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Ever wanted to design your own loudspeaker? Many audiophiles do. Last November, Corey Greenberg was one of the judges at the A&$S Loudspeakers DIY Speaker Sound-Off. He writes about his experience in our March issue, while I submit the winner and runner-up to Stereophile's standard set of measurements. Also in March, CG and Jack English report on the sound of Scientific Fidelity's stylish Tesla loudspeaker, Martin Collom's lists to CD-R—recordable CD—with surprising results, RH listens to amplifiers from Parasound and McCormack and a digital processor from Kinergetics, Robert Deutsch to a preamplifier from Coda, JE to a Kinergetics subwoofer system to give his Martin-Logan CLSes true low-bass extension, and I report on the sound of Audio Research's Classic 120 monoblocks.

Next, three corrections. In our November 1991 issue, we gave the wrong telephone number for Swan's Speaker Systems (Canada). The correct number is (902) 569-5520. In December, CG mentioned that Theta's Data CD transport was based on a Pioneer LV player. It is actually based on a Philips CD400 LV player. And in November, I mistakenly referred to Madrigal Audio Laboratories as being the US importer of Accu- phase products. There is currently no US Accu-phase distributor.

—John Atkinson

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"Have you seen Elvis?"

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—John Lennon

"Reality is nothing but a collective hunch."
—Lily Tomlin

The thing pictured above—a pozyut? a potrzebie?—puzzled me immensely when I first saw it in MAD magazine in the early '60s. It is, of course, a trick, the two-dimensional drawing giving conflicting clues to the poor brain trying to visualize it as a three-dimensional solid object. But I used it to open this discussion because, far from being fully understood, the more there is known about human perception, the more it seems there is to know. Sir Francis Crick, who, with James Watson, discovered the double-helical nature of the DNA molecule, referred to perception in 1979 as "science's greatest mystery." The retina of the eye does not behave like photographic film or a video camera tube or CCD; the ears are not microphones. After three decades of research into Artificial Intelligence, there is still no way to make a microphone aware that it hears, a video camera that it sees.1 In his 1991 book, Edmund Blair Bolles summarized this mystery as:

• "Our basic scientific ideas cannot grasp something fundamental to daily living.
• "The world that physicists describe is unlike the sensory one we perceive.
• "The world we feel is so surely out there seems to depend on an interior construction of our own."

Bolles's mention of the brain making use of "interior constructions" echoes something Meridian's Bob Stuart recently mentioned2 and to which I referred in the introduction to my loudspeaker reviews last month. When someone listens to a recording on a stereo system, the reality is that two complex audio-bandwidth pressure waves emanate from the loudspeakers. The impression the listener gets that instruments and voices are hanging in space between and behind the loudspeakers is an illusion, the brain deciding

1 For further reading on awareness and Artificial Intelligence, see the January 1990 issue of Scientific American, as well as the second edition of David Berlinski's Black Mischief (Harcourt Bracce Jovanovich, 1988). (You also might want to dip into Douglas Hofstadter's Godel, Escher, Bach: An Eternal Golden Braid, Vintage Books, 1979.)


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that that must have been what would have been heard at the original event. In Bob Stuart's words, the brain creates "acoustic models" as a result of the acoustic information reaching the ears, models that are totally subjective. You do this automatically—it's what you do when your ears pick up real sounds. It doesn't strike you as incongruous, therefore, that the illusion of the sounds and spatial aspects of a symphony orchestra, for example, can be reproduced by a pair of speakers in your own room. Yet there is no measurement that can be performed on the two channels of information to reveal that they represent one or all of the instruments of an orchestra. Routine review measurements examine changes in the voltage or pressure signals in just one of the information channels at a time, yet the defects of recording and reproduction systems affect not just one of those channels but both. And the audible effect of those defects is not heard as their direct measurable effect on the signals but as changes in the perceived character of those oh-so-fragile acoustic models.

System distortions that may be thought inconsequential compared with the total sound level can become significant when referenced to the clues, often very low in level, that allow the listener to create any particular acoustic model. Similarly, a large measurable difference may be inconsequential if it doesn't change the perception of that acoustic model.

While we can only measure physical differences, we have almost no idea of how changes in those measurements alter the subjective map created by our perceptive processes. Tony Rothman, in A Physicist on Madison Avenue, 4examined the fact that measuring the spectra of flutes does not reveal the subjective differences that can be perceived between different instruments. In fact, Mr. Rothman declares that the conventional wisdom that the timbral differences between different types of instruments lies in the spectra of their harmonics is wrong. Certainly a correlation can be drawn between the fact that their sounds are different and that their harmonic spectra recorded in an anechoic chamber are different. Rothman states, however, that "the spectra of a note on the oboe sampled at two different points in an auditorium differ more than the same note played on an oboe and a trumpet." Yet the subjective difference between "oboe-ness" and "trumpet-ness"—the identities of their acoustic models, if you will—is vast.

"The map is not the territory," we are all taught, yet when it comes to perception, the subjective map is the territory. It is all the evidence concerning the nature of reality we have to go on. (When that map no longer correlates with reality with any degree of fidelity, we are insane or hallucinating.) To be able to form that subjective map's acoustic or visual models is not trivial, depending as it does on experience and education. A February 1985 BBC TV "Horizon" program written by Hilary Lawson (broadcast in the US as one of the "Nova" series on PBS) examined how "seeing" and "observation" are not the same. Observation requires of the observer a considerable degree of interpretation based on expectations and already-formed models and structures. The English language even distinguishes between "listening" and merely "hearing" by the presence or absence of "awareness." In Ms. Lawson's words: "What we see is governed by what we already know is there."

Without sufficient information at your brain's fingertips for the map to be formed, it's hard to make sense of what you hear. I had firsthand experience of this when I was 14. I went to live in Paris for a few weeks to improve my command of French. Upon arriving, however, I was horrified to learn that despite my theoretical knowledge and the fact that I could read written French, I couldn't understand a word anyone was saying. It was impossible to detect the starts or ends of words; all I heard was a continuous string of mellifluous sound that had about as much meaning for me as birdsong. Only after a week or so did I start to comprehend what I heard, meaning gradually imposing itself on disordered noise. Similarly, the first time I heard the Vaughan Williams "London" Symphony, it was a confusing experience—the work sounded like an apparently arbitrary collection of meaningless musical noises. 5 The second time I listened to the work, it began to come into focus, an evocative fragment of a folk tune here, a previously used phrase there. Eventually the work, with all its implications and richness, became familiar and well-loved.

When CD was introduced nearly 10 years ago, many audiophiles declared it to sound "perfect."

---

4 Princeton University Press, 1991. Tony Rothman quotes flautist Robert Dick, examining the fact that the best flutes are indistinguishable to the 99th percentile: "But art takes place in the remaining 1%: Just as in high-end audio!

5 I mention this work in particular because, to my surprise, I found it much less accessible than Mahler's almost contemporaneous Das Lied von der Erde.
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And perfect it indeed sounded to them: When you are presented with something completely outside of your previous experience, you simply do not hear anything wrong. The wrongness doesn't fit into your map, so is ignored. Only after familiarity breeds awareness do you both hear what is wrong and develop a vocabulary to describe it.

To judge the quality of a hi-fi component, therefore, involves assessing the quality of the acoustic models it enables the listener to create. Too often, however, by focusing on the minutiae of those models—where and how well defined they are in space, how accurate is the midrange tonality, how much bass they have, how high the highs—audiophiles forget to examine the bigger picture: does the sound convey the musical meaning? Is it an essential rule of thumb when judging hi-fi equipment that the better component is one that lets you get into the music more easily, that opens your ears to new music, and not the one that meets arbitrary standards of audiophile excellence.

This essay is veering dangerously near the semantic swamp of musicality vs euphony vs accuracy. I'll raise your blood pressures, therefore, by disinterring Ivor Tiefenbrun's decade-old statement that bad hi-fi components make it harder for listeners to follow the tune, and good components make it easier for them to hum along with the tune? Surely a "tune" is an abstract concept, you ask, its very lack of physical reality implying an immunity to the slings and arrows of outrageous hi-fi components. However, rather than the subject of the debate being something as well-defined as a "tune," it concerns the perception of "pitch," something very different.

Many people confuse pitch with frequency, regarding the two terms as interchangeable. Frequency is an objective property: it is both measurable and one-dimensional, in that it represents the number of soundwave crests passing a certain point every second. Pitch is wholly subjective, however. Not only does its perception differ from individual to individual—how many people do you know who are either "tone deaf" or who have "perfect pitch"?—it is multidimensional, frequency being only one of the physical parameters affecting its perceived value.

It is related non-linearly to loudness, for example. Play a 440Hz sinewave through your hi-fi system at a moderate level; you will hear a note with the pitch accepted as that of the note A below middle C. Increase the volume, however, and above a certain threshold (you may need headphones to get sufficient level) the pitch will droop. The frequency of the note won't have changed, but its pitch will have gone appreciably flat! (Before the advent of visual tuning machines, many rock guitarists would play woefully out of tune: standing in the strong soundfield given out by their stack, they would hear themselves as flat. They would therefore tune sharp of concert pitch, something noticeable to everyone else in a less intense soundfield.)

Listen to someone talking? You will notice that the pitch of their voice changes constantly, there being small up- and down inflections that underline the meanings of the words. Now listen to a speech recording on poor loudspeakers. You will find that those natural pitch inflections are diminished, perhaps even absent. The voice acquires a more monotonous quality, its naturally varied formant structure being corrupted by drive-unit and cabinet resonances that pull the pitches of the recorded voice toward their own preferred frequencies.

When a Linn devotee asks you to "hum along with the tune," therefore, he is neither suggesting that a specific tune can be turned into another by a less-than-ideal piece of hi-fi equipment nor that hi-fi components are capable of changing the frequencies of the signals they process. Instead he is asking you to project your map of perceived pitches back on to reality, so that you can compare the fit. The places where it doesn't correlate with the absolute sound will be thrown into sharp relief. As Tony Gregory put it in The Absolute Sound, "Humming along with the tune is a straightforward attempt to get people to relate to reproduced music as music, in terms of one of its most basic characteristics, and to evaluate it that way."

Sounds natural. Doesn't it?

6 "The problem with focusing on... peripheral qualities of reproduced music is that one easily forgets to keep track of whether the sound remains faithful to the most fundamental qualities of music, like the tune, or even the beat."—Anthony M. Gregory of Audiophile Systems, The Absolute Sound, Issue 32, December 1983, pp.9-11.


8 For a full discussion of the subjective nature of pitch perception, see Diana Deutsch's article (which includes a disc of examples) in the September 1983 issue of the Journal of the AES.

9 I refer to a speaker of an Indo-European language such as English. In theory, speakers of Japanese emphasize their meaning by changing the word endings or by adding special particles, not by pitch inflection.
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Letters

We regret that resources do not permit us to reply individually to letters, particularly those requesting advice about particular equipment purchases. Were we to do this, a significant serice charge would have to be assessed—and we don't have time to do it anyway! Although all letters are read and noted, only those of general interest are selected for publication. Please note, however, that published letters are subject to editing, particularly if they address more than one topic.

Don't forget the original
Editor:
In December's "Letters," Mr. Quint suggested that "[Corey Greenberg] may be defining a new archetype—the Audio Pig." In all fairness, let's not forget the pioneering efforts of Sam Tellig.

Rusty Chest
Nashville, TN

Bravos...
Editor:
In appreciation: Bravo, Stereophile.

Quite often, good things are taken for granted. Here's a note of deepest thanks to the Stereophile staff. Every month I eagerly await the next issue. Little by little I have tweaked my system without making major component changes. Robert Deutsch's "Non-Tweaker's Guide to Tweeks" (Vol.13 No.12) was really a revelation. Sam Tellig's and Dick Olsher's tastes seem close to mine. Welcome aboard, Corey. Audio nirvana can be glimpsed, if not attained, on a budget. Most important, it's fun and rewarding. Take a bow, gentlemen. Bravo!!!

R. A. Cypher
Dobbs Ferry, NY

... & brickbats
Editor:
Well, I hope you are all ashamed of yourselves for your nasty cracks about that nice Mr. G. K. Jung and his GinS loudspeakers. People who believe in green paint and Armor All shouldn't be so quick to ridicule someone else's new ideas. [See August 1991, pp.83–85, and October 1991, p.257.—Ed.]

When the Gin Sound Company prospers (as it should, with such an earnest, good-hearted, and humble man at the helm), and when he and his country (with their $850,000,000 of direct investment in the US) buy up Hales and Thiel and Avalon and God knows who else, in order to learn from these highly respected professional companies, and start putting tuba horns on those speakers, then you'll rue the day.

And when the high end goes into the toilet and Stereophile goes belly up, and the only job that clever Corey Greenberg can find is flacking for the Gin Sound Megacorporation, then, then, THEN you'll know the truth: bad manners never pay.

Matthew Chanoff
Washington, DC

Accuracy vs musicality
Editor:
I really appreciate your periodic "As Reviewers See It" section ["As We See It," December 1991]. The disagreements and diversity of views are a mark of expertise and intelligence, in my view. The section on "Accuracy vs Musicality" in December particularly caught my attention. I have some thoughts about what I will call the "Car Radio Paradox" raised by Arnis Balgalvis (p.27): Goosebump elicitation (p.22) is the sine qua non of a good sound system, and car radios pass this test. Why not sell our expensive equipment and put car radios in our living rooms? Two distinctions help.

First, we may distinguish between the music (ie, form, harmony, rhythm, etc.) and the sound (ie, sound of the instruments and acoustic space). While we ordinarily hear music as a Gestalt of musical content and sound, we can also attend and respond more narrowly to one aspect or another. At one moment, we may be awed by the
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power of a Beethoven sonata; at other, we may luxuriate in the sonority of the Bösendorfer the pianist is playing. Analogously, in viewing a Renoir, we may be captured first by the composition, then dazzled by the brilliant reds or soothed by the pastels. Our capacity to shift attention between music and sound is crucial to the Car Radio Paradox.

Second, distinguishing among listeners' orientations and preferences is also helpful. Two extremes can be defined: The pure music lover could delight in playing beat-up old records on a 1950s console hi-fi, oblivious to the evolution of stereo equipment, uninterested in technology. The pure audiophile could spend tens of thousands on equipment, own a handful of "demonstration" CDs to impress friends, having little interest in music. Although we may tilt toward one end of the spectrum or the other, most of us are hybrids, having a love for music and a keen interest in sound.

The Car Radio Paradox is resolved by our ability to ignore the dimension of sound, the sensory aspect of the music, and to focus almost exclusively on the other, musical, dimensions. Apparently, we are all able to shift into the pure music-lover mode, at least in the car. Perhaps this mode comes most easily to those blessed with a capacity for rich auditory imagery; apparently, Mozart needed no sensory input whatsoever to hear a symphony. Those of us less gifted need at least a car radio (perhaps embellished with a trance-like capacity to fill in the meager sound with imagery from memory).

