric tour, it always involved a lot of keyboards and racks full of modules, but we now have a lot of technology that didn't exist in years past. So we designed both keyboard rigs to work with virtual synths. Herbie used a Titanium and Darrel used an iBook 500 MHz (we just upgraded him to a Titanium). Both Herbie and Darrel used the Emagic EVP88 [software synthesizer] for their Rhodes sound. Herbie plays a Roland MK-80 onstage because he likes the clavinet sound and prefers the action of this keyboard. But for the entire tour, the sound was the EVP88. It's a smarter way for us to work. You have to re-task your system constantly, finding the most efficient way to make things work. Again, to keep it simple, we used Emagic MT4 MIDI interfaces. Darrel also worked very closely with the Emagic staff on prototype versions of their EMI 2I6 (two in, six out) USB audio interfaces, which we used for the virtual instrument outputs."

A fourth PowerBook was used to generate video images during the show. The fifth PowerBook, Hampton's personal Pismo, was used as a general back up machine, constantly being updated with new files from the other four machines in case one of them went down.

#### WATCH YOUR ASH

Hampton admits that some of the outdoor gigs were challenging due to the



weather, but the roughest one was "a gig right underneath Mount Etna, a day before it blew up. About five minutes after the gear was set up, it was covered with ash that was blowing around and settling. I had to come up with a method of dealing with the PowerBooks and ProControl being covered in ash. I found a Kinko's, bought clear laminate, and then used the laminate to make dust protectors for the gear. Once the show was over and we were on the bus, I blew all the gear out with canned air to get the ash out."

Another issue that came up was the size and shape of some of the venues they visited. "Gary Hirstus has been Herbie's live engineer for many years," Hampton reveals, "and has had extensive experience at many of the venues we were performing in. He and I worked together to determine the best possible location of the stacks for surround placement. A good example is an outdoor venue we did in France. It was in a very windy area, and it has bleacher seats, like a baseball stadium. In the back of the venue, the center area (where we might normally place the rear stacks) was used for lighting. So we used the center of the venue to create a cluster of rear points that were splayed out from the center toward the rear and sides."

Hampton says that they've "just begun to really explore the whole issue of surround in live performance. We learned some new things and have created some new questions as well. I think that the surround characteristic can be a new compositional tool for the musician/multimedia artist of the future."

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Take a bite out of time

# **Computer Shortcuts and Speedups**



We're all busy, and time is a precious commodity. That's why I cringe when I see someone digging through piles of folders to open a target file or doing repetitive keystrokes.

Chances are you invested in a computing system because it promised to save you time, and it probably has, especially if you've taken advantage of the rock-bottom prices on fast processors, huge hard drives, and copious RAM. But just as we supposedly use only 10% of our brainpower, most people use a relatively small percentage of their computer's power. Time spent learning the rest of your system's capabilities, and/or augmenting them, will pay back that investment many times over. So let's look at ways to make working with your computer more efficient.

QuicKeys. Born on the Mac but also available for Windows, this modest program from CE Software (<u>www.</u> <u>cesoft.com</u>) creates macros for repetitive keystrokes. For example, when playing MIDI drum tracks, my mostused quantization operation is quantizing to 16th notes with 50% strength. So I used QuicKeys to assign this operation to a single function key.

Layouts. Many programs let you store and recall window layouts. For example, a mixing layout for a hard disk recording program could show mostly faders and not individual track

waveforms. When editing, you might prefer a layout that makes the waveforms highly visible, but hides the faders. Layouts can usually be invoked by a definable keystroke. And, in Windows, don't forget the "tile windows" options (right-click on the Taskbar). This can save much time compared to re-sizing multiple windows.

Keyboard shortcuts. You'll often find these listed on a sheet within a program's manual or in a printable help file. The list may seem daunting, but you won't regret time spent learning shortcuts. As you can often trigger the keyboard commands with one hand, you can keep one hand on the mouse, while your other hand hits the appropriate keys.

To learn shortcuts, get a mouse pad with

a clear plastic cover (often sold as promotional items so a company can insert a calendar, or whatever). Put the list of shortcuts under the plastic.

**Toolbars.** If you use Windows, take advantage of toolbars to give one-click access to your most-used programs and files. For example, I created toolbars for audio programs, utilities, the drives in my computer, and sample libraries. To create a toolbar, right-click on the Taskbar or any existing Toolbar, then select Toolbars > New Toolbar. Then click on a folder, drive, or whatever you want to turn into a Toolbar. This will appear in the Taskbar; click on it and drag it down into the desktop, where you can place and resize it.

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FIGURE 1: The Send To option lets you choose a program to open a file.

Neaten up your desktop. I use the desktop to collect current or important files until they find a permanent home in an appropriate folder. However, that results in clutter, which is a particularly a drag with Windows if you have the desktop covered with toolbars. So create a folder on your desktop called Desktop. Drag all your desktop files into the folder and continue to place future desktop files into the same folder. This keeps current clutter out of the way, but your desktop files remain accessible with a double-click.

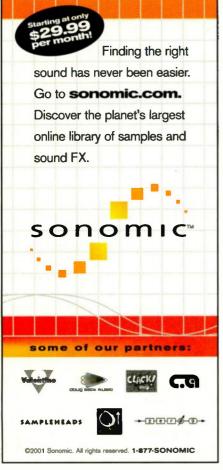
The update pre-emptive strike. If you buy or upgrade a program, *before* installing it, go to the manufacturer's Web site and check for patches, notes about installation issues, etc. This may save you hours of

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Hmm, now what to do with all those CDs?