What is the point of accuracy (and high-end equipment)? In my view, the quest for accuracy as an end in itself is misguided, at best a peculiar hobby. It is, of course, a peculiar hobby that all readers of Stereophile participate in to some degree. Indulging in this hobby is a variant of the pure audiophile mode. Music is incidental; the sound of the system becomes the obsession (i.e., comparison of the sound that emanates from the speakers with the sound of some (elusive) external criterion). In theory, one with absolutely no interest in music could diligently pursue this hobby. Equipment reviewers of necessity become caught up in this non-musical pursuit (until the music captures their attention); at least they have an excuse for it. To state the obvious, we need the accuracy not for its own sake, but to allow us the joy of those moments when we delight in the sound of the instruments. I use my car radio, but I'd hate to contemplate a life without any opportunity to hear the sound of Jack DeJohnette's cymbals!

Jon G. Allen
Topeka, KS

PASSIVE SEMANTICS
Editor:
My audiophile interest and activity date back to the time when a cactus thorn was the high-end stylus of choice, ca 1938. This predates the pre-amplifier by approximately ten years. In its first embodiment, a preamp was just that: a self-powered extra stage of amplification between the phono cartridge and whatever amplifier was being used. This was made necessary by the very low voltage output of GE's new variable reluctance cartridge as it began to replace the crystal devices we had previously been using; no switches, no controls whatsoever.

Unfortunately my formal training in English goes back even farther so I don't know if the term is a mixed metaphor, hyperbole, a split infinitive, or what? But one thing's for sure. Corey Greenberg's device ain't a preamp.

Charles N. Menz
Troy, NY

BUFFERS & CONTROL UNITS
Editor:
May I commend you for Corey Greenberg's article in the November 1991 issue? Great!

It was most interesting to me, for I have been using a buffered "passive preamp" for the last couple of years. It seemed an obvious thing to play with a high-impedance input and a low-impedance output design, and I am most satisfied.

I would like to try the Greenberg design, but the problem arises if one wants to purchase only a few pieces of BUF-03AJ, and the question of a suitable pot causes lots of heartaches.

I used a "Noble" pot (dual 100k), for I was able to obtain a few from a cooperative OEM. The Alps pots were available to my specification in lots of a few hundred only, so I had to forgo them. I later got a Penny & Giles dual rotary pot and, while expensive, it is great. The Noble and Alps are carbon, while the Penny & Giles is conductive plastic. Nevertheless, the carbon pots are quiet, and they do track beautifully.

As for the buffer, I tried the National LH0002, but finally adopted a circuit developed by Walt Jung, using discrete components, and I have enclosed a circuit of that buffer. As the transistors are specced at an "ft" of 300MHz, the slew is remarkably fast. I matched the pairs (Q1 & Q2.
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and Q3&Q4) for “hfe” at a number of currents within the spec of up to 300mA. Mr. Jung said he just included the 10 ohm resistors as a precaution. As the input bases reflect the emitter-follower impedance, the input does not load the pot. The output is capable of driving any interconnect I have run across. In my humble opinion, the sound is great. L. B. DALZELL
El Cajon, CA

BUFFERS & ANALOG DEVICES
Editor:
I read with great interest Corey Greenberg’s article on Passive Preamp Design. It was partly because we are the proud manufacturer of the BUF-03 buffer amplifier chip that was mentioned, but mostly because I am, as many of us at Analog Devices are (yes, PMI is a division of Analog Devices, Inc.), audio enthusiasts, as evidenced by our company’s line of high-performance and professional audio IC products. From a sonic quality perspective, there is not one here who disagrees with Corey’s observation of how clean the BUF-03 amplifier sounds. Furthermore, I am in total agreement that, as power amplifiers are placed farther and farther away from the preamps, the preamps will have a harder time driving long cables without losing high-end fidelity.

However, one point in the article on which I am compelled to comment is the suggested supply voltages of ±18V that power the BUF-03. We at Analog Devices/PMI do not recommend continuously operating the BUF-03’s supply at ±18V, which is clearly specified in the data sheet as the device’s absolute maximum rating. It is advisable to roll the supply voltages back to the recommended nominal ±15V. Doing so will not degrade the sound quality or the performance of the buffer. Besides, most power amplifiers peak out at line inputs of about 2V RMS [around 6V p-p—Ed.] anyway. The BUF-03 can easily handle more than three times this level of signal while operating at ±15V, so headroom should not be an issue.

A more important reason for rolling the supply voltages back is to reduce the amplifier’s heat dissipation to a level that it was designed for—and therefore preserve its operating reliability. As Corey Greenberg had suggested, the BUF-03 is internally biased for class-A operation. It was designed to operate on relatively high stage current in order to get gobs of slew rate and bandwidth while keeping distortion low. As such, it runs hot to the touch even at the nominal ±15V.

Still another reason relating to the reliability is that by setting the power supply at the rated limit of ±18V, it does not allow for any supply-voltage tolerance. Most supplies can vary ±5% due to line-voltage variations, resistor tolerances, and load regulation changes, etc. This means there is a good chance the total supply’s absolute maximum rating can be exceeded by 1.8V. Doing so can degrade the long-term reliability of the amplifier. In the case of the BUF-03, it is critical, not just because of the possibility of internal junction-voltage breakdown; more importantly, the additional power dissipation can heat the chip temperature beyond the maximum allowable limit, potentially destroying the device.

A quick calculation shows the BUF-03 must dissipate some 0.9W at ±18V supply at a worst-case supply current of 25mA. Unless the heatsink has a thermal resistance better than 100°C/W, and the construction technique is nothing short of perfect, the chip’s internal temperature rise will hover around its maximum allowable junction temperature of 175°C. Thus the design allows no safety margin for temperature rise from room ambient or equipment enclosure. Worse yet, it leaves no reserve for additional power dissipation for driving the cable capacitance—which is not insignificant with a long line.
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For these reasons it is advisable that the power-supply voltages be reduced to ±15V. This can be accomplished by changing the power-supply scaling resistors R2 and R4 from 12.9k to 10.5k (fig.1 schematic in article). Even with this modification, it is still a good idea to heatsink (better than 30°C/W thermal resistance) the device as Corey suggested. Doing so assures ample reserve for driving any power amplifier, and many years of listening pleasure.  

JAMES WONG  
Applications Engineering Manager  
PMI Division, Analog Devices, Inc.

BUFFERS & POWER SUPPLIES

Editor:
Corey Greenberg's "buffered passive" preamp (Stereophile, November 1991) is a worthwhile project for the audio do-it-yourselfer in search of a high-performance, no-frills preamp design. The comments below are meant constructively, to maximize the potential long-term rewards for those audio hobbyists considering the project.

To those commenting on my ±12-±18V power-supply circuit and the use with the BUF-03 buffer IC, some remarks may be helpful, and are noted below. Readers are advised that I have no commercial interest with this circuit design. Technical questions on Linear Technology ICs can be directed to Rich Markell at (408) 432-1900 (my co-designer of the original circuit while at LTC).

The use of an apparently overdesigned transformer has benefits other than just sheer design conservatism (see the comments within Gary Galo's article in The Audio Amateur, 4/90, pp.47-48). The original prototype transformer that I used for the design was a Plitron (formerly ILP) PN 4A013, purchased from Active electronics for about $40. Later on, variants of this supply have been built successfully with the abundant 20/20VAC at 5A toroids available from various surplus houses (Radio Fair, etc.). These can be had for about $10, but their use will require more careful heatsinking of the IC regulators...you should understand these factors before using one of these higher-output transformers. Note that the 4A013 transformer (or equivalent) will allow a ±15V supply to operate down to less than 110VAC input before dropout (when loaded with about 100mADC).

A CAVEAT ON USING THE BUF-03 WITH HIGH SUPPLIES: Operation of this IC at ±18V may not be the best for long-term reliability, as it will dissipate excessive heat (even with a heatsink). Also, ±18V is also right at the maximum specification for the IC. Dropping the voltages to ±15V (with R2 & R4 = 10.5k as per the TAA schematic) will be more conservative, and heatsinking can still be retained at these voltages. Hopefully, these steps will allow users to get the most from this useful circuit.

WALT JUNG

Regarding Corey's decision to run the BUF-03 chips at their maximum rated supply voltages is one of those things that is a good idea if it works, a bad idea if it doesn't. In his AMP-01 preamplifier design that I commissioned from electronics wiz Ben Duncan and that appeared in the UK magazine Hi-Fi News & Record Review in its May through November 1984 issues, the BUF-03s ran very hot even with what might be thought adequate heatsinking, but sounded superb on what I understood were ±18V voltage rails. My thanks to James Wong and Walt Jung for their sage advice— reducing the rails to ±15V will certainly buy much peace of mind.

A number of readers have expressed puzzlement at the numbers included within the triangular emblem representing the BUF-03 in fig.2 of Corey's article on p.101 of the November issue. These are the numbers of the pins sticking out from the base of the BUF-03's metal can. Looking up at the base of the can, the pins are numbered consecutively from the one to the left of the metal tab, which is "1," to the one coincident with the tab, which is "8."

Turning to transformers: I remember an amplifier designer of my acquaintance pondering whether there was a limit to the improvement to be gained by substituting beefier and beefier power supplies for one of his preamplifiers. He built a number of power supplies, each using a larger transformer than the last. With each increase in size, careful listening revealed that the sound was that slight bit better. Ultimately he built a power supply with the same transformer as his largest power amplifier. Sure enough, the sound was better still.

According to Clarke Greene, a member of The Audiophile Network computer bulletin board, Welbome Labs offers a power-supply kit (the PS-1) very similar to the one Corey used in his buffered volume control. It features Linear Technology LT1085CT/LT1033CT voltage regulators, these low-dropout, high-efficiency devices recommended for audio applications, but a smaller VA-rated transformer. Welbome Labs can be contacted at 6836 South University Blvd. #70, Littleton, CO 80123. (818) 782-1766 (voice), (818) 780-6260 (Fax).

1 The Audiophile Network, 14155 Kittridge Street, Van Nuys, CA 91405. Tel: (818) 782-1766 (voice), (818) 780-6260 (Fax), (818) 988-0452 (computer, 300, 1200, or 2400 baud, 8 Data Bits, 1 Stop Bit, No Parity). A year's subscription is well worth the $21. — JA
What happened to Tice?
Editor:
I read with interest Corey Greenberg's extensive review of power conditioners in November's magazine—extensive, that is, except for the glaring omission of any mention of the Tice Power Block. Granted, the Power Block got a long, glowing review a couple of years ago in Stereophile. But for just that reason, it would have been useful to know how these new contenders stack up against what was (and presumably still is) a breakthrough product. Especially since the last time I looked it ranked as a Recommended Component.

It couldn't be a backhand slap at Tice for trifling with the Correct View of the Known Universe? Not in a magazine that prides itself on its objectivity and takes such pains to deliver the news straight to its readers?

Nah...

---

David Zigas
via MCI Mail

Following Robert Harley's review of the Tice Power Block and Titan in Vol. 13 No. 4, we bought the review samples to use as long-term references. We did miss a trick in not sending them to CG to use as a base for his review judgments, but it proved impossible to remove them from RH's listening room. It is not unlikely that a future issue will contain a comparison of the Power Wedge with the Tice gear.

---

VTL & contradictions
Editor:
Hey, I love VTLs; they're dynamite amps. But as for Mr. Manley, I quote directly from "Manufacturers' Comments," August '91, p. 219:

"...the samples for review were 'stock off the shelf' and definitely not specially prepared for 'reviewer's courtesy.' We do not play that game; never have, never will. Stereophile gets what the customer gets, we promise you."

September '91, p. 233: "we were not a party to ST's recent 'view'...in that we did not supply the equipment to Sam. In the case of the 225s, he purchased them from a dealer..." (last emphasis added)

A baldfaced contradiction? I leave it to you.

---

James H. Yim
Brooklyn, NY

Contradictions & VTL
Editor:
After reading Msrs. David and Luke Manley's comment on Sam Tellig's "anti-view" ("Manufactu-
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Stereophile, Vol. 14, No. 11
Nov. 1991

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— Robert Harley
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turers’ Comments,” Vol.14 No.9), I get the impression that VTL manufactures at least two versions for each model of their amps—one for the reviewer and one for the audiophile.

Should an amp sent to someone only for photography sound radically different from an amp meant for a reviewer? What are we talking about here, custom-designed amps? If that’s the case, I hope Mr. Manley can tell me what version my Deluxe 120 monoblock is (I purchased it from their Philippine dealer). It scares me to imagine what would happen had I purchased my amp from The Audio Advisor. PHILIP CHUA Secretary, Philippine Audio Society Quezon City, Metro Manila, Philippines

I forwarded copies of these letters to David Manley at VTL, who replies in this month’s “Manufacturers’ Comments” section. —JA

TRUE HIGH-END DEALERS
Editor:
I truly appreciated Bob Harley’s comments and footnote in the October ‘91 “As We See It.” Specifically, Bob pointed to the myopia of so many high-end retailers and their unwillingness to include younger people in their lists of potential customers. As Bob suggests in his footnote, high-end dealers should be more service-oriented, particularly toward younger audiophiles, and patiently show and explain to us the differences that exist in high-fidelity components. I agree heartily! I am very confident that through providing this kind of “schooling,” high-end dealers will see many of us return to make small purchases at first, and save our dollars for larger and larger purchases in the years ahead.

Attitude! It can make a big difference in everyone’s life, including stereophonic retailers. Just ask Jim at Soundings in Denver, CO. He just sold a Theta DS Pro Basic II and an Esoteric P-500 transport to me, and I’m only 26 years old. Just ask Jay at Stereo-Image in Boulder, CO. He just sold me a pair of Apogee Stages! Funny, simply because of their positive attitudes, rather than a “Quit wasting my time, kid!” attitude, they both went home with their wallets a little fatter that night.

Only patience and understanding from high-end dealers toward younger customers can lead to situations such as stated above. After all, is this not the type of service that separates true high-end dealers from those who just blow a lot of hot air? As audiophiles, we need to make an extra effort to support those who truly support our hobby; not just by words, mind you, but by action!

ROBERT DIERINGER
Manhattan, KS

KEITH YATES redux
Editor:
I must add a final comment on Keith Yates’s article “Are Audiophiles Music Lovers?” in the November 1991 issue. I live in Sacramento and have supported Keith Yates Audio since 1987. I am an audiophile and a music lover.

I bought my system (Pro-ject PCD, Sumo Aurora tuner, Mod Squad Deluxe Line Drive, Velodyne ULD-15 II, Vandersteen 2Cs, Rockford Fosgate RF 2000, AudioQuest Lapis, Emerald, Cobalt, Midnight) because I love music. I wanted to hear everything that my favorite recordings had to offer. Keith and Tom Gleeson, his first employee, helped me assemble my system and gain respect for the high end. Thank you, Keith Yates Audio.

Although I am an audiophile, the music always takes precedence over the equipment. In this sense I agree with Corey Greenberg. I would much rather listen to my favorite Bob Marley CD on a Fisher system than Ana Caram on the top-of-the-line system from Sound by Singer just because it sounds good.

I am offended by Keith’s statement that his “audiophiles never showed up” for his concerts. I was one of his audiophile customers and I tried to go to every concert that he put on. I could not attend the concerts that I did miss because of schoolwork. Also, Keith never offered to give me any free tickets. Suffice it to say that I was behind Keith 100%, and admired the way he tried to bring the absolute sound to the public.

The failure of Keith’s endeavor was not due to a lack of effort on his part, but instead to the immaturity of a growing Sacramento. Sacramento was not ready for the grand spectacle of a store that Keith opened. High-end audio is still in the hobbyist stage in this city. I used to see customers getting Keith’s advice on a low-end Denon system and then going to the Good Guys down the street because Keith couldn’t match their prices. Most audio consumers in Sacramento conduct

2 Although Keith’s store on Fulton Avenue is long gone, it has resurfaced in a way as FX Audio on D Street, Keith’s first location. The person in charge of this new store is Tom Gleeson, Keith’s first right-hand man. Every audiophile in town who I have spoken with agrees with my belief that Keith should have never moved from this locale. I’ve been to many audio stores around the country, and the D Street location is still my favorite. Good luck, Tom!
The Monitor Audio Studio 10 joins that select group of minmonitors with which I could happily spend the next 10 years listening to music. If you have a smallish room and want superbly musical sound, then check out the Studio 10. It may be all the speaker you'll ever need."

John Atkinson, Stereophile, Vol. 13 No 11 (Nov '90)

"(The Studio 15) is good enough to meet and beat the best on offer, and in view of its exceptional build quality and standard of finish, it deserves and receives our unequivocal recommendation."

Hi-Fi Review (Jan '91)
business like this. Not that many people here really appreciate what a high-end system can do.

This lack of appreciation, I feel, is due to the snobbish attitude and lack of credibility of the High End. I sometimes accompany friends who are shopping for their first high-end system to the high-end audio stores around the area. The first question most salesmen ask is, "What type of music do you listen to?" When we reply, "Rock," the salesmen usually say, "Well, a system of this high quality would be wasted on your musical tastes."

What kind of bleeping attitude is that? Sometimes they ask me what kind of power amp I have. When they hear that I use a Rockford Fosgate, their first reaction is to turn their noses up in the air. I ask them if they have actually listened to it, and they always reply "No." How can they criticize something they have never even listened to? Keith Yates Audio was the lone exception.

Michael Shibata
Sacramento, CA

The Boulder Paradox
Editor:
For over a year I have read Stereophile and, while I occasionally had a thought of writing, I mostly would lie down until it passed. (That must make me a strange device indeed—low input impedance and high output impedance!) However, a couple of comments by J. Gordon Holt in the review of the Boulder 500AE (Vol. 14 No. 10, October '91) have switched on my output devices.

JGH paid what sounds like the highest possible tribute to this amplifier: "...recordings I know about sounded the way they ought to." Isn't that what Class A is all about? Why is the Boulder then recommended as a Class B component?

Why is there so much impracticality in some high-end audio? Gordon talks about warming up the 500AE, stating that it takes an hour before the amplifier "starts to sound like something worthy of a review in these pages," and that the improvement continues for another five hours or so.

Do serious audiophiles really plan ahead so exquisitely that they warm up their amplifiers hours in advance? Any amplifier I buy jolly well better sound good with a 45-second warmup, because that's all it gets before the needle hits the groove and the backside hits the chair.

As for his suggestion that one leave the amp on all the time because it "only" draws 250W at idle, Gordon must have incredibly cheap electricity or a mighty wallet: in Chicago, where we pay about 12¢ per kilowatt-hour, 250W left on for a year costs about $260! Not to mention the global-warming stuff.

On preamps: Do audiophiles actually listen to their screechy-bright Columbias and DGs from the '60s? Do they grit their teeth and pretend to luxuriate in the blaring but "uncompromised" sound that comes from a preamp having no tone controls? Do they stick their fingers in their ears to tame that skull-splitting treble? Is this really fun?

Well, it's time to stop. I have to go turn on my amplifier so it will be ready to listen to by April. The Rite of Spring deserves no less.

Dave Shuman
Chicago, IL

Regarding amplifier warm-up, would that it were not so. But it is.

Regarding tone controls, I have yet to hear an equalization circuit that does not take something essential away from the sound while it corrects a recording's tonal problems. I say this with some chagrin, having spent some time trying to equalize some early recordings of mine, made with bass-shy mikes, in order to put them on Stereophile's next Test CD. The originals had a magical sense of space, but sounded rather threadbare; the corrected versions sounded tonally more correct but the space had been sadly diminished. A practical example of the Second Law of Thermodynamics as applied to audio: anything you do to the sound to apply a local improvement will make it worse in global terms. I guess that's why I listen to my screechy-bright '60s Columbias and DGs au naturel.

Regarding the Boulder 500AE, the ratings are decided after discussion at the annual Stereophile writers' conferences, each reviewer acting as an advocate for the components he wrote about. JGH agreed at the 1991 conference that an overall "B" would be appropriate for the Boulder, hence "B" was what it got in our October 1991 listing. To resolve this question, TJN offers some measurements on this amplifier in the next issue, while RH is auditioning one of the samples reviewed by JGH and will report on his findings in a future issue.

—JA

Aesthetic Lust & the Original Rite
Editor:
I must congratulate you on Robert E. Benson's article on Stravinsky's The Rite of Spring ("Building a Library," November 1991). It has the kind
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of scholarly exactitude and judicious analysis, along with lucid style, which makes for worthy musicology. Please keep him aboard; he is one of your most exemplary writers.

In Benson’s article I was both surprised and fascinated to learn that, “In September 1987, after years of research, the Joffrey Ballet presented a production that returned as much as possible to the original 1913 sets, costumes, and choreography. Seen last year on PBS, it was a triumph.” A presentation of Stravinsky’s masterpiece with the original setting and dance! The idea is stunning. Yet, I and many other people knew nothing about this, and therefore were never privileged to see it on PBS. Does your Mr. Benson, or any of your staff, know if this presentation is available on videotape? I suspect I am not your only reader who is consumed with aesthetic lust at the idea of one day viewing such a grand spectacle.

Vanessa Vyvyanne Du Pré
St. Louis, MO

_I did see the excellent PBS production, but as far as I know it is not yet available on videotape._ —JA

**THE MISSING RITE**

Editor:

Robert Benson’s “roundup” of _Rite of Spring_ recordings in “Building a Library” (Stereophile, November 1991) omits one that is among the outstanding recorded versions I have heard; and, as a _Rite of Spring_ nut and as a collector for over 40 years, I have heard most of them. Admittedly, the Benjamin Zander/Boston Philharmonic recording (IMP Masters MCD 25) may have escaped Mr. Benson’s notice because it is a recent release, but it is of such excellence that I think it should be brought to the attention of your readers. Also, it is unique in at least one respect. To outline its virtues and areas of particular interest:

1) It is the first recording in which the final section, the “Sacrificial Dance,” is successfully played with the rapidity that Stravinsky wanted.

2) The orchestral performance is coupled on this CD with a recording of the Stravinsky-supervised piano roll (ca 1920) in which the tempo of the “Sacrificial Dance” is proof that Zander’s tempo is per the composer’s wishes. Besides, hearing this historic piano roll is of interest in itself.

3) The Boston Philharmonic plays with a virtuosity that is all the more amazing when it is considered that: a) it is a semi-amateur orchestra; and b) the recording was made at a concert performance and no corrective sessions were required, even in that breathtaking “Sacrificial Dance”!

4) The sonics are such that the CD has already been used to demonstrate high-tech audio components.

5) It is one hell of an interpretation!

Gerald S. Fox
Bethpage, NY

**WHO THE HELL IS MICHAEL ROSS?**

Editor:

Who the hell is Michael Ross and how did he get his job? I usually don’t read Stereophile record reviews because their knowledge of post-1978 rock music is absolutely zilch, but I did this time after reading John Atkinson’s editorial in November. The view expressed that music was better in the ’60s is nonsense in the extreme; some of the best stuff ever has been done in the last 15 years. Old fogyism has set in early with the Stereophile reviewers and that goes for Richard Lehrert too. I mean, come on: Bob Dylan? The Beach Boys? Why not an article on Greg Sage and the Wipers? Many of their early albums, such as _Over the Edge_, are classics. Or how about the great West German band Can?

John Atkinson should know better since British magazines like _Melody Maker, Bucketful of Brains, NME, et al_ cover the underground music scene; but what does he do? He quotes a critic from the great airhead magazine _Rolling Stone_, which is not a serious magazine—it is more a glorified press release for the major record labels. Whatever the majors are pushing this month, the _Rolling Stone_ critics are singing its praises. The best rock magazine is _The Bob_, which has the best music critic by a wide margin in Fred Mills. David Marsh’s _The Heart of Rock & Soul_ is not “an excellent book.” It was roundly criticized in _The Bob_ for being musically illiterate for the past 10 years.

I realize it’s hard to follow state-of-the-art rock music in this country because the wretched radio stations only play bland, tasteless top-40 music or oldies—goldies, which is another way of saying they’ll be playing music that’s been played a million times before. Where I live, only the community radio station KKFI is up to date with their alternative music show. Anyway, here is a short list of artists from the last few years that a reviewer should be familiar with or they really shouldn’t be reviewing rock music: The Pixies, X, the Wipers, 

Stereophile, February 1992
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I THINK I'M GOING TO THROW UP!

Editor:

I think I'm going to throw up. JA discusses Stereophile's mouldy Rock & Roll preferences "at length" and manages to reduce the issue to a scientific thesis (Vol.14 No.11). Citing expert authors and musician/reviewers, he justifies Stereophile's penchant for reviewing old records because it's been proven that music from the '60s and early '70s is theoretically superior to most music recorded since.

What a bunch of crap. You pompous dweeb shouldn't even pretend to know anything about Rock & Roll.

And your little jam session, to further illustrate your point, was a joke. Of course those old songs are fun to play, that's why every kid I knew in high school did, and probably still does, if they haven't gotten any better.

If there's one thing that Rock & Roll is, was, and always will be about, it's change.

Check out the November '91 issue of Esquire. It seems Robert Plant now loathes "Stairway to Heaven" so much that he refuses to do a Led Zeppelin reunion tour. Apparently, the thought of playing "that bloody wedding song" 50 times is enough to make him turn down millions of dollars. Come to think of it, I might turn down a few bucks just so I wouldn't have to listen to that song 50 times.

Sure, times have changed; record companies, radio stations, and most of all, MTV, are spewing out Paula Abduls and Poisons in record numbers. But wasn't Berry Gordy's company just a wee bit formulaic 25 years ago?

The fact is that there is tons of new music worth listening to, and no one could care less if the artists were influenced by Muddy Waters or Johnny Lydon—or Roseanne Barr, for that matter.

Like it or not, the Stereophile reader of the future will be listening to contemporary music, for the most part. So if you want to keep them in the fold, ditch the reviewers you have now and find some people who get out there and listen. (And don't even think about Corey, after that Stax/Volt analysis last September—I wouldn't trust him to review a parade.)

But wouldn't it be nice if, when the record company releases that Crosby Stills & Nash Super CD set in Limited Edition Whoopee Box, and RL starts jumping up and down like Steve Martin (the new phone book's here!), your new reviewer could say, "Gee, Richard, that's great, but . . ."

ROSS CAMERON
New York, NY

THERE IS GOOD MUSIC IN THE '90S

Editor:

I must respond to Michael Ross's review of Chris Whitley's Living with the Law (November '91, p.235). I am in my early 20s and I am not nostalgic for Michael's past. Music of the '60s and '70s is overrated and overplayed. My collection is stacked with music from Dylan, Hendrix, The Doors, and many others. But I haven't sold out newer bands with just as much to offer as any one of these "classic" artists. '80s and '90s bands like Nirvana, Gang of Four, De La Soul, The Jeff Healey Band, Living Colour, Joy Division, Smashing Pumpkins, The Blue Aeroplanes, Cocteau Twins, XTC, Public Enemy, and Red Hot Chili Peppers have all produced tremendous music. The problem is not that there is less good music, but that less of it is played on the airwaves or MTV.

Ross is correct in asserting that '60s and '70s bands were rooted in American blues and soul music. But I find it ironic that Ross states that the power of '60s and '70s music (as opposed to '80s and '90s music) "grew directly out of Black American traditional and popular music" (p.237). Who can faithfully assert that the music of De La Soul, Urban Dance Squad, Public Enemy, Prince, Nirvana, and Jeff Healey did not grow out of the same origins? The chanting and rhythmic repetition of rap is rooted in traditional slave
How a little company from Huntingdon, England, consistently produces the world's best-sounding CD players.

Meridian’s first CD player, the MCD, single-handedly opened the door to higher CD sound quality. Each and every Meridian CD player that followed—the PRO-MCD, the 207 and then the 206—set progressively higher standards for sound quality, winning the highest praise from audiophiles and critics alike. This time, Meridian has refined a new type of digital signal processing to create the Dual Differential PDM BITSTREAM D-A Conversion System. Available first in the 208 CD Player, this breakthrough Meridian technology results in CD reproduction with unequalled clarity, resolution and accuracy. Now, the Meridian 208 CD Player/Preamplifier, the new 206B CD Player, the 203 and 606 Outboard D-A Converters, the 603 Control Unit, and the amazing D600 and D6000 Digital Loudspeakers all use the Dual Differential PDM BITSTREAM Conversion System.

Never satisfied with “good enough,” Meridian always can be counted on to make the best sounding digital technology sound better.

For the technically-minded, this new Meridian conversion system employs two parallel, 256x oversampling BITSTREAM processors in each channel. Exclusive digital circuitry makes an inverted copy of each channel's signal and then sends this normal/inverted pair of differential digital signals to the converters. After conversion, a differential passive analog filter eliminates extraneous ultrasonic noise; then a differential amplifier combines the two audio signals into one ultra-low-noise, ultra-low-distortion signal. This system offers a phenomenal linearity of ±0.5dB, from 0 to -120dB, a range as wide as that of human hearing and greater than that of existing live recording systems.
songs and ultimately rooted in ancient African culture. The blues chords of modern “alternative” bands are patently obvious. Why doesn’t Ross go out and listen to Nirvana’s Nevermind? And finally, all of this music is rooted in triumph in spite of pain, a celebration of sorts, which to me defines the blues tradition. When Nirvana’s guitarist/singer was recently interviewed, he was asked what type of music he listened to and he flatly stated, “Leadbelly.” He then went on to list a plethora of musicians from genres that dated across this century. This is why great bands from modern times surpass their predecessors. They do not feel the need to be rooted only in one tradition. They take what they like from all traditions and subsequently expand. And finally, they innovate. They come up with sounds we have not encountered before.