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troubleshooting, frustration, and waiting on hold for tech support.

Shortcuts and aliases. When working on a project, create a shortcut (Windows) or alias (Mac) and drop it on your desktop so you're only a doubleclick away from starting work. When you're finished with the project, delete the shortcut. In fact, whenever you open too many folders to get where you need to go, it's time for a shortcut (or perhaps a re-assessment of how you manage data).

To take this one step further with the Mac, drag a file or program (or its alias) into the System Folder > Startup Folder, and the file will open automatically at startup. For Windows, drag the file, shortcut, or program into the Windows > Show Files > Start Menu > Programs > StartUp folder.

Start and Apple menus. Regarding the Start menu (or the Apple menu for pre-OS X Macs), how much time are you losing by chasing a bunch of cascading menus until you reach your final destination? Place shortcuts to your dozen or so most important programs directly in the Start folder, along with folders that contain other shortcuts. Arrange the hierarchy so that it's not necessary to drill down more than one level into the folders. In other words, when you open the folder, what you need is accessible. The same concept applies to the Apple Menu Items folder.

More Windows tips. Windows' Send To function lets you right-click on a file to direct it toward the destination of your choice. For example, you might want to send an audio file to an audio editing program, or to a folder that contains the files for a particular project. Choose the Send To destinations by dropping shortcuts into the Send To folder (Windows > Show Files > Send To). This is particularly handy when you've selected one program as the default for audio files, but may want to open up the file in other programs.

Fig. 1 shows a typical use of Send To. If I double-click on a WAV file, it defaults to opening in the Windows Media Player. But if I right-click it, the Send To menu provides the option of opening it in any of several digital audio programs (in this case Acid, Cool Edit, Sound Forge, Wavelab, or Windows Media Player). Media organization. If you don't want to go through the hassle of maintaining a database, a simpler approach is to number your media in some obvious way (*e.g.*, CDR001, DAT001, etc.). Create a word processor document that lists the number and a detailed description, including keywords. Use the word processor's Find function to either search on numbers to find what's on a given piece of media, or type in some key words to find the media that contains a certain project.

Templates. When you call up a New file, it's a blank slate, which is nice conceptually, but I prefer a file that already has certain instruments assigned, tracks named and pre-assigned to outputs, and so on. Set up your workspace exactly as you like, then save it as a template before you start recording. To avoid overwriting it in the future, upon opening the template, always remember to immediately Save As under a different file name. On the Mac, Get Info on the template file, and select the Stationary Pad check box. The Mac will automatically prompt you to save the template under a new name whenever you try to save it.

The Mighty Punctuator. To make sure that a file name pops to the top in a list of alphabetized file names, precede it with an exclamation point or "+" sign (Mac or Windows).

Backing up doesn't take time — it saves it. The ultimate time-saver is a consistent backup regimen. I'm still amazed at how few people pay proper attention to this; they've been lulled into a false sense of security by the extremely high reliability of today's media. But disaster will strike eventually, be it a mechanical malfunction, virus, natural disaster, or whatever. The time required to re-create everything will far exceed any time you invested in backing up.

Got any other cool tips? Send me an email, and maybe we can do a follow-up column in a future issue.

Craig Anderton is creative director for MusicPlayer.com and a performing/ recording musician. He has given seminars on technology and the arts in 37 states and IO countries, and plays guitar/electronics with the Cologne, Germany-based group Rei\$\$dorf Force.

# ADK Tribute to the Ladies of Nashville

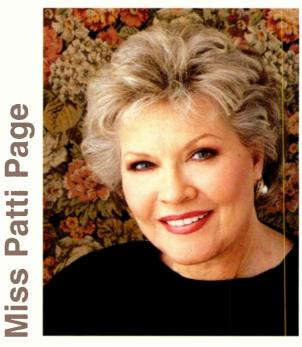
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#### Dr. Kooper's Norwegian Blues

# Norway Diary 2001

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It all started innocently enough, as an email. Some nice bloke from the UK wrote and asked if I'd like to play at a blues festival in Norway in the summer of 2001. Why, they could even afford to bring my *band* — and that was the clincher.

When people ask me to appear in the States, they usually don't offer enough money for me to bring my group. It became necessary to put together a strong solo show in order to go out there and perform in the new millennium. However, a solo performance shows off different skills than a band performance - you can't really close a solo show with the same bravado that you can with a killer band. So a chance to visit Norway with my local Boston aggregation, The Funky Faculty, seemed like a great idea. We were scheduled to play two separate nights, August 3rd and 4th, in a club that held 1,200 inebriated Norwegians. The wonderful soul singer Shemekia Copeland was to open for us.

It was our first road-trip as a band. After all, they're all teachers at the Berklee School of Music and don't get out often much less to Norway to play rock 'n' roll in a big, sweaty hall. We were to co-headline the Notodden Blues Festival. This takes place in a quiet little Woodstock-like village, at the foot of the mountains, three hours out of Oslo.

The festival provided us with three volunteer helpers. Anne organized things, Bengt was our driver, and Katrina lugged instruments and filled in the gaps. Now, I have to tell you about the phenomena of the Notodden volunteers. There were 650 of them. They came from all over Norway for the chance to help musicians, hear music, work gratis, and sleep in various hostels with 15 beds in a room. Without them, economics would have made the festival impossible.

Our first concert was Friday at midnight; Shemekia Copeland was an inspired choice to share the bill. She had the crowd in the palm of her hand and put on a great show. We came out and, I don't know what it was, but we couldn't reach the heights we'd reached in the past. The audience seemed to enjoy it, and we got the nod for an encore. As we came off after the encore, my lack of eyesight betrayed me, and I missed a monitor speaker directly in my path. I went face down in the wings with no way to break my fall. I'm told I was out cold for a few minutes, and was forced to go to the hospital. Anne came along to translate. I checked out okay.

Saturday, Shemekia was wowin' them again. We went out right on time and people were jammed in all over the joint. After a shaky start, the chemistry in the band began to coalesce. By the end of the second tune, we were humming on all twelve cylinders. It turned out to be the best set we ever played as a band. At this juncture I'd like to point out that a musician has no way of knowing what's going to happen when he or she goes out on stage. There's no barometer for predicting a good show. All this technology, and it's still anybody's guess in 2001.

Ed Murphy, the boss, invited us to a party he was throwing the next night for all the volunteers. I quickly asked if we could perform. "You'd actually play there?" he stammered. "Hell, yeah," I laughed, "What a great way to thank all these people who helped us out, worked for nothing, and slept on cots!" He said he would set it up. Needless to say, the boys in the band agreed to play this fun, gratis set.

We went onstage and it was great to play for these people. They had finished working a wacky week, were joyously partying, and really enjoyed the music as much as we enjoyed playing it for them. Back at the hotel, I packed my stuff, took one last bath in that giant tub, and couldn't fall asleep. We began our trek homeward with a three-hour bus ride to the Oslo airport. Our flight was overbooked. It was scheduled for 1:15 PM departure. However, we were delayed three hours while they changed a hydraulic something. Some days you eat the bear, some days the bear eats you. Anyway, we had left our hotel at 2 AM Boston time and I arrived home at 10:30 PM Boston time. Will I go back next year? Only if they invite me....

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#### Getting organized in the physical world

# Looks Good On Paper

'ROOM WA

JIM@GRAVITYMUSIC.COM



My own office is so streamlined that a couple of my clients have expressed awe and envy: "Gee, you're so digital, so 21st century, so paperless." (The paperless office is a mistenshrouded Avalon that all managers aspire to reach one day, I guess.) But I beg to differ. Even in a modern studio, where virtually everything we create is stored and transferred in some kind of digital format, there's a continual stream of old-school information. In the average studio (mine included), this information tends to congeal in large pools, where important info sinks beneath the surface and mysterious month-old scraps bubble up to confound you ("3/17 - Bob - 555-4756" now, who the heck was Bob?).

By keeping this stuff organized, you can be more productive and efficient, and not only have more time for making money, but also impress your clients with your ready grasp of the situation. So grab one of those stacks of dead tree on (or under) your desk and let's make a plan for dealing with it. There are really only three kinds of paper information: stuff you need to keep, stuff you need to act on, and stuff you should throw away.

#### STUFF YOU NEED TO KEEP

Anything associated with work in progress: Think notes, client memos, VO copy, track sheets, lead sheets, lyrics, faxes, purchase orders, etc. Hear me now, oh my brothers - if you throw it away, you'll need it next week. And letting it pile up in your in-box is a poor solution (I know, because that was my filing "system" for most of my career). I took a tip from the ad agencies and established a set of rotating "job jackets." Just get a dozen gusseted pocket folders at Office Universe, preferably the type with a little seethrough pocket on the front. Slip a label with the project name in the pocket. Now you have a place for everything associated with the job - no more digging through piles of paper, no more asking the client if they can re-send that fax.

Keep the job jacket open until you receive payment (it can be a big help if your customers have questions on billing). And when the job is finished, file the contents and recycle the jacket. I rarely have more than four or five projects open at a time, but it's big help even when you're only working on one, and invaluable when you're keeping ten or more balls in the air.

**Receipts:** You can file them by type if you want, but frankly, I don't bother. Most of the receipts you file are going to be for monthly fixed costs (which are easily recognizable if you need to refer to the file) and you're going to have to go through them all at tax time,



anyway. I just keep a large file folder in my desk drawer, and drop *everything* that might be deductible in there. My only nod to traditional filing methods is to mark them all with the date paid and a check number. This will be a handy reference if someone claims you forgot to pay them.

Invoicing info: Nothing tricky about this: just number your outgoing invoices sequentially, and keep them in a "Receivables" file until they're paid. It makes it easy to figure out who owes what, who's running late, and what your cash flow prospects are for the next 30 days. Even though small-biz accounting packages keep track of this info; I like having the paper copies as a backup.

A record of your time: This is the last thing a freelancer thinks of, and it probably should be the first. I'm not talking about a calendar, which details what you *hope* to do in a day. I mean a time sheet, which details what you *actually* did in a day.

Keeping a daily time sheet is one of the

best things you can do to increase your productivity and your bottom line. It prevents you from forgetting to bill for that little one-hour favor you did for a regular client. It acts as a silent manager, nagging you to stay productive and keeping you from wasting all day playing Minesweeper. It's your lifeline in a billing dispute and your friend in an IRS audit. Doctors do it, lawyers do it, advertising agencies do it, and you should, too. No fancy form is required. You can simply jot it down in your Day Runner if you choose. But however you decide to do it, you should start now.

#### ACT ON IT OR THROW IT AWAY

Even if you've only been in business for few months, you'll be amazed at the amount of mail you'll receive. It piles up quickly unless you remember this basic bit of conventional wisdom ---- try to handle a piece of paper only once.