Once again, the problem is that modern media often fail to give the great bands attention. For them, there are two types of music: 1) pop trash, and 2) classic rock, both of which sell. As John Atkinson put it, “songs are now played on the radio largely because they are played on the radio” (November, p.6). Where Ross, Atkinson, and the rest of the 30/40—something crowd is wrong is in their assumption that music must sound “old” in order to sound good (a sign of aging?). I feel sorry for them.

PHILIP JENKS
Portland, OR

TWO CENTS’ WORTH

Editor:
After reading “As We See It,” Bowen Simmons’s letter to the editor, and Richard Lehnert’s record review section in the November issue of Stereophile, I have to put in my two cents.

In JA’s column, he seemed to put forth the idea that since the “record industry is mining its own tailings,” it naturally follows that old music is better than new music. As you know, and as your magazine has postulated a number of times concerning taxing audio tape and cassette players, the record industry is greedy, greedy, greedy. That’s why it’s mining its own tailings. When Graham Nash describes the boxed sets that are being released as “memory coffins,” it sounds to me that he is indicting the resurrection of old music for the sake of making a buck at the expense of ignoring new independent bands that can’t find distributors.

Your column also brought into play Billboard magazine’s Hot 100. My premise concerning Billboard is, if the music you are listening to is on the Billboard Hot 100, then it’s probably not worth listening to or its appearance on the list is a fluke. I personally stopped believing and trusting not only Billboard, but also the Grammies and other recording-industry barometers of that ilk when Elvis Costello did not receive the Best New Artist Grammy in God-knows-what year. (I believe the New-Artist Grammy winner that year said that the award truly belonged to EC.) And if you read Billboard, as it is apparent that you do, you will find that my mistrust and disbelief are well-founded.

You also inferred that if the music wasn’t solidly based in black blues and soul tradition, then it must be shallow. Please show me Crosby, Stills & Nash’s black blues roots and soul traditions. I certainly am not trying to infer that old music is bad. I have a number of records and CDs that date me. (A younger friend even commented that the music he and his wife and I were listening to one day was the Supremes, a group that was popular in my generation.) I do admit that I still listen to some of the music I enjoyed at an earlier age. But there is also music that I listened to earlier that I am now embarrassed by my fascination with. I’m sure that there is new music that I’m listening to now that I will be embarrassed to admit that I ever heard. And there will be music that I listen to today that I will cherish in the future. But the nostalgic feeling for that music will not make me stop listening to new music. And it has not stopped me today. I have not been sitting on my butt wailing about how horrible popular and rock music are without doing something about it. I have gone out of my way, and sometimes I have to go very far, to find music that I think is worth listening to. I suggest that your record reviewers do the same.

If you or Mr. Lehnert are looking for rock or pop music to review by using AM radio, FM radio (except college radio), or any of the other industry organs, get a clue. The stuff that’s worth listening to is not there. I suggest that you listen to college radio and heavily filter out the total crap you will hear there to find music worth listening to. Talk to some people who weren’t around in the ’70s, not to mention the ’60s, who like music. Some of their opinions will be as valid on new music as on old music. Take a stroll down to the local “alternative scene” record store, where the teeny-boppers and Madonna wannabes do not buy their music. Also stay away from the mega-corporate record stores like Tower. Take another path and visit a few used record and CD

Stereophile, February 1992
The Krell CD-1 Compact Disc System

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stores. The stuff that is any good is being bought quickly at used stores. ("Used" is defined as buy it, tape it, sell it, and repeat.)

I don't want to show my bias against Madonna-music, Hammer-music, Phil Collins-music, Abdul-music, Wilson-Philips-music, Nelson-music, and other such sludge and invisible-music, but there it is. I would like to offer you a few examples of music to check out. Try G. (Grant) W. McClenann, Watershed; Lloyd Cole, Don't Get Weird on Me Babe, and/or his earlier self-titled release Lloyd Cole, American Music Club, Everclear; Billy Bragg, Don't Try This At Home; Julian Cope, Peggy Suicide; Laurie Freeloove, Smells Like Truth; Heidi Berry, Live; Alison Moyet, Hookoo; Morrissey, "Kill Uncle"; Rain Tree Crow, Rain Tree Crow; and in the more aurally adventurous vein: Chapterhouse, Whirlpool; My Bloody Valentine, Glider EP; Cocteau Twins, almost anything. If you insist on reviewing old music, pull out some old Talking Heads, Smiths, Laurie Anderson, ABC, Elvis Costello, Chris Isaak (not his latest, though), David Bowie, Gang of Four, Heaven 17, or the multitude of others. The CDs by G. W. McClenann, Lloyd Cole, Billy Bragg, and the American Music Club are all brilliant.

I'm sure that other people who are disturbed by your reviewing old music will not agree with my tastes in music. And that's fine with me. My motto is, "If it's popular or if too many people like it, then it must be suspect." That's what killed Twin Peaks: too many mainstream people trying to make Twin Peaks fit into their own preconceived idea of what a TV show should be instead of trying to make the effort to take an alternate view of what a TV show could be. Laura Palmer's murder would not have been the first unsolved murder in history.

MARK KIELAR
San Francisco, CA

BONES OF CONTENTION

Editor:
I will try and get to the chase. It is difficult because JA's article ["As We See It," November 1991] is so [expletive deleted] annoying.

There are three bones of contention: 1) "As We See It," 2) "the fact that you can never go back to a virginal state of mind," and 3) the big lie: "Why was the music of the '60s and early '70s so much better than what we are being offered now?"

As for item 1, if there are more than one of you with this state of mind regarding the music offered today on the world market, then your book does not belong in the music review business (classical aside). I will return to this travesty.

I suggest that your sentence quoted under item 2 be changed to: "I think that the increased difficulty in achieving joy through music is merely the fact that you can not go back to vinyl."

"Why was the music of the '60s and '70s... better?" Well, the answer is, it was/is not better. You either want to walk with the same drummer or, my guess is, you don't hear a different drummer. I do not know if you hear at all.

If, after spending a few weeks with the enclosed list of music, you can still tell me that the music of the '60s and '70s has more musical talent, more imagination, more message, and more musical joy, then I say you do not hear. If you still feel the boring, trite, self-indulgent muck of the '60s and '70s is better music, then my guess is you are beyond help.

I offer the enclosed list, not as a definitive answer, but as just one of many lists that answers your question. A list:
- Lyle Lovett and His Large Band, MCA/Curb MCAD-42263
- Pixies, Trompe le Monde, Elektra 61118-2
- Jerry Garcia/David Grisman, CD2, Acoustic Disc
- S.E. Rogie, The Palm Wine, Workers Playtime LC 8357, EFA CD 17616-22
- Gipsy Kings, Este Mundo, Elektra 61179-2
- The Best of the Waterboys, Chrysalis F21Z-21845
- Tom Waits, Small Change, Asylum 1078-2
- Concrete Blond, Caroline, IRS IRSD-13811
- The Violent Femmes, Why Do Birds Sing?, Slash 26476-2
- Red, Hot & Blue, Chrysalis 21799-2
- Living Colour, Time's Up, Epic EK-46202
- The Ringling Sisters, 60 Watt Reality, A&M 75021-5337-2
- Mary's Danish, Circa, Morgan Creek 2959-20003-2
- Indigo Girls, Back On The Bus Y'All, Epic EK-47508
- Linda Ronstadt, Canciones de mi Padre, Asylum 60765-2

I have no idea what JA likes in music. Like is not the issue here. I like Lowell George and Little Feat. I do not like the current band much and feel they should not carry the same name. And so it goes.

I am 52 and I can not remember a time when music was better. —BILL HELMICK
Irvine, CA

I guess I was wrong. Wasn't I? —JA

Stereophile, February 1992
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"The measured performance of the PSB New Stratus was excellent. Its response smoothness, deep bass extension, and very low bass distortion were outstanding, . . . Altogether, the PSB New Stratus is an exceptionally fine speaker with livable dimensions and handsome styling." Julian Hirsch, Stereo Review, May 1991


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US: Larry Greenhill

Lincolnshire, IL, December 13, 1991—International Jensen Incorporated announced the acquisition of Davidson-Roth Corporation, manufacturer of high-end FM tuners and antennae under the Day-Sequerra brand name. International Jensen Inc. also owns other American audio companies, including Acoustic Research (AR), Advent, Jensen, NHT, and Phase Linear. In addition, IJI's Massachusetts-based AR facility has collaborated with other American high-end manufacturers (along with Davidson-Roth), including Mark Levinson (Cello Ltd.), to produce a line of “reference quality” audio products (see “Update,” September 1991).

Davidson-Roth will relocate its headquarters, manufacturing, and research and development operations from Schaumburg, IL to AR's Canton, MA site. David V. Day, founder of Davidson-Roth, continues to manage Davidson-Roth and will also assume the responsibilities of director of engineering at Acoustic Research. Day's previous work was at Northrop Corporation, where he designed advanced electronic combat systems. Military specifications insist on ultra-fastidious build quality, which contributed to the reliability of US weaponry in the Desert Storm operation. Day's manufacturing expertise in the military area carried over to the design and assembly of high-end audio gear at Davidson-Roth, and proved highly desirable to IJI when they considered the acquisition.

David Day, reached on the road during his move to the Boston area, discussed a number of products that will be produced at the new factory, including the FM SignalMaster outdoor antenna and the FM Studio 2 tuner. The Studio 2 will employ circuitry similar to the company's flagship tuner, the FM Reference (see review, Vol.14 No.12), but will be less expensive because it does not depend on an oscilloscope for tuning. Day's first challenge will be the production of AR's Reference line of electronic components as well as designing a new speaker system. He will employ computer modeling to simulate loads and distortion, and make use of a newly designed listening room at AR for final design evaluations. Future products include an entirely new FM tuner and CD player for the Acoustic Research Reference product line.

US: Thomas J. Norton

Applications of electronic noise-suppression technology are slowly filtering down to the consumer. Bose Corporation already has noise-suppression headphones on the market, aimed primarily at pilots. A Sennheiser representative recently indicated to us that his company will soon have a similar item on the market—if not, indeed, by the time you read this. And at least two US automotive magazines (Automobile and Auto Week) reported in late 1991 issues that the
In choosing a CD player, you can play the numbers...

1 beam or 3 beam / Mash. one bit, 16 bits. 18 bits or 20 bits / 2 times oversampling at 88.2kHz or 4 times oversampling at 176.4kHz.

...or play the music.

Recently more and more CD players have been promoted by a kind of numbers game, as if by some magic combination one CD player can be made to sound better than another. The vast majority of these CD players still fail to address the most important subtleties that reproduce the natural real sound of live music.

Adcom on the other hand continues to impress the audio critics with the superior musicality of its GCD-575 CD player. To reach this objective, "...the GCD-575 was designed and built with extraordinary attention to detail." *

We ask that you let your ears be the judge of which CD player meticulously reproduces the integrity of the original performance. The CD player that plays the numbers? Or our critically acclaimed Adcom GCD-575 which plays the music.

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*Stereo Review, 12/89.

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Nissan Corporation intends to offer such a system in the next-generation Stanza, although its potential availability in US versions is not yet definitely established. (Japanese car makers don't always incorporate all their goodies in their US exports.) The range targeted for suppression is the upper bass and lower midrange (80–200Hz). As in all such schemes, the system operates by monitoring the noise with microphones, then feeding a phase-reversed signal to the targeted area (in this case the car interior) via loudspeakers. The latter for this application will be the car stereo's loudspeakers, which are said to be able to simultaneously handle stereo playback.

Two potential problems come immediately to mind. First, this is bound to have an impact on the potential sound quality of the car's sound system; reproducing the large out-of-phase upper-bass/lower-midrange signal needed for noise cancellation will certainly cause the sound system to clip more easily in handling its normal chores. Second, the problems of achieving uniform noise cancellation throughout a space as large as a car's interior may not be trivial. That might be one reason why the noise cancellation is being restricted to a frequency region where the wavelengths are long relative to the interior cabin dimensions. Still, it's a promising idea.

In case you're wondering what impact all of this might possibly have on home audio, it has already seen one application in the Phantom Acoustics Shadow active low-frequency control reviewed by RH in Vol.12 No.12. And if current research efforts to develop a "smart" loudspeaker which will adapt itself to a room ever bear fruit, as likely as not some sort of selective, room soundfield cancellation will play a part.

**US: Peter W. Mitchell**

My "Ground Floor" column last March about cylindrical subwoofer enclosures sparked a lot of interest. My planned followup column on building your own tube subwoofer was delayed by many trips (both domestic and foreign) and a major operation, but I still intend to do it. Meanwhile, there's another option.

In the article I mentioned the excellent subwoofers in Sonoco laminated-paper tubes that have been sold in the Boston area by an MIT graduate named Poh Ser Hsu. He is now producing two models for nationwide sale under the Definitive Research brand name. The budget model, SW10, is a custom 10" woofer in a tube that stands 29" high, is 3dB down at 18Hz, and sells for less than $500/pair. The audiophile model, SW12, is a custom 12" woofer in a tube that stands 82" high, is 3dB down at 16Hz, and will cost around $950/pair. Having heard them at the homes of two Boston-area friends, I'm buying a pair of the latter for my own use.

Using subwoofers in pairs yields three benefits. Compared to a single common-bass subwoofer, a pair of subs delivers 6dB more bass power, reduces the amplitude of standing waves in the room (especially if the second sub is located along a different wall), and adds realism to spaced-mike recordings.

Like two other speaker companies nearby (Icon and Cambridge Soundworks), Definitive Research sells its subwoofers direct from the factory by mail or phone order, with a full money-back guarantee if you're not satisfied. You can try a pair in your own system and return them in a month if their performance does not live up to your expectations. The above prices include a passive speaker-level to line-level low-pass filter with a user-specified crossover frequency. An electronic crossover with a steeper slope is available at extra cost. Inquire at Definitive Research, 2 Eden St., Chelsea, MA 02150; (800) 554–0150 (voice or fax).

These subs cost less for a stereo pair than what many companies charge for a single common-bass subwoofer. The low price of the SW10 in particular removes some of the motive for building a tube woofer as a homebrew project. With the larger model, the saving would be greater.