When you go through a stack of paper, train yourself to make quick decisions about its value. Do you want to attend that DAW workshop? Well, don't leave the postcard on your desk and think about it. Right now, call the 800 number to RSVP, mark it on your calendar, and get rid it. If you leave it lying around, you'll not only increase the clutter in your life, you'll probably miss the workshop, too.

Anytime you pick up a piece of paper, decide now if you want to act on it. If it's important (like your *EQ* subscription renewal), why wait? Respond now and you only have to think about it once. If it's not important, lose it before it has a chance to obscure some other piece of information you actually want.

Now you have a nice, clean desk, you know where everything is, nothing gets lost, and things run smooth and easily all with a minimum of effort, and without drugs or tedious exercise. Pretty cool, huh?

By the way, "Guest Room Warrior" had its first birthday two months ago (I would have mentioned it sooner, but I think the memo to myself got lost in a pile of paper.) I want to thank *EQ*'s readers for reading, for all your mail and suggestions, and for giving me this great space to share things with you each month.

#### **BONZAI BEAT**

continued from page 38

the difference. I always liked the old big band recordings that he did, but that was long before I decided to become an engineer. Later, I really liked George Massenburg's work with Earth, Wind & Fire and others.

# Who do you respect and admire today?

All the guys who are able to enhance the music with their mixing.

# Is there anyone in the world you would like to record?

People with charisma. Part of the reason I'm working in this business is because I have the privilege to work with people who have outstanding talents be it an artist like Bono, or engineers and producers like George Massenburg and Ed Cherney.

# Do you know any interesting business tricks?

Always charge slightly less than your client would expect.

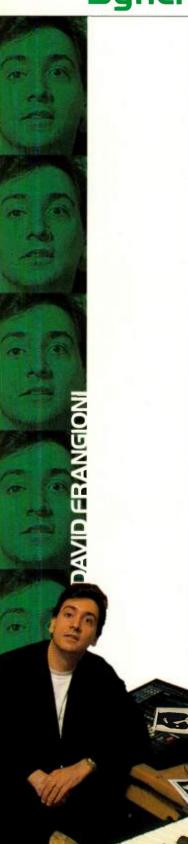
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**CIRCLE 47 ON INFO CARD** 

How to get that syncing feeling, part II



# Synchronizing in the Digital Age



In previous columns, we've discussed the importance of a good, solid clock in an alldigital (or nearly all-digital) setups. Although this is very important, there are other parts of the setup that require attention if your sync is going to work reliably and consistently.

The first step is to establish the "speed" master that serves as your master clock. The second step is to determine which device will be the "location" master — the machine that will provide the information necessary for all devices to know where they are on the timeline. Let's go back for a minute, before we go forward.

In the days of analog-only machines (huh?), the concept was the same as it is today, but the equipment and means of synchronizing were different. There was no MMC (MIDI Machine Control), word clock generator, or MTC (MIDI TimeCode). In their place, we used video blackburst (house sync) as the clock master and SMPTE timecode as the location master. Video blackburst is an extremely stable composite video signal that contains fields of black and runs at a selected frame rate (usually 29.97 non-drop for NTSC). Every SMPTE frame has 80 bits. The edge of the video frame is used to align precise boundaries of the signal and determine the proper speed. Each device would precisely travel so that each frame edge and all 80 bits were in the same place at the same time.

Most devices use SMPTE and frame boundaries to determine the speed and/or location of the master reference. Therefore, if an analog 24-track and a BetaSP deck were to be synchronized, one deck would need to be the master while the other was the slave. In the perfect world, each machine would resolve to video sync and the SMPTE from the master would feed the slave machine. If the slaves couldn't resolve to video sync, then there would be no need to use it at all, unless you decided to use it on the master. In this case, SMPTE timecode would have to be used as both the speed and location master for all slave devices. Why not just use SMPTE all of the time? Why bother with video at all?

Consistency and stability are the main reasons why.

SMPTE timecode is carried as a modulating analog audio signal that's subject to wow, flutter, and random variances in speed. Remember that even slight variations in speed will cause drift in synchronization. In the analog or digital world, a master clock device needs to have tighter, more solid stability than SMPTE can offer. It's a little better with digital since the speed will playback more consistently than on analog machines. Therefore, the video sync is used to stabilize the analog machines and the SMPTE timecode is used to start, stop, and locate the machines. That was then, this is now.

Although SMPTE timecode can be "striped" on an open analog tape track,

# REMEMBER THAT EVEN SLIGHT VARIATIONS IN SPEED WILL CAUSE DRIFT IN SYNCHRONIZATION.

there are other forms of SMPTE. One form is found embedded in machine control. The SMPTE is sent down the RS-422 line along with the transport commands. This is convenient in environments such as video postproduction suites. SMPTE can also be sent down a MIDI cable. When this is done, it's known as MIDI TimeCode (MTC). In this case, the SMPTE is transmitted as RS-232 MIDI serial data. One important aspect to note with this type of SMPTE is that it's only quarter-frame accurate due to the MTC spec. Granted, quarter-frame accuracy is

You can find the Studio Tech Web forum at

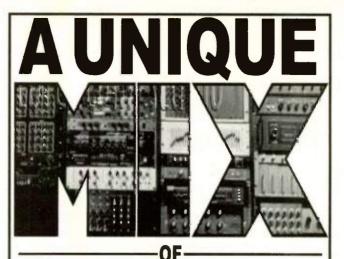
okay, but it's not as tight as true SMPTE.

Now we know what will work in an allanalog domain or postproduction suite. We also understand that there are two elements necessary in order to achieve proper synchronization. You can't have one without the other or nothing will work reliably. To recap, these two elements are speed (clock) and position (location). Now we're in an all-digital world. What are we to do?

First, determine your clock master. As we have discussed before, a dedicated word clock generator is usually the best way to go. It's also the easiest. This is the recommended setup for any system that has more than two or three devices. If your setup contains a MIDI sequencer (without digital audio) and a digital tape deck or two, then there are other options. For example, choose a master device (not the MIDI sequencer). Slave the MIDI sequencer to MTC generated by the master machine. Since the MIDI data in and out of the sequencer is no more accurate than the incoming MTC, there will be no problem with this type of sync.

Once your number of devices exceeds two or three, or if your MIDI sequencer contains digital audio, it's time for a dedicated clock. If a dedicated clock unit isn't the answer (or in the budget), then maybe an all-in-one device such as a MOTU Digital Timepiece (DTP) or a Micro-Lynx unit will work best for you. Either of these units can function as both the clock and positional reference master along with many other functions. All devices are slaves to the master controller; either software or hardware control is done through a central remote control. The DTP uses a software program called ClockWorks. The Lynx has a hardware remote that connects to its CPU. Not only can these remotes control all connected devices, but they can also take any or all devices "on- and offline."

This covers an introductory overview of what to look for and how to conceptualize the synchronization portion of your system. In future columns, we'll continue to discuss sync issues, digital clocking, and transferring/converting digital audio. Remember, in order to sync, you have to be in time!



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CIRCLE 11 ON INFO CARD



A new way to distribute music and the joys of free CD-burning software

# **EFF** and iTunes

The Electronic Frontier Foundation (EFF), an organization that deserves your support, has launched an elegant system to end-run lockstep litigators of online intellectual property. Designed to encourage songwriters to freely share some or all of their music, the Open Audio License (OAL) "allows artists to grant the public permission to copy, distribute, adapt, and publicly perform their works royal-ty-free as long as credit is given to the creator as the Original Author."

While this "super-distribution" method may seem like financial suicide to established career musicians, the benefits to the independent and the unknown songwriter are obvious. The new "O" designation added to audio file names will clearly state that the song is free to do with as the listener will. The RIAA and its unhappy bedfellows will not be able to touch an "O" song, ever.

The OAL provides a clause called: "Agree Not to Limit Others' Use," which states: "Any new work that in whole or in part contains or is derived from a work (or part thereof) made available under this license, must itself be licensed as a whole under the terms of this license," thus assuring the propagation of the standard. This is similar to the successful GPL (GNU Public License) naming system used by programmers for protecting software released into the public domain.

The FezGuys feel the OAL provides a serviceable, standardized way to let the world know you want some or all of your music to be freely traded. It removes any confusion over whether an audio file is okay to share, and also includes info for people to contact you and even [*gasp*] purchase or license your music. Simply stick the "O" designation in the credits info of your CD release and/or in the comment field of the ID3 tag on your MP3 files. The license and a simple tutorial are provided online at www.eff.org/IP/ Open licenses/eff\_oal.html.

#### ITUNES

Since computers purchased within the last couple of years have storage space in the 10 to 20 GB range, it's now likely you can fit your entire music collection as MP3s on your desktop. But once it's there, how do you organize it? If you're a Mac user, here's a solid way to do that. Last year, Apple Computers introduced its version of the desktop music file organizer for the Macintosh. Coyly marketed as a "cool burn," the iTunes package will rip, encode, inventory, play, burn, access streaming audio, support various MP3 portable players - basically manage your entire library of MP3-encoded songs - for free. It's included in the OS when you buy a new Mac or as a free download from www.apple.com/itunes. MacOS 9.0.4 (or later) or OS X 10.0.2 (or later) is required, but there are ways around this (see below). Though targeted to consumers, Macbased musicians and studio operators can use iTunes to perform any of the simpler functions ordinarily associated with your computer such as manipulating song orders, compiling songs on a CD, or saving mixes for listening outside of the studio environment.

We assume Mac users are pretty savvy and don't need a lot of hand holding, so we'll simply touch on ways that iTunes has impressed us. Installation is fast and painless. We did pause for a moment at the Terms of Service, noting that Apple iTunes software (ah, the paranoid nature of U.S. law) isn't "intended for use in the operation of nuclear facilities, life support machines, or other equipment...with which the failure of the software could lead to death, personal injury, or severe physical or environmental damage." And don't you dare send it to Cuba or Sudan, either. We accept the terms, comfortable with our ability to live within these guidelines.

On first running, iTunes politely asks for permission to set itself as the default streaming MP3 player, automatically connecting to the Internet and scanning the hard drive to load your MP3 library. These standard Mac preference edits (as well as others) can be changed at any time.

View options and library management tools within iTunes are intuitively configurable. There are multiple display modes: fullscreen, with the Visualization plug-in (see below); a resizable large window with a library browser (windows can be modified to display song name, date added, bit rate, sample rate, title, etc.); minimized window (playback controls only) or no window at all. Like your handy old multi-disc CD changer, the player can be set to continuous or random play.