**Japan: Thomas J. Norton**

In October I attended a seminar at Matsushita's Osaka, Japan headquarters along with other representatives of the US audio press. The main topic was the Digital Compact Cassette. While Philips in the Netherlands has been the prime developer of the new DCC system, Matsushita's involvement as a co-developer has been a rather poorly kept secret since the system's unveiling at the 1991 Winter CES. As you read this, the official "world launch" of DCC is only a few weeks away. At the time of writing, however, rumors were flying—fueled largely by an article in *Billboard*—that the launch would be delayed until the end of 1992. Not true, said a Philips spokesperson whom I contacted in early Decem-
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The golden age of loudspeaker design is upon us once more.
ber; the launch would go on as scheduled, though the planned big bash in Paris on April 30 has been canceled. Nevertheless, he added that it would probably be September 1992 before significant amounts of DCC product arrived in US stores.

The Osaka seminar was in two parts: a description of the technology behind DCC, and a demonstration of working hardware prototypes. The agenda included introductions and discussions by Matsushita home-office personnel of other new Matsushita (Panasonic/Technics) products, but the DCC portion of the proceedings was presented by Robert Finger, Assistant Director of Matsushita's Business Engineering Center in the US. Much of the material was similar to that already published in these pages—particularly our coverage in Vol. 14 No. 4 (April 1991). But rather than try to cover only the new material here, a summary of the what and how of DCC might be useful at this point, if only because of the system's imminent introduction. A review of our earlier coverage will provide additional details.

When Philips surveyed the worldwide sales of music media of various types a few years ago, they noted that compact cassette sales were beginning to decline. Forecasting a leveling-off, or even a slight decline, in CD sales, they felt that a new medium was needed to pick up the slack in cassette sales, especially if that medium offered all of the benefits of cassette (recordability, portability, and perhaps lower cost than CD) along with the marketing magic of "digital." DAT was out of the running early on—too expensive both on the hardware and software sides. Philips's answer was Digital Compact Cassette, or DCC, which they hope will eventually entirely replace analog compact cassette, and coexist with CD in much the same way as do today's cassettes. Because of the large inventory of analog compact cassettes in consumer hands (the average western household is estimated to have three analog cassette machines and 60 cassettes), the new system was designed to be back-compatible. That is, existing cassettes will play back in analog form on the new machines. The reverse, of course, will not be true—digital compact cassettes will not play, or even load up, on analog cassette decks. The new machines will record only in the digital format, and then only using the new, digital blank cassettes.

The new digital cassettes themselves will be similar in form to existing analog cassettes, though with some obvious differences. They will have a solid top (hub holes on the bottom only), mandating auto-reverse machines to provide for the system's full 90-minute play/record time (120-minute blanks are promised). A sliding metal shutter, like that on the rigid body of a 3½" floppy disk, protects the tape from dirt and damage when not in use, and makes an external case unnecessary. The tape itself is the same width as the tape in an analog cassette (though with slightly tighter dimensional tolerances), and has a similar formulation to that of good-quality videotape.

The heads of the new DCC machines are stationary, except for a single 180° rotation required in the auto-reverse process with what is expected to be the most widely used, single-head configuration. The tracks are longitudinally recorded at the same speed as in analog compact cassette: 1¾ips. Nine very narrow-pitch tracks are needed in each direction to handle all of the digital data. A single head, fabricated using the latest in thin-film technology, provides for digital record and play, and analog playback. The record and play sections of the head are separate; there is no erase head, and recording is done by overwriting. The record and play head segments may not be used simultaneously; a different head arrangement (possible to implement with the existing system, but more complex and expensive) would be required for off-the-tape monitoring while recording. The pitch (height) of each digital record track is 185µm, of each digital play track 70µm, and of the analog tracks 600µm.

1 This is probably intuitively obvious to our readers, but I guarantee that more than one consumer will not realize this and will try to play back a new DCC on his old cassette machine. It shouldn't jam, by the way. (I asked.)
Write or call for a brochure and the name of your nearest dealer.

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2Ci Hi-Fi Answers, April 1990
Alvin Gold

"The 2Ci is one heck of a fine speaker at its price ... Always musical ... Enthusiastically recommended as an affordable loudspeaker for Everyman."
2Ci Stereophile, May 1989
John Atkinson

"You'll surely rediscover your record collection."
2W Ultra High Fidelity Magazine
Odette L. Roy

"The Vandersteens make for very good listening. This is no small accomplishment!"
1B Son Hi-Fi Video
Laurent Racicot and Claude Gervais

"Soundstaging, tonal integrity and dynamics make this speaker so much fun to listen to that I kind of hate to put them away to make room for others."
1B Bound for Sound, May 1989 Martin G. OeWolff
The drive mechanism of a DCC machine has been intentionally designed to differ as little as possible from that of an analog cassette machine. Some minor retooling and, initially at least, tighter tolerances may be required, and new sensors must be incorporated to distinguish between analog and digital cassettes in playback. But the similarities dominate, which will help to keep costs down.

So much for the nuts and bolts. By far the most interesting details lie in how the data is laid down on the tape, and in the compression scheme used to accommodate the digital data to the relatively low storage capacity (compared with optical laser discs) of the tape. Bob Finger went on to explain more about these aspects of the design. The eight tracks of digital data (the ninth is a digital control track) are organized on the tape in sections called frames, each of which is about 170 milliseconds in length. The data on each track within this frame are further divided into 32 blocks per track, each of which is about 5.3ms in duration and contains 510 bits. Among these bits is a header which contains a synchronization pattern and frame and block information. During the playback process this information is used to put the associated data in a RAM buffer for further processing.

DCC's error-correction scheme uses a cross-interleave double Reed-Solomon code similar to that used in DAT, with a total redundancy of 50% for the main data. The loss of one complete track of the eight main digital tracks for an indefinite period is fully correctable. The loss of two tracks for 128ms is similarly no problem. As more tracks are lost, the length of time for which the errors are fully correctable decreases; all eight tracks may be lost for 32ms. Each of the "frames" on the tape are handled separately, and error patterns which occur in successive frames are fully correctable. It would seem to this observer, however, that such longitudinally periodic flaws would be most unusual, with a long scratch or gouge extending over several frames the more likely wear pattern or imperfection. In any event, this does not appear to be a problem area with the system in reports to date, all of which have, of course, been of prototypes in laboratory environments.

As alluded to above, the data-rate capability of DCC's linear recording scheme can't compare with that of the optical-based CD. The latter has approximately four times the data-rate capability (bits/second) of DCC, which means that 75% of the data in a PCM master must be discarded in order to accommodate the remainder on the DCC. The only way to do this is by data "compression," or, more correctly, low bit-rate encoding. Precision Adaptive Sub-band Coding (or PASC) is Philips's name for the method they've devised, which decides which data are needed and which can be thrown out. To briefly recap our previous reports: PASC takes into account the known limitations of human hearing—both perception thresholds and the masking known to occur when louder sounds conceal softer ones close to them in frequency. PASC begins its work with normal, linear PCM signals. It first splits the audio band into 32 equally wide sections, called sub-bands, with a (digital) sub-band filter (fig.1). In the subsequent sub-band encoder, PASC decides—based on its human-hearing threshold and masking algorithm—which of these sub-bands to encode at all. In those which it decides to encode, it determines how many bits to assign to the signal in that band depending on its determined degree of audibility (its level above threshold or freedom from masking). If any bits are left following this allocation, they're distributed according to the same priority until all of the bits are used up. The sub-band encoder also formats the data and adds control information. The data are then run through an error-correction encoder, 8/10 modulated in the ETM MOD block, and finally passed to the record amplifier, which drives the thin-film recording head.

Two important comments need to be made about the decoding process (also shown in fig.1). First, the decoder is much simpler than the
The New THIEL CS2.2

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encoder; later improvements can be made in the encoding format (ie, improved prerecorded software) without obsoleting the playback deck. Second, the output of the playback sub-band filter is again linear (S/PDIF) PCM, and may be decoded by any standard PCM D/A converter, either built into the recorder or outboard.

One final aspect of DCC is worth emphasizing at this point. At the D/A and A/D interfaces, the DCC specification allows for 18-bit precision at 44.1kHz, 48kHz, or 32kHz sampling frequencies. That is, given an analog input to the D/A converter, and a converter with full 18-bit capability, the sub-band filter and encoder are capable of working with the full 18 bits (actually, their internal calculations are done to 24-bit precision). (The digital I/O operates at 16-bit precision and at any of the sample frequencies mentioned.) It would be incorrect to refer to DCC as an 18-bit record-playback system in the same sense as an 18-bit linear PCM recorder. Once the data enters the bit-rate reduction and encoding system of PASC, we enter a blinding maze of digital filtration and calculation which renders the 18/16-bit concept irrelevant except at the input/output interface. Furthermore, no matter how many bits are fed into the system (either by using 18-bit data or by sampling at a higher rate or both), PASC can only output the same fixed number of bits to be recorded onto the tape. But the ability of DCC to deal with more than 16 bits at its input does give possible theoretical advantages over a straight 16-bit system in some respects, particularly in dynamic range.

Following the DCC technical presentations, Matsushita personnel set up a demonstration of DCC hardware and software. We listened to comparisons of program material with and without PASC encoding (the unencoded material was digitally delayed a fraction of a second to match the delay resulting from the PASC processing), and also to a comparison of CD and DCC recordings of the same material. The system was made up of high-end Technics equipment, unfamiliar to the listeners because it is largely unavailable in the US. The presence of over 20 listeners, in rows of four, also meant that, unavoidably, only a few listeners had optimum seating positions. I was in the fifth row, and received virtually no direct sound from the loudspeakers, only indirect sound from the room.

Still, interesting observations emerged. Most of the journalists felt that they heard some differences, generally subtle, although at least one felt that DCC coding caused a definite deterioration of the sound. I felt that there was a noticeable loss of three-dimensionality and "air" in the PASCed playback of at least some of the selections. But I also felt that the DCC format could be a definite step forward if we're talking about a system to replace analog compact cassette, particularly of the prerecorded variety, and not a system to challenge CD's pre-eminence as a consumer digital playback medium.

Three observations must be made here. First, this demonstration, because it used 16-bit-mastered CDs (at 44.1kHz) as a reference, did not exercise the full potential of the DCC 18-bit A/D, D/A interface (but see MC's accompanying piece on a Philips/Decca demonstration in London conducted at about the same time as the Osaka seminar). Second, some types of program material will very likely prove more sensitive to "PASCing" than others. And third, we were listening to prototypes; the real test will come with production hardware and mass-produced

![Fig. 1 DCC player/recorder block diagram](image-url)
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software. I suspect that DCC, with its inherent—and other—bit-rate-reduction schemes, will provide plenty of grist for discussion and controversy among audiophiles for a long time to come.

UK/The Netherlands: Martin Collloms

It was at London's Hilton hotel on Park Lane last November that Philips chose to present the latest developments in the Digital Compact Cassette (DCC) technology. There was much to report, and Gerry Wirtz of Philips delivered the information in his usual crisp, efficient style. But this was not the end of the affair. In an unprecedented gesture, Decca (PolyGram's London Records in the US) made their London facility available to the press for the rest of the day. Tony Griffiths of Decca had generously arranged a monitoring suite, relevant staff, and a selection of 18-bit Decca masters with the sole purpose of exploring the intrinsic fidelity of the latest DCC-grade PASC coder-decoder temporarily in residence. I arranged to further impose on Decca for another couple of hours on an exclusive basis to carry out more assessments and hopefully to make some test copy recordings. In the event, not all the tests I wanted to try were possible, but the session nonetheless gave rise to some fascinating results. One fact was blindingly obvious: DCC PASC has come a long way from the sonic standard suggested by the previously known performance of the theoretically related 248k-bit/second Musicassette system.

Other DCC developments included the latest listing of 64 software and hardware supporters, including, of course, Sony. That promised bandwagon certainly looks as if it is beginning to roll. Gerry summarized the market position to date, explaining that CD hardware sales were leveling out: 40 million machines sold worldwide last year (fig.2), while DCC units have a potential ceiling of 180 million. With blank and prerecorded cassette tape sales totaling 2 billion—plus, the great potential for a new and better format which will play the existing analog cassette catalog is obvious. Just as CD did not appear until well after LP sales had begun to decline, then went on to generate its own growth and market position, it is envisaged that DCC will not prejudice CD's present position. LP sales peaked at 1 billion discs as early as 1978, and had lost nearly 50% of volume when CD was introduced in 1983. Musicassette has grown steadily from '71, but sales have now also leveled off. Predictive market analysis suggests that musicassette will fall away to 600 million or so by the year 2005, while CD software is expected to hold at the 800–900 million level. Worldwide LP sales are expected to drop to below 50 million between '93 and '95.

On the other hand, DCC's anticipated rapid growth rate, three times that shown by CD, is expected to slide strongly into the worldwide sales volume of the musicassette. It is anticipated that it will revitalize the cassette medium, thanks to its high digital specifications, cleaner packaging, and hopefully superior sound quality and desirability. In addition, much more extensive text storage is feasible than is presently possible with CD. Text can be output to a suitable domestic TV via the SCART connection common in Europe.

There is an interesting relationship between the specific hardware and the sales of software or media. A CD user typically buys nine or ten CDs in the first year, falling to only two by the ninth year. Thus the average disc collection is around 45 CDs. By contrast, the consumer seems to have a much more casual attitude to cassettes. They are not valued as something to collect, as are those "jewel-case," stylish, iridescent CD recordings. In the first year a cassette user will purchase only three cassettes, with a typical total of just 14 tapes over a long period of ownership. It is expected that many more DCC decks will be purchased than CD players.

Questions were raised concerning DCC and
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Sony's MD. Wirtz responded by saying that technology could be applied to level out intrinsic differences. Tape was inherently shockproof and lent itself to portable outdoor applications, while disc, with its fast traverse, had inherently rapid track access. The disc could be shockproofed by throwing electric memory at it to cover gaps due to skipping; on the other hand, faster winding motors plus predictive electronics can speed track access via tape.

Distinguishing between the two, Wirtz described the tape carrier as a streamer type of medium, its best application a portable, pocketable background music carrier; eg, for in-car and travel applications. He added the terms "consumable," "disposable," and "workhorse," supplementing the classification with "simple one-hand loading/handling, and a robust, shockproof package." By contrast, CD is a "foreground" medium with active track access used in direct living-room listening. Its optical character and collectable, attractive visual nature were noted, plus its enlarged case-display area.

Wirtz then stressed that DCC's PASC coding system differs from the other data-reduction schemes in that a large safety margin has been allowed in information storage so that the likelihood of any audible defect was extremely low. Over the 1991 period, the coding process had undergone further refinement and fine tuning, with developments under assessment as late as November '91. In fact, this work continues. Key points concern the fact that 50% of the data reduction was not derived from the coding but from a more efficient use of the available digital storage. We know that linear coding is wasteful of data storage, but when the 16-bit linear standard was defined, it was the best that could be done. Efficient usage of the bits is worth a 2x factor in storage density without any audio compromise at all. DCC uses a 4x reduction over-all and achieves the next 2x worth in the PASC system itself, that 32-band predictive filter and adaptive data control system. As 1991 proceeded, exhaustive tests were conducted at Philips laboratories, international standards committees, and for the benefit of possible licensees.

Definitive listening tests on PASC were completed soon after April 1991, and the okay was given for masking the first-generation silicon at Philips' Southampton, UK (ex-Mullard) facility. The usual process revisions resulted in second-generation silicon becoming available during Summer 1991, leading to working PASC decoder boxes. These early chips carried the full PASC algorithm, according to Wirtz, and in fact the coder-decoder box auditioned at Decca—see later—was not a fabricated "special," but did in fact use representative "generation 2" silicon in pre-production form.

Plans for "generation 3" are formulated and relate to the interfacing and processing ahead of PASC sections. According to Philips, the PASC encoding algorithm was fixed soon after April 1991 and is representative of what will be available in DCC products this year (1992).

Decca has also played a substantial role in the subjective evaluation of DCC. On some occasions, subtle audible defects have arisen which have usually turned out to be artifacts of the listening arrangements and could not be directly attributed to the PASC system. One conceptual difficulty concerns repeated listening tests on a live coder chain. Due to the statistical nature of a component of processing, where, for example, a coding decision is based on a fine threshold between bit levels, the code parameters used are not always identical for successive trials. The adaptive part of the design means that the decoder can correctly track these differences, but possible subjective artifacts could differ between successive code sets. Thus the listener might possibly have heard something on one pass only to find its absence on subsequent passes. The alternative of recording the PASC effect is also anomalous; the pass recorded may or may not contain code with a possible defect.

Notwithstanding, the general view is that DCC sound quality has advanced to a point where its inherent 18-bit resolution is becoming significant. During some mid-'91 tests in Japan where audibility was indicated, subsequent checking showed that detection was in fact due to truncation of the code to a 16-bit CD level for their listening sessions. Another early reported
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detection concerned a change in character of a non-musical click present in a particular test recording, the click itself proving problematic. The coder was then retuned by the addition of a prior analysis of the complex power spectrum before full coding, to ensure that this area of subjective sensitivity was not compromised in the coding. Subsequently, what coded error remained became inaudible. Philips’s own confidence is reflected in Gerry Wirtz’s statement that “We can now match CD sound quality.” He went on to suggest that ultimately the 18-bit potential resolution of DCC would reinforce a generally high level of confidence in its performance.

Wirtz outlined developments in thin-film heads resulting from development by Seagate, a specialist in the technology and well-known for computer hard-disk drives. A new head block and system of front guides—see fig.3—automatically align the tape to the high level of precision required for good registration. No pressure pad is used. Instead, a facing block provides a smooth path in close contact over the head, the latter coated with a high-durability anti-wear film. Remember that standard audio-grade, low-coercivity tape is used, which has a proven long lifetime and good remanence. It turns out that Philips developed the analog version of this thin-film head seven years ago, but the unit cost was a few cents more than the standard type and it was not put into production! Wirtz reiterated that, for most existing cassette recorder designs, going digital was merely a matter of installing the new head and its accompanying process and control chips.

Wirtz confirmed that April 1992 was still the official launch date for the new format, and that over that year a range of DCC products would emerge from Philips/Magnavox and Marantz, including models priced from approximately $450 to $800. Four were to come from Philips, including a Walkman-style unit plus a high-grade type from Marantz. The latter, designated the BD700, will boast 18-bit record and replay to fully exploit DCC’s 18-bit resolution, with A/D chips by Asahi Kisei and high-resolution Bitstream DACs. Philips’s top model, the DCC900, will have a metal mechanism and tray loading, and incorporate 16-bit A/D and Bitstream D/A replay conversion. It will be highly featured, incorporating full text-mode capability. Lower-cost models will include the DCC600 and DCC300, with 16-bit D/A and A/D. A working DCC900 was shown which successfully played DCC and analog compact cassettes; the DCC output compared well with the CD of the same program under public audience conditions. Aiding this comparison on both DCC and CD, signals were fed in digital form via the S/PDIF interface to one of Philips’s digital input-capable integrated amplifiers.

The “Walkman” model is a multi-use record and play design in a pocket-size format. A partly working model was shown, complete with LCD display and digital line out via an optical link.
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Stereophile, February 1992
There was mention of a home docking station and an accessory D/A, A/D pack to add to the unit, as is seen with some of the ultra-compact DAT units. A 90°-entry standard-size auto player will be produced for in-car use, available in late 1991.

The promise of 500 software titles to be available at launch was reaffirmed, and seven replicating plants worldwide are getting organized for production of DCC recorded tapes. The first, based at Amersfoort, will be capable of satisfying initial demand. There is also an agreed document controlling the duplication standard. The usual high-speed 64x process can be used with some modifications. Blank DCC costs little more than compact cassette to manufacture, but recordings are likely to be sold at "not greater than" CD prices. Blanks sold retail are initially likely to cost around $15–18.

Once again, the digital advantage of simple recording practice for DCC was noted. No level setting, no tape–compatibility checks, or other settings are required. The format does not include subcode data, but does store times and tracks. An auxiliary code can be generated to assist in making personal compilations. Wirtz noted that early indications pointed to DCC coding being pretty tough; he felt it could stand 20 consecutive passes or more without significant degradation. Some discussion arose concerning SCMS or Solocopy protection, to prevent illegal cloning of DCC originals. Solocopy will be incorporated.

Sony and Philips have exchanged MD and DCC prototype hardware. Wirtz was asked an awkward question: "What did Philips think of MD?" His answer: "No comment, but we have returned the MD sample!" Nonetheless, the press packet included an announcement that Philips and Sony had agreed to jointly license MD technology, both software and hardware packages.

A mention of CD-R (recordable CD) resulted in the rather dismissive reply that many more CD players were needed, scattered about the house and car, for it to succeed in any volume. Its application was mainly for recording specialists and hi-fi fanatics.

Questions were also asked concerning archiving. While it was conceded that the latest PASC coding format was amenable to future improvement, and that more subjective data were required to establish the required level of confidence, positive arguments were made for the hardware side. Compared with relatively delicate DAT tape, the DCC medium uses a low-coercivity tape, highly stable and with a proven life of 30–40 years. The data format is also robust, with 47% data redundancy, and almost two tracks may be lost without corruption of the replay signal.

LISTENING TESTS AT DECCA ON DCC CODING

Decca monitored its tests via B&W studio monoblocks feeding B&W 801s in a large, well-designed monitoring room at Decca headquarters. Many of the demonstrations were so arranged that replay was at the 18-bit level set by the Decca 18-bit master tapes. The audience was quite large, almost 15 persons, many in non-ideal room positions. A cable-connected A/B switch (labeled "A = original, B = DCC coded and decoded") was provided for anyone to try.

1) A section of solo piano—Mussorgsky, "Il Vecchio Castello," from Pictures at an Exhibition, played by Olli Mustonen—was tried first. There was no significant difference perceivable between 18-bit linear PCM replay and 18-bit DCC; dynamics, timbre, focus, smoothness, low-level ambience, etc., were all fine. A very promising result.

2) Orchestral: "Under African Skies," a full-bandwidth recording. A short excerpt was compared with the result obtained after 80 successive passes through the DCC coder/encoder. In this full-level test it proved difficult to tell the multi-pass copy from the original 18-bit one, save for a small increase in background noise due to the usual requantizations.

3) Pushing DCC to the other extreme, a full 18-bit solo piano recording was fed via DCC at digital "+48dB" (equivalent to 10-bit encoding) to exercise the system on low-level signals. On replay, the system gain was restored to explore the production of audible low-level noises, modulation effects, and the like. The only result was a 3dB increase in noise due to the second quantization in the DCC processor. In an effort to magnify these apparently inaudible differences, the same exercise was repeated for 80 passes. The expected increase in noise due to the successive requantizations was as expected, and since the optimum dither and formula is not presently used in PASC, the mild modulation noise heard was also in line with expectation. Finally, the test

---

3 I would assume that, as the vast majority of lost data occurs after the first pass through the encoder, subsequent passes would be more or less irrelevant due to the signal now being preconditioned for optimum encoding by the PASC algorithm. —JA
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was repeated at the 125-copy level. Here this artificially low-level signal was significantly corrupted by requantizations, yet the main music content was still recognizably present. The piano was still there, and seemed quite accurate in timbre and acoustic despite the now very noisy background.

From these results I have to concur with the opinion of the Decca engineers involved: the DCC format has matured very rapidly. Under these test conditions, it appears to meet all reasonable musical demands. Understandably, Decca has taken a liking to DCC, with its promise of preserving much more of the 18-bit original quality and dynamic range of their master recordings. At present, these are dithered and rounded to 16-bit for the CD mastering process.

So far, the inherent fidelity of DCC expressed in these tests suggests that it will be generally comparable with good CD, and that the performance of DCC equipment will be limited more by the A/D and D/A stages used with it than by the PASC coding and data-packing system. These test results have also included the effect of S/PDIF and equivalent serial interfaces between equipment and for coupling to the PASC box. With complete DCC equipment, the consequences of the digital tape transport and the interface to it will also have to be accounted for.

Decca expressed the opinion that, while their high-bandwidth digital tape recorders would unquestionably continue to be used for master and archive work, the performance so far shown by the DCC system suggests that an 18-bit...
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DCC tape would be the best way of getting a prepared master from Decca to the tape-replication plant. By comparison, a 16-bit U-matic CD-type master might well be regarded as something of a compromise.  

- - Ed.

**Home Trial of DCC Coding**

By using selected 18-bit master recordings and a compatible 48kHz R-DAT format, it proved possible to make copies with and without DCC coding at 18-bit resolution and replay the tape, suitably scaled, at an effective 18-bit level (i.e., in terms of the low-level resolution processing of DCC). Decoded by a Theta DS Pro Basic and played through a system of great analytical power, it proved possible to detect a mild lightening and thinning of timbre due to the PASC encoding/decoding, as well as a shade less depth, but interestingly an increase in more local ambience and reverberation—a confusing combination. At the same time, the leading edges of transients were just perceptibly dulled and rounded—much less than would be experienced by swapping two good microphones, for example.

The area where judgment must be reserved at present concerns pace and rhythm. Here, listeners particularly sensitive to these effects felt that DCC slightly impaired the music’s pace and rhythm. They felt that all the notes were present, right enough, but that the subtle nuances of temporal expression were diluted on their return from the digital coding process. However, similar effects have been heard on an R-DAT transport, while imperfect S/PDIF links can do similar damage. Though it would be inappropriate at this stage to blame DCC, still we do not have a positive result on this issue.

![Flag]

**US: Peter W. Mitchell**

In June and November 1991 I discussed proposals for cable-borne and over-the-air digital radio, including the efforts by the National Association of Broadcasters (NAB) to establish a US standard for digital broadcasting based on the Eureka-147 system from Europe. The NAB, representing 9000 AM and FM station owners, opposes any nationwide system of digital broadcasting using satellite relays and/or cable-TV distribution. If, during the next few years, consumers become accustomed to receiving digital radio signals through a cable-TV connection or a small satellite antenna, the American tradition of local radio could be doomed. By the time the FCC is ready to establish a standard for local digital radio (around 1996, say), there may not be a market for it. Station owners would be stuck with obsolete technology (AM and FM) and a declining audience.

The NAB continues to favor locally owned stations transmitting digital radio at L-band frequencies (around 1500MHz or 1.5GHz). But in light of the Pentagon’s insistence on reserving those frequencies for military use, the NAB has invited developers of nine other digital radio systems to submit their proposals for evaluation, including several that would operate within the present FM band. The Electronics Industries Association (EIA) also established a digital radio subcommittee to assemble technical information, do comparative system testing, and develop standards.

The EIA’s hope is that a voluntary standard for digital audio broadcasting (DAB) will be adopted by both broadcasters and receiver manufacturers—a standard which the FCC would simply endorse, similar to the way the MTS system of stereo TV sound was adopted in 1984. If the industry can succeed in uniting behind a single standard, DAB may avoid a repeat of the AM stereo fiasco. (When the FCC was asked to select one of four proposed AM stereo formats as a national standard, the Reagan-era commission’s non-decision was to “let the marketplace decide.” AM stereo is still languishing, ten years later. Japan recently adopted Motorola’s C-QUAM system as its standard, prompting Sen. Larry Pressler (SD) to introduce a bill, S.1101, which would require the FCC finally to adopt a single standard for the US.)

Six developers of over-the-air digital radio systems discussed them during a seminar on digital broadcasting at the October ’91 convention of the Audio Engineering Society. They fall into three groups, in order of declining cost for the broadcaster:

1) Systems operating in a new band of frequencies that the FCC would allocate for digital radio, using local transmitters and/or direct-broadcast satellites. Examples: the NAB/Eureka system and the “CD Radio” package developed at Stanford. The latter is a satellite system, aimed mainly at mobile and rural/suburban listeners, supplemented by local gap-filling transmitters to serve listeners in urban canyons. North America would
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- Sound & Vision Magazine

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In Canada: Paradigm Electronics Inc., 457 Fenmar Drive, Weston, Ont.
be served by two satellites, located at 103° and 121° West longitude, transmitting strong signals at 15800MHz that could be received using antennas the size of a playing card. The signal would contain 100 discrete programs, appealing to all niche markets, each using Musicam coding (256 kilobits/second, 256kb/s, for stereo).

2) “FM interstitial” systems using local transmitters would be combined in a complex multi-frequency signal that would be placed in the blank spaces between local stations on the FM dial. Example: a system proposed by American Digital Radio. ADR did a computer study that examined the service areas of existing FM stations and concluded that, using only unoccupied gaps in the FM spectrum, new transmitters could provide at least 5 digital programs to every point of land in the US, employing the equivalent of FM Class-B transmitters with an effective range of 30 to 50 miles.

ADR favors the FM band for digital radio because 100MHz is an ideal frequency for broadcasting. It is high enough that the signal does not propagate effectively beyond the intended service area; i.e., unlike AM radio at night, listeners rarely encounter interference from non-local stations. On the other hand, the FM band is low enough in frequency that signals penetrate effectively into buildings (allowing indoor antennas to provide adequate reception) and highway tunnels (ensuring uninterrupted reception in cars). An L-band digital radio system might require an outdoor antenna, and drivers may encounter gaps in coverage as they travel.