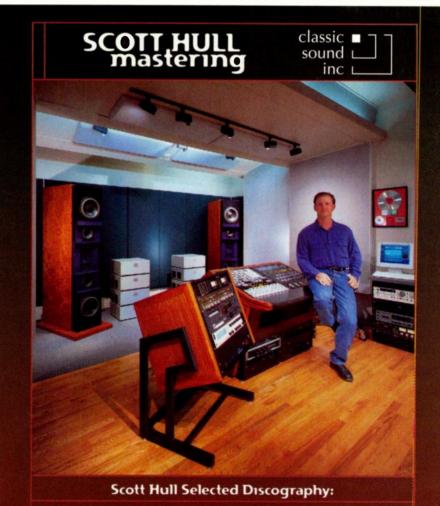
Users can set start/stop times and volume levels for individual songs within the iTunes system, independent of the actual encoded file on your hard drive. Volume adjustment provides the ability to have consistent playback levels between songs. It's helpful to not be leaping for the volume knob every three minutes. Start/stop time manipulation is useful (for example) to remove ten minutes of silence preceding a hidden track. For the Careful Archivist (you know who you are), ID3 tags are easy to edit and modify, even in batches (very handy for adjusting several disparate tracks' volume levels simultaneously and/or putting information in widely separated but related tracks). To perform the above-mentioned edits, use Command-I (which also features "previous" and "next" song buttons to scroll and edit without leaving the window). The iTunes search engine updates results while you type in the Search box, speeding up the process, We felt it would be nice to have an advanced library editing tool to remove files based on where they reside in your hard drive, making it easy to trim away duplicates. But searches can be performed on any View option and songs can be highlighted and deleted individually or in groups.

The iTunes ripper/encoder supports VBR encoding (see www.fezguys.com/ columns/057.shtml). Users can select individual tracks, set the ripper to play songs while importing, and even set the application to eject your disc when finished. The above-mentioned start/stop info and volume adjustments can be set prior to importing, which is helpful if you only require excerpts from within songs. The ripper will import to various MP3 settings or uncompressed audio (AIFF) files. iTunes supports burning audio files only (not data) and only to selected CD burners. For those with an older Mac OS or an unsupported CD-R rewritable drive, do a search for "iTunes" on www.versiontracker.com. There's a bunch of useful hacks and patches. Because much of the new Mac OS X is open

source, expect new and interesting free and shareware tools for the system.

#### WRAP-UP

After using iTunes a bit, we hopped on our Windows machine to see how it felt to play with MusicMatch, the popular MP3 manager (available free for Windows and Mac at <u>www.musicmatch.com</u>, or as a "Plus" product for about twenty bucks). User-interface inconsistencies were immediately evident. Clashing with Windows standards, this app filled us with frustration, even when attempting simple tasks such as resizing windows. In fact, the free player won't let you resize or minimize windows at all (except for the streaming window, which minimizes to view ad banners only). Compared to Musicmatch, iTunes doesn't look goofy or suffer overly from Creeping Featurism. To be fair, iTunes has its own little glitches, but overall it makes sense and works. The FezGuys can recommend iTunes for the Mac as a useful digital music organizer for your desktop. Did we mention the full-featured version is free?



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### **ROGER NICHOLS**

continued from page ISO

With digital audio tape, the tape can't be hand rocked. The tape has to be running at full speed before the bit stream can be decoded, and there's a delay before the audio is spit out of the converters. This makes it kind of hard to accurately select your edit point.

The 3M machines allowed you to edit in the video style, except that they use their own internal sync address codes and an edit controller that plugs in between the two machines. That is, you pick the edit point on the source machine, pick the edit point on the destination machine, and then hit the Preview button. The machines pre-roll, the destination machine plays, and, at the edit point, the destination machine switches to input. If you like the edit, press the Edit button and the destination machine goes into record at the edit point. If you need to trim the edit point, the machine being trimmed will play before the edit point and mute, or play nothing and then un-mute the audio at the edit point. With this method you can trim the edit points in one-millisecond increments until you get just what you want.

The Mitsubishi and Otari machines are synchronized with the remote control and work in a similar fashion. The Sony machines use DASH lock for synchronization, which allows one-millisecond accuracy. The PD machines and DASH machines also have an analog track where you can record a copy of whatever is important for cueing of the edit point. Since it's an analog track, you can scrub the audio to select the edit point. In scrub mode, the delay is taken into consideration for the calculation of that edit point.

#### AKAI, ADAT, DA-88

The term MDM (Modular Digital Multitrack) describes the new crop of small videotape-based digital audio multitrack machines that started showing up about 1989. The first of these machines was the Akai 12-track digital recorder. The Akai 12-track used 8mm videotape to record digital audio. Tracks were recorded in pairs because the chipset used for encoding and interleaving came from the newly introduced DAT machines. Six pairs of tracks were recorded on the 8mm videotape that ran at six times normal videotape speeds, allowing 20 minutes of recording on a two-hour tape. I recorded a couple of projects on them, but the error count got very high, very quickly. Also, because of the DAT method of recording tracks in pairs, whenever you punch in on track one, track two is taken off the tape and re-recorded. If there happens to be a playback error during this operation, the clicks will be recorded on the track that you're not even recording on. Nobody liked this very much, and the machine quickly fell out of favor.

Alesis introduced the ADAT eighttrack digital recorder shortly thereafter. The ADAT recorded eight tracks on VHS tape. The two-hour VHS tape only lasted 40 minutes because the tape and head speed were three times the normal video transport speed. ADATs sold like hotcakes. Every major studio and every project studio in the world jumped on the ADAT bandwagon. Multitrack digital recording for the masses was becoming a reality.