According to Tony Masiello of CBS, the project’s goal is to provide multipath-resistant CD-quality sound using frequencies already assigned to FM stations. It would use MUSICAM coding (192kb/s for stereo), the best-sounding of several bit-reduction systems tried to date. The bitstream would also include 128kb/s of data for paging, data distribution, text, car navigation, etc. With about 80kb/s reserved for error detection and correction, the total bit-rate would be 400kb/s. To fit this into the 200kHz bandwidth of an existing FM channel, the signal would be transmitted using a modulation scheme known as QPSK (quadrature phase-shift keying), a technique that is widely used in digital satellite communication and is not difficult to implement.

To reduce multipath effects, the bitstream is interleaved among multiple-frequency carriers, in this case using 21 carriers each carrying a piece of the code. This is called frequency-division multiplex, or FDM. The allocation of bits to different frequencies resembles the cross-interleave (CIRC) arrangement in CDs, where successive bits are not placed adjacent to each other on the disc. Multipath interference is frequency-dependent: when bits are corrupted by multipath at one frequency, interleaved bits will be received clearly at another frequency. Thus when the code is reassembled in the receiver the corrupted data are redistributed, producing only small gaps in the code, and the missing bits are reconstructed by error-correction. The combination of QPSK and FDM—i.e., multiple carriers with each using QPSK modulation—has been given a made-up name: “coded polyvector digital modulation.”

Studies of multipath reception have revealed typical echo-path delays of 5 to 20μs and from as few as 2 to as many as 20 simultaneous reception paths, producing rapid variations of 10 to 50dB in signal strength. In a moving car the resulting “fade notches” tend to occur less than 100’ apart. However, in tests of the Project Acorn system on the West Side Highway in New York city and on hilly San Francisco streets, severe multipath conditions took out only a few of the 21 carriers at a time.

The MUSICAM coding system formats its digital codes in “frames” occupying 24 milliseconds. At the beginning of each frame the Project Acorn system sends a standard bit pattern known to the receiver. The receiver adaptively equalizes the incoming signal (in the digital domain, of course) to optimize the reception of
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that bit pattern, effectively re-optimizing its reception 40 times per second in order to reduce the burden on the error-correction system.

According to Masiello, the Acorn system needs less than 100W of transmitter power to cover the same geographical area as a 50,000W FM station. At the receiving antenna, a signal strength of just 0.8µV would be enough for satisfactory DAB reception. The DAB carrier signal would be centered at the same transmitter frequency as the analog FM signal but would be at a modulation level of -30dB, effectively buried under the analog signal. The ability to extract such a buried signal uses technologies borrowed from the military, where it is commonplace to transmit coded signals that are buried within noise and extract them reliably. (Like Teflon-coated frying pans, microwave ovens, and the integrated circuits that made personal computers possible, this is another case of technology that was initially developed for military use and later adapted to produce a consumer benefit. Details of the approach, however, are subject to patent applications by Acorn.)

The technique of distributing code bits over several frequencies to minimize the effects of multipath reception is not unique to the Acorn system; it is used by most proposals for digital radio, including the Eureka system from Europe. Other panelists in the AES workshop on digital radio called it a "spread-spectrum" approach and disagreed about how wide a frequency range is required. According to Prof. George Plenge, one of the developers of the Eureka-147 system, a single 200kHz FM channel does not provide enough frequency spread to eliminate the effects of multipath.

Panelists also disagreed about the merits of putting multi-frequency DAB signals in the gaps between existing FM stations. A proposal that would interleave six multi-frequency programs in a 1.5MHz band was said to be wasteful of spectrum space. But Prof. Plenge, noting the FCC's practice of assigning FM stations in major cities to frequencies 800kHz apart, said that DAB transmitters would need a guard-band of only 50kHz. Thus you could have a 200kHz FM channel, a 50kHz gap, a 200kHz DAB channel, a 50kHz gap, another 200kHz DAB channel, and so on until you come to the next FM station.

Co-channel interference (ir, DAB signals from different cities on the same frequency) would be no more serious than with FM, where a 3dB capture ratio is usually enough to suppress the weaker signal. However, adjacent-channel interference from FM could be a problem: a strong FM carrier that is heavily modulated with loud music will splatter enough to cause reception problems with the adjacent-channel DAB signal. If this turns out to be a real problem, it could be reduced by having the analog FM station reduce its carrier level when playing loud music.

Prof. Plenge and Skip Pizzi, formerly with National Public Radio in Washington, agreed that using L-band frequencies for DAB would be costly and inefficient. The CBC's on-air Eureka experiment last year in Toronto used a 500W transmitter for six digital programs (ir, 100W per program), operating at 700MHz (in the UHF band). The NAB's Eureka demonstrations in Las Vegas and San Francisco operated at 500MHz, also in the UHF band. Because of propagation losses in the air, the required power varies with the frequency squared; ir, at 1500MHz (L-band) the required power would be four to nine times greater. An alternative proposed for Europe using a 2500MHz (S-band) signal would need even greater power.

Pizzi cited a recent study by the Canadian Broadcasting Corporation, concluding that a terrestrial L-band DAB transmitter would require about the same power as present-day FM transmitters in order to achieve both the same geographic coverage and comparable building penetration. Since nobody makes a 50kW L-band transmitter, it might take a while to develop the technology, putting a damper on the NAB's proposals to use local L-band transmitters for digital radio in the US. DAB systems operating in the FM band, on the other hand, would need only a few hundred watts to cover the same area.

The Eureka project in Europe is now set to use ISO/MPEG II coding4 (essentially the MUSICAM4 MPEG (Motion Picture Expert Group) is an international committee of engineers, formed under the auspices of the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC). Its goal is to select technical standards, both audio and video, for the reproduction of motion pictures via digital media. MPEG is not creating hardware, just evaluating proposed technologies and trying to select the best one as a standard. One of the largest potential markets for this is "interactive CD"—an audio/text/video format created for home entertainment and education, effectively combining the best features of video games, home computers, and a TV-based encyclopedia.

Two such systems were launched commercially in recent months. The "official" Compact Disc Interactive (CD-I) format was developed by Philips and several large Japanese companies while the upstart, Commodore Dynamic Total Vision (CDTV), came from computer manufacturer Commodore International. At last summer's CES both companies proudly announced that their systems would handle discs that use MPEG-I technology to put digitally compressed full-motion video in one-fourth of the screen while the remainder of the screen contains a still-frame image or text. In the late '90s a second-generation MPEG-II system, still under development, will provide full-motion video over the entire screen, enabling a two-hour movie to be squeezed into

4

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Stereophile, February 1992
The all new mkII generation of the Icon is a fitting sequel to its predecessor. Sporting a handsome new package and a new CAL laser drive, the Icon mkII represents extraordinary value.
CAM system discussed in the September 1991 issue by Martin Colloms), with a bit-rate of 128 kilobits per second per independent channel. In listening tests, this system was reported to be indistinguishable from the source and was much better than Nicam, the 700 kilobits/second system now used to distribute stereo TV sound from London to the rest of the UK.

Digital radio promises to deliver sound both better and more consistent than FM, with virtually complete immunity from static, noise, and multipath interference. But sound is not the main reason for the interest in digital radio that is now spreading through Congress and the FCC. The reason for developing digital radio is as much to fix the flaws of analog radio as it is to provide CD-like sound quality. For example, there will be space in the code to provide a variety of new services in addition to music: computer data, stock market quotes, local traffic and road-condition reports whenever you want them, sub-coded information about music and recordings (such as multilingual lyrics), and program-following. (When you drive from city to city and one station fades out, the radio will automatically switch to another station carrying the same program or genre; i.e., capturing the local NPR outlet in each locale as you drive down I-95. Listeners won't have to remember station frequencies or call letters; just use a "like/don't like" button to tell the radio what you enjoy, and it will find similar broadcasts as you drive.)

Some of these auxiliary services are provided now by FM subcarriers (SCA in the US and RDA in Europe), and they represent profit opportunities for broadcasters. For that reason, not only FM stations but AM stations too will want to join the parade by owning a DAB transmitter. You say that AM station operators obviously don't care about audio quality? That's not the issue; if digital radio is going to be a profitable business, anybody doing radio now will want to be part of it. So will lots of people who are involved in disseminating (i.e, selling) the kinds of information that you might enjoy having access to while listening, either at home or driving your car.

DAB Postscript

In this country the federal government controls 60% of the radio spectrum. Only 40% remains for the FCC to assign for civilian uses. So, when the Pentagon insisted on retaining control of the L-band frequencies around 1500MHz (1.5GHz) that the National Association of Broadcasters wanted to use for digital radio, the FCC gave in.

At the forthcoming World Administrative Radio Conference the FCC will propose that S-band frequencies near 2300MHz should be assigned to digital radio. Developers of the Eureka-147 DAB system reportedly favor the same choice for Europe.

If that decision stands, it probably will require the use of more powerful (i.e., more costly) satellite transmitters than developers wanted to use. Ground-based DAB transmitters at such high frequencies may be totally impractical, both because of excessively high power requirements and because geographical coverage would be spotty, with many gaps. It seems likely that this move will build support for "in-band" DAB proposals using the present FM band.

Apparently the developers of the "CD Radio" system anticipated the move from 1500 to 2300MHz. Even before the FCC's decision was publicized, they were conducting demonstrations using a 2300MHz satellite transmitter already in orbit. In contrast to the large concave dish-shaped antennas used for satellite TV (which must be aimed precisely at the point in the sky where a particular satellite is located), the S-band demonstration employed a hemispherical palm-size antenna resembling half a grapefruit. Installed round-side-up on the roof of a car, it could pick up signals from satellites anywhere in the sky. (More importantly, it means that a carborne antenna would not have to be re-aimed every time the car turned a corner.) Proponents of this system also indicated that S-band satellite signals can be received in any weather—unlike the Ku-band frequencies used for some TV relays, which are weakened by rain or snow.

Meanwhile, the NAB's worst fears seem to be coming true, as digital radio services proliferate via cable-TV hookups. One of these, Digital Cable Radio (DCR), is now available to 1.6 million subscribers via 24 local cable systems. DCR delivers a package of 19 channels, each dedicated to a different musical genre, and two enhancements were added recently. John Sunier's popular weekly "Audiophile Audition" is now carried on DCR's Spectrum channel, which delivers a variety of special-interest programming including Dixieland jazz and show tunes. And in a new arrangement with Tower Records, any CD played

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StereoPhile, February 1992
Two decades ago our background in precision machining inspired us to build the Linn Sondek LP12. We said it was the best sounding turntable in the world.

Everyone said we were crazy.

Several years later our proficiency in mechanical engineering allowed us to design the Ekos and Troika. We said they were the best sounding arm and cartridge in the world.

Everyone said we were lucky.

Over the last few years, our expertise in electrical engineering led to the Aktiv Electronic Crossover, LP12 Lingo, Kairn Preamplifier, & Kremlin Tuner. We said they were the best in the world.

Everyone said we were getting to be a real pain in the butt.

Today, after seven years of extensive research by a team of dedicated electrical & mechanical engineers, we are proud to announce the Linn Karik and Numerik. The best CD transport & digital processor in the world.

Wouldn't it be nice if someone finally said we were right!

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For a complete reprint of the Stereophile review on the Linn Karik CD transport and Numerik digital processor, contact:

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By the way, next month we will be introducing a new loudspeaker and it's the best sounding . . .
on the service can be phone-ordered through DCR at Tower’s usual discount price.

UK: Ken Kessler
Traditions die hard in England. I wouldn’t have it any other way. I didn’t, after all, move from New England to Great Britain to celebrate Bastille Day or to watch bulls run through the streets or to see the swallows return every year. But one tradition is about to change, and not a moment too soon.

To the best of my knowledge, the UK is the only territory on earth where you don’t get a mains plug when you buy electrical goods. Yes, you read that correctly. Whether it’s a new amplifier or a lamp or a toaster, you simply cannot tear open the box and plug in your latest purchase, no matter how excited you may be. With few exceptions—some kitchen appliances like washing machines and electric cookers, some computer items—what you see dangling from the item is a mains cable terminated in... bare wire. And, whether you spend £9 or £9000, you’re expected to cough up another 59–79 pence ($1–$1.39 at time of writing) for a plug to fit those wires. This in itself is an insult, a demonstration of meanness such as can only be found in a UK retail outlet. But safety is the prime reason for the government proposal to force manufacturers to fit plugs as standard.

All mains-operated devices sold in the UK sport color-coded wire, whether the goods are of the three-core grounded variety or two-core, as with many double-insulated Japanese products. And the code is repeated on the label which comes with every mains plug I’ve ever purchased: green-and-yellow stripes for ground, blue for neutral, and brown for live. The last pin is connected to a fuse, most plugs coming supplied with a 13-amp fuse in place.

As the entire operation of connecting wire to plug involves only one screwdriver and is so simple as to border on the intuitive, you’d think that anyone with an IQ higher than that of an amoeba would be able to fit the damned thing. But, alas, the number of mistakes that three wires and a fuse present to the average consumer is formidable, and you have every right to reinforce any misanthropic tendencies you may harbor, based on a belief that man is inherently stupid.

The danger is, of course, connecting the green-and-yellow to anything other than the middle pin. Then there’s the flip-flopping of the blue and brown, which most audiophiles end up doing if they spend a lot of time testing their mains polarity. And then there are the dorks who, even with two-core cable, fit live or neutral to ground. As for fuses... well, most punters don’t realize that fuses are safety devices, so the number of appliances which should be used with a 1-, 3-, or 5A fuse but happen to receive the juice through a 13A job is beyond comprehension.

So safety alone is reason enough to champion the supplying of fitted plugs. (Power tools and heavy-drain appliances which do come with plugs usually feature molded-on types for even greater peace of mind, still with readily accessible fuses.) And what has stopped manufacturers from doing it voluntarily? Cost, of course.

I do wish that the Mail On Sunday (the paper claiming credit for the campaign) had listed the manufacturers who say it would add £2 ($3.50) to the cost of items fitted with plugs. As canny shoppers can find mains plugs for as little as 50p (and even these must pass government safety standards), I would imagine that the bulk trade price per plug is somewhere in the 20–25p region, especially when ordered by the hundreds of thousands. And as most makers would simply order their mains cables with the plugs already molded in place, they can’t really suggest that extra labor would be involved at their end of the manufacturing process. Those who assemble the VCR or toaster or answerphone would still be connecting the two or three wires internally to the unit, while the mains cable would already be sporting the plug.

Why should the extra cost at sticker-price level be so crucial, whether it’s £2 or 50p? Because truly hard times are upon us. I’m writing this during what is supposed to be the busiest time of the year—a couple of weeks before Christmas—and yet the shops are empty: all shops, bar those selling Christmas cards. And if times are that tough, maybe an extra few pounds or pence will deter what few shoppers are out there brav ing the recession.