Not to be outdone, TASCAM introduced the DA-88, which was an eighttrack recorder based on 8mm videotape. To keep the recording time up around two hours, the DA-88 used narrower heads, closer track spacing, and higher data density. Until tape manufacturers caught up, the error rate on DA-88 machines was higher than ADATs, but the longer recording times were a big plus, especially when recording live concerts.

Because of the Sony/TASCAM relationship, Sony introduced a DA-88-compatible machine. When higher bit rates hit the scene, they dropped their machine and TASCAM produced the DA-78 and DA-98 24-bit machines. ADAT built a professional version of the ADAT called the M-20, as well as three new semi-pro models that recorded 20 bits, but because of the encoding method, 24-bit was beyond the ADAT capability. Studer licensed the ADAT format and built a professional machine like the M-20.

ADAT sales started falling off and Alesis acquired new owners during the summer of 2001. TASCAM is still producing DA-XX series machines, but tape-based machines seem to be winding down with the introduction of bigger, faster, cheaper hard disk-based systems. TASCAM, Alesis, iZ Technology, Fairlight, Fostex, and others have 24track hard disk-based recorders on the market. Mackie skipped over the tapebased machines, but has introduced a couple of 24-track hard disk recorders. We will cover these in the final installment next month.

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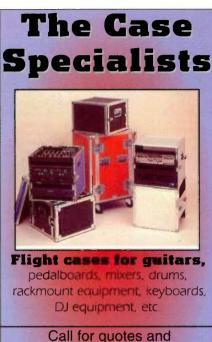


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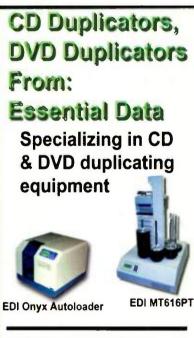


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### MAC OSX

▶ continued from page 62

customers all want to know when we'll release an OS X-compatible version of Pro Tools. We have a pretty strict policy that we've adopted over the years of not pre-announcing software features and release dates, and OS X is no exception. As usual, we're hard at work on many new features, and OS X is certainly an important part what we're working on. It's the future of the Macintosh platform, after all."

#### NICE THREADS

For the audio community, the biggest potential upside of OS X will be in improved distribution of resources. "Under OS X, you'll be able to run multiple audio apps with full multitasking," Brown says. "You can do two or more things at a time — batch process a CD-ROM library of sound effects while you continue to use the computer. Mac OS X 10.1 also provides the ability to do DVD encoding in the background."

According to Brown, expanded multiprocessor support will also improve audio performance. "Under OS 9, an application has to do extra work to take advantage of the second processor. Now, the system handles it without the developer having to do any work. The system efficiently targets resources. Developers can create threads and spawn off different tasks to different threads." OS X sees this and assigns the threads to the CPUs as needed.

#### **THE TRANSITION**

Apple OS X's direct support of multichannel audio, pro-level MIDI, and high-resolution, low latency I/O can only bode well for the audio community. But if the big picture of the move to OS X 10.1 is pretty rosy, there may still be some thorns during the transition.

All current Mac music applications run under OS 9. But while current versions of OS X *do* provide OS 9 support — in the form of Classic mode — this support doesn't extend to the type of hardware addressing that's needed to make music apps go. Steinberg's Nicholson reports that the problem is common among pro audio applications, stating that, "Under OS 9.x, applications running in 'Classic' mode under OS X will not be able to access proprietary audio hardware, which means that you're limited to the equivalent of the Sound Manager support in OS9.x — two-channel audio. MIDI won't work at all, and there may be a problem that timing in Classic mode in OS X may not be as precise as real OS X or real OS 9.x."

Apple's Brown concurs. "We developed Classic mode to maintain compatibility with legacy applications," he notes. "But Classic mode doesn't work well with PCI devices, hardware drivers, or any applications that use a lot of bandwidth, like audio. We don't encourage vendors to develop in Classic."

Likewise, many developers explicitly warn against using their software on OS X-equipped machines - even in Classic mode - until fully compliant OS X software is released. (Check with the support sites of all your apps for the latest information.) So while OS X 10.1 will be exciting - and soon the safe thing for most of us will be to sit tight and wait for the first few wrinkles to iron themselves out. As Digidesign's LeBolt concludes: "Supporting the new OS is a complex task, because we must fine tune the interaction of the CPU hardware, the OS, and our hardware to maximize performance. Some things have gone more smoothly than we expected, and others have been difficult, but we're working through the problems as they arise. We're not finished, so it's too early to make an absolute statement, but we expect excellent performance with our system and OS X."

So the bottom-line question remains: Will the move to OS X affect the Mac's standing in the audio community? David Nicholson of Steinberg, who provides software across both platforms, doesn't think so. "People seem to be either Mac people or PC types. I don't see people in the PC trenches saying, 'Hey, Apple has got OS X, let's sell the PC and get one of those Macintoshes.' Nor do we see Mac OS 9 users feeling a PC is suddenly a better option than their current computer running OS X. As long as the status quo remains between what you can do on the different platforms, where would be the impetus for a migration in either direction?" 

#### CAKEWALK SONAR XL > continued from page 96

mix editing is outstanding. You can superimpose envelopes for most automation parameters over the track data; the various parameters are color-coded, so you can view volume,

pan, and send level settings at the

same time without confusion. You can print your mix to disk, with all automation intact, in a number of formats including WAV, Windows Media Advanced Streaming, RealSystem G2, and MP3 (with an optional \$29 encoder — a 30-day trial ships with Sonar XL).

#### MIDI

If you're familiar with Cakewalk, you should find Sonar's MIDI features a breeze to work with. You get a full arsenal of well-developed tools and smooth working editors, including piano roll, event list, and notation. As you'd expect from a pro-level sequencer, you can edit notes and controller information graphically or input values manually. I especially like the way Sonar lets you jump from track to track within a single edit window.

#### CONCLUSION

In the real world, Sonar is technology that's used to study the ocean depths. The name is apt for this deep program. Sonar takes the modular concept that's become standard in digital audio sequencing and connects the pieces into an integrated whole. The more time you spend in the Track View window, the more you'll appreciate the program's sleek design. There are areas where it can be improved. of course. The various tools are scattered around the screen. For example, the grid and zoom tools are on the lower right, while most of the selection tools reside up top. Some of the windows, especially the console, seem grafted on from older software. And it would be nice to have the same right-click access to DSP audio processes such as Normalize as you have with destructive DX plug-ins.

But these are details. If you're looking for a comprehensive audio, looping, and MIDI program with prolevel mixing, low latency, and a super fast interface, look no farther.

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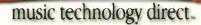


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> plug-ins such as TC MasterX and TC Voice Tools (sold separately). These powerful

plug-ins appear in Digital Performer's mixing board, just like regular native plug-ins, but they run on four powerful 56K DSP chips on the TC+PowerCore PCI card. It's like adding four G4 processors (equal to 2.8 gigahertz of extra processing power!) to your computer. Run 12 studio-quality TC plug-ins with no hit on your CPU power, and run other native plug-ins at the same time! TC+PowerCore is an open platform, so it will also run plug-ins from other respected 3rd party developers, too (details TBA).

TCWORKS

77-4

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#### PD or not PD?



# Format Overload, Part III



Continuing on with our format coverage, we'll start with Mitsubishi's foray into the future of digital audio. In 1983, I got to use the first Mitsubishi X-800 32-track, one-inch digital machine, and their X-80 reel-to-reel two-track digital recorder. The first project to be recorded on the X-800 was John Denver's *One World* [BMG/RCA, 1986] featuring Bob Marley's band The Wailers, recorded at Criteria Recording Studios in Miami. We mixed to the X-80 two-track and mastered with Bob Ludwig at Masterdisk in New York.

The second-generation digital machines had ten times better error correction, and all of the tracks were on the same head to avoid the error-prone physical adjustments that needed to be done with the 3M machines. Mitsubishi later improved and shrunk the 32track machine with the X-850 and, later, the X-880 32-track machines. Otari licensed the PD (ProDigi) format from Mitsubishi and produced the D-900 machine, which would record and play Mitsubishi 32-track tapes.

The original X-80 two-track used a sample rate of 50.4 kHz and 1/4-inch tape. The sample rate was later changed to 48 kHz as the emerging standard for professional sample rates. George Duke and I had the only two X-80's for a while, and some of our early tapes were done at 50.4 kHz. Mitsubishi later replaced the X-80 with the X-86, and then the X-86-HS. The HS version was capable of recording at 88.2 kHz and 96 kHz. The Rikki Lee Jones *Flying Cowboys* CD from 1989 was recorded on the X-850 and mixed to the X-86-HS at 96 kHz. There was an option that allowed the playback of incompatible X-80 tapes on an X-86 or X-86-HS.

Nashville was the Mitsubishi capital of the world, with the highest population of 32-track machines on the planet. The record companies and studios opted to standardize with one format so that projects could easily migrate from one studio to another. If you wanted to be a competitive studio in Nashville, you had to have an SSL console and a PD format (Mitsubishi or Otari) digital 32-track.

SONY, NO BALONEY Sony introduced the DASH (Digital Audio Stationary Head) format machine in 1984. The DASH format PCM-3324 was 24 digital audio tracks on half-inch tape. I worked on the first DASH session at A&R studios for the *Cotton Club* soundtrack [Geffen Goldline, 1985]. DASH machines started popping up like wild mushrooms — a pretty stable machine with a 50% savings on tape cost (half-inch instead of one-inch tape).

Sony owns most of TASCAM, so it was no surprise that TASCAM jumped on the DASH format bandwagon, introducing a low cost (\$90,000) version of the 24-track DASH machine. The TASCAM machine didn't share enough of the market, and they finally discontinued the machine.

In 1989, Sony delivered the PCM-3348 DASH machine with 48 tracks of digital audio, still on half-inch tape. It turns out that the DASH format had always left space on the tape for 48 tracks, and they left half of the tape blank for the 24-track version. A 24-track tape will play on a 48-track machine, and the first 24 tracks of a 48-track tape will play on a 24track machine.

Studer licensed the DASH format from Sony and built their own 48-track DASH machine. Lots of studios bought Studer 48track machines, but most of the ones who did already owned a Sony PCM-3348.

Sony also built a two-track DASH machine using 1/4-inch tape, the PCM-3402. Sample rates were 44.1 kHz and 48 kHz.

#### DASH AND PD TODAY

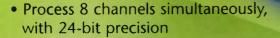
Sony has introduced the next level of DASH machine, the PCM-3348-HR. The HR stores 24-bit data for each of the 48 tracks. The machine still uses half-inch tape and will play and record any previous DASH format tape. But, in 24-bit mode, the tape travels at 45 ips instead of 30 ips.

#### EDITING DIGITAL AUDIO TAPE

Editing digital audio was an experience all its own. With analog tape, you could rock the tape back and forth over the heads slowly and hear the audio. This made it easy to find the beginning of a kick drum or snare drum hit.

continued on page I34

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