If meanness or mere (financial) caution is the order of the day, will the need of a second pair of speaker cables deter those who would partake of the other major break from tradition? As announced at the Hi-Fi Show in September, the BBC has approved the bi-wiring of the venerable LS3/5A loudspeaker, and it deserves to be the
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biggest hit of the season.

The wee monitor has been a prime target for modification and (potential) bi-wiring ever since its birth. The Mod Squad was but one company tweaking the little devil, and many a hi-fi casualty dreamed about a speaker with the LS3/5A's virtues, but more bass, or higher power-handling capability, or even scope for fine-tuning... as afforded by four terminals instead of two. The last is now a reality.

Whenever one writes about the LS3/5A, one has to worry about upsetting the BBC and the three or four companies involved in making the product. As it's a perennial seller, the licenses are cherished, and no licensee wants to risk incurring the Beeb's wrath. So details about the bi-wired version's origins are hard to come by, beyond the inference that all parties had some hand in the transformation.

The late Richard Ross of Rogers is credited in some quarters with working on the crossover splitting; Spendor, too, claims involvement. Meanwhile, Harbeth is said to be continuing with the normal, two-terminal LS3/5A, which may or may not be marketed as the LS3/5A Classic. Why not? It worked for Coca-Cola, and the original LS3/5A deserves classic status as much as any product in the history of hi-fi.

Although bi-wired LS3/5As are about to be shipped to dealers, some questions remain. Aside from Harbeth, the other companies may simply replace the original with the bi-wired version, which isn't that gloomy a prospect for purists, as 1) they can always buy the Harbeth version if they find bi-wiring too tweaky, and 2) the bi-wired version, if run with a single pair of leads, sounds just like your good ol' LS3/5A Classic.

UK price, too, is another as-yet-unresolved issue, but a figure just under £400 ($700) seems certain. Although this may seem like a hefty tariff for a quality minimonitor, the LS3/5A has, in fact, resisted inflation better than just about any other product past its 15th birthday. I won't name names, but had the LS3/5A aped some of its mid-'70s contemporaries, the price would now be closer to £1000 ($1750).

So what's it sound like? Considering that, in order to meet BBC specification, it has to sound exactly like the thousands of LS3/5As already in the Corporation's possession, in single-wire mode it's the same delightful performer we know and love. Realistic voices, detailed top but an aversion to sibilant material, humpy bottom, and super-precise imaging. Take out the bridging links, add an extra run of cable, and hey! Super LS3/5A!!!

The bass hasn't suddenly gained an octave, and you still have to cope with that cute bulge around 100-125Hz designed to fool you into thinking it contains a 10" woofer. Vocal reproduction remains world-class.

The treble is still crisp and detailed, and sibilance remains the LS3/5A's bane. It continues to be terribly unforgiving.

The real miracle is that the speaker sounds louder, even if it's only an impression of greater levels rather than a genuine increase on your SPL meter. That's probably due to the bi-wired LS3/5A sounding more relaxed when performing well within its operating range. I tried the standard LS3/5A at an averaged 82dB at 2m, followed by the bi-wired model at the same level, and heard less compression, less restraint on dynamic swings. The speakers sounded bigger than they had any right to do. So I bought 'em.

I've been an LS3/5A addict for over a decade, worshipping the little devils and marveling at how they've seen off every minimonitor to come down the pipe since '75. It's sort of like H. Rider Haggard's She: a dip in the flames, and the speaker's life has been extended.
The result was striking... a real soundstage.

The result was striking. “This is wonderful,” my listening notes read — “a real soundstage.” The sound produced by the Signets on this piece (Otello, Karajan and the Vienna Philharmonic) defied their size and price. The [SL280] Signets were (and are) remarkably satisfying on a wide range of music, from the most intimate to the most bombastic.”

Thomas J. Norton
Stereoophile, Vol 13, No 10, October, 1990

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Gobs of bass and percussive kick... and there’s great ambience and imaging.

The Signet has more bass than the reference but preserves all the other good qualities. It almost gives the real feeling of a pipe organ — high praise for such little woofers.

The Signet SL260 is a winner. It handily beat the reference on all types of music.”

Gregory Koster
Sensible Sound, Issue 43, Summer 1991

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To continue our celebration of 30 years of continuous publication, appearing in this issue is one of J. Gordon Holt’s earliest “As We See It” articles, from Vol. 1 No. 2 (published on time—!—in November 1962), as well as a selection of early readers’ letters. Gordon’s doom-laden description of a world made mad by standardization is happily long out of date—isn’t it?—but was this the first usage of the phrase “boombox”? Note the LP de-warping sandwich, an original JGH invention. —JA

THE WEAKEST LINK
When the Record Industry Association of America adopted its standard disc playback equalization curve in 1954, hi-fi enthusiasts heaved a sigh of relief and bade fond farewell to years of confusion, doubt, and virtual pandemonium. Before the RIAA curve there were six “standard” curves in use, and since nobody seemed to know who was using what, getting flat response from a disc was often more a matter of luck than anything else. The adoption of the RIAA standard playback curve heralded an end to all this.

If record manufacturers had endeavored to install the best available playback equipment, and made their records for use on this equipment, there might be little to choose today between a stereo disc and an original tape. But when hi-fi ceased to be a pursuit of quality and became a pursuit of the Merry Megabuck, the RIAA curve became just another obstacle between the product and the consumer’s wallet.

The whole trouble was that J. Q. Public’s polished mahogany boombox had never heard of the RIAA curve. Cut a disc to sound natural when RIAA-equalized, and it sounded muffled and distorted to the average record buyer. So, one manufacturer tried making a few minor “corrections” in the sound of his discs, and by Golly, they did sound better on JQP’s console. Another manufacturer quickly followed suit, and the race was on.

Hi-fi enthusiasts and critics with good equipment noticed the change, but most of them naïvely confused more highs with better highs, so the record makers figured they had carte blanche to go hog-wild. They solved JQP’s distortion.
"LISTEN ...

... this thing really is more involving – more boogie-to-the-music, more fun to listen to for hours, more difficult to turn off – than an original Versa Model 2 record player.

Shocking and unsettling to me – you bet. True? Yes, but you won’t believe it until you hear it yourself.

You won’t get a lot of technical discussion from us or our dealers about these products. No technical description ever told anyone how a CD player would sound – all the necessary information is contained within the music itself.

So go listen to the music."

John Bicht - Designer, Versa Dynamics

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and turntable rumble problems by compressing dynamics until some LPs and stereo discs had less volume range on them than many 78rpm shellacs. They minimized groove-jumping by filtering out all deep bass, and brought out the "presence" by whacking up the treble, adding a 5kHz response peak, or moving their microphones right in on top of the instruments.

Most HI-FI Enthusiasts and Critics WITH Good Equipment NAÏvely Confused More Highs With Better Highs.

By 1959, the gimmicking of discs had reached such proportions that no tone control could begin to cope with these sonic horrors, so component buyers started choosing "sweet-sounding"—i.e., rolled-off—speakers and pickups in an effort to tame the screaming treble. Early LP discs, that actually had been cut to the RIAA curve, now sounded dull and sodden, thus giving rise to the reassuring myth that modern recordings are better than ever before.

Today there are some encouraging signs of a return to sanity, but to pretend that the average stereo disc is made to sound best when reproduced on the best equipment is to practice self-deception. Most record manufacturers still keep a sharp eye on the limitations of the average console phonograph, boosting here, attenuating there, and generally making a mockery of their claims of "highest fidelity" and their recommendations that owners of high-fidelity systems should "equalize to the RIAA curve."

If they all did the same things to their discs, or specified on the jackets what they had done, it might be possible to design equalizers to offset the effects of this messing around. But the nature of the manipulations is always a "trade secret"—most manufacturers won't admit that they do it all—which means that the poor slob of a hi-fi listener is right back where he started, only more so, because now there are no standard curves at all. There's only the RIAA curve, which hardly anybody uses any more.

In short, the relatively few record buyers who are really interested in getting good sound are being sold down the river in order to cater to the imagined needs of the vast, tin-eared public that can't tell good sound when it hears it, and cares less. Until the record manufacturers start giving us the kind of sound they could if they cared to, no amount of expenditure on "perfect" playback equipment is going to make modern discs sound any better than mediocre. There are too few audio perfectionists to have any effect on the sales of recordings, but we can write letters to record companies and the mass-circulation hi-fi magazines, and we can tell less knowledgeable record buyers what's going on. Until we can pressure the record companies into thinking in terms of top audio quality again, high fidelity's weakest link will remain the first link in the chain.

—J. Gordon Holt

Reports, reports

Sirs:
I think the first issue of The Stereophile was great. I don't see how you can keep it that good, but I'll be happy to see you try... Your record reviews are much too long, and waste far too much space talking about the music and the conductor. I can read High Fidelity and Hi-Fi/Stereo Review if I want to learn all about the music. You said your reviews would concentrate on the sonic aspects of the recordings. Why don't you do this? Make the reviews shorter, and stick to the technicalia.

Jack Tippett
Los Angeles, CA

Stereophobia

Sirs:
I say that stereo is a first-class fake and the biggest fraud ever put out by American manufacturers. I have never found anyone who knows audio engineering or music that did not agree with this. All those who disagree just don't know enough
to know the truth or they are liars engaged in selling stereo equipment. The only reason that most people have gone for stereo is that they have not had time, and will not take the time to get all of the facts. Then you will have an accurate basis to start off on your evaluation of stereo vs mono.

In any magazine the man who writes the answers to the technical questions sent in by the readers does not know it all and he usually knows only a very small part of it. If he knew it all he would be a very high-paid designer for some manufacturer or have his own factory. And that is why these published answers to technical questions are as bad as the advice given by the newspapers to letters sent in. The people who answer them are just not qualified to answer them; if they were they would not be doing such a job.

Anyone who thinks that you can tune a speaker cabinet with a flashlight battery should not be permitted to publish anything. Just to begin with you need to know the fall-off rate of the woofer as well as its free-air resonance and frequency-response curve. Then you have a starting point to pick out the frequency that you want to tune it for.

You also have to know the best shape for the type of enclosure you are going to build, and take into consideration that there will be a peak in the frequency-response curve at a half-wavelength of every measurement of the inside of the cabinet.

Then you have to know what shape to make the opening or openings and where to locate them. You must not only tune the cabinet, you must also correctly dampen it (which requires a 'scope). And if you tune it too low you lose the midrange bass of the woofers' response.

P. S. Montgomery
Oklahoma City, OK

Good grief, Charlie Brown! —JGH

Call for condemnation

Sirs:
One reason I subscribed to your magazine was because I hoped you would tell the truth about all the crummy equipment that is on the market, but I have yet to see you call any product really bad.

I thought that, having no advertisers, you would be able to do this, but all your equipment reports to date have ranged between raves and semi-raves. Is it that you have not yet tested any poor equipment, or are you afraid to condemn something bad when you come across it? Let's see you put some teeth in your test reports. The manufacturers of cheap junk have been protected for entirely too long by all the audio publications, but you have no excuse for doing this.

R. Schwenk
Allentown, PA

We don't have the space to devote to reports on junk, and we do not believe our readers are interested in junk. We do not see our equipment reports as a medium for venting our spleen, but rather as a means of alerting our readers to components they might be interested in.

We will report on junk products only when their advertising is so blatantly misleading as to demand refutation. We have a couple in mind, and will report on them in future issues.

—JGH

Warped discs

Has anyone devised a safe way of straightening warped records? I have several discs that are in need of attention, not so much because they are badly warped, but because my lightweight pickup's force is already so low that a little warpage interferes with its tracking.

Can you recommend a technique that will remove the warp without hurting the records?

R. Benner
Hartford, CT

There is no absolutely safe way of straightening warped discs, because the straightening requires that the disc be warmed, and the resulting softening of the vinyl makes it extremely susceptible to scratching until it has cooled again.

One technique that works, and is about 90% safe, calls for two 12" aluminum-base recording blanks (available from any large radio parts store) and about 16 spring-type clothes pegs.

Make sure the warped record and one side of each of the blanks is free from dust, and then sandwich the record between the clean sides of the blanks. Place two clothes pegs on opposite edges of the sandwich to hold it together, and then fasten the rest of the clothes pegs around the rim of the sandwich, spaced about an equal distance apart. Finally, clamp the center of the sandwich between a large bolt and nut, drawing the nut finger-tight.

Light a kitchen stove burner and hold the sandwich flat about 1½' above this until the bottom blank becomes warm to the touch. Turn the sandwich over and repeat this. Expose each side about five times in this way, and then lay the sandwich on a nonconducting surface (such as a book) in a cool (but not cold) place. Leave it there for about six hours, by which time it will have hardened about as flat as you're going to get it. —JGH

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Stereophile, February 1992
I enjoyed Corey Greenberg’s do-it-yourself buffered unity-gain preamp (November 1991, p.91). As a cheapskate, I was pleased to mention a few Radio Shack items that combine good sound with very low cost. I can confirm from personal experience the quality of their Ervin SN62 solder and ALPS-made volume-control pots. I have used Radio Shack/ALPs 10k and 100k pots in many projects, including the homebrew mixer that was used to make the organ recording excerpted in the Stereophile Test CD. [See also this month’s “Letters.”—Ed.]

I was disappointed by one aspect of Corey’s article: its title. Shame on RL and JA for billing Corey’s design as a “passive” preamp. C’mon, guys, can’t we agree on our language here? In a passive preamp the audio signal goes through passive devices only—wires, switches, resistors. If a preamp requires AC (or battery) power to operate, it is an active device. You could describe Corey’s design as a passive preamp plus a unity-gain active buffer, but the buffer is the heart of the circuit. The only thing that separates Corey’s preamp from any other active preamp, besides simplicity and good sound, is the fact that the gain of its line-level stage is unity instead of 20dB. (Of course, since it contains no RIAA phono preamp, it is only a line-level stage; but that has become a familiar idea.)

My recording mixer is also line-level only; I use it with dedicated balanced-input microphone preamps. Its construction is similar to Corey’s preamp: simple switching, Radio Shack/Alps level controls, and an active buffer to provide a low-impedance output. But it never occurred to me that I might call it a “passive” mixer; when its power is switched off, no sound comes out. It is an active, unity-gain, line-level mixer.

The remaining difference is that in place of the BUF-03 I used a high-quality op-amp, whose lower biasing current allows it to be powered from batteries for portable recording. Come to think of it, the BUF-03 could also operate on large batteries, preferably rechargeable types. In view of the BUF-03’s current drain, the best bet might be the nickel-cadmium batteries made for camcorders or the much larger gel-cell batteries used in electric scooters. Batteries are an option that novice do-it-yourselfers should consider if you want to avoid the added effort (and safety considerations) of building a power supply that connects to 110V AC power. Battery operation also avoids any hum, RFI, or veiling caused by AC power-line noise and grounding problems.

In Corey’s spirit of overkill, you could even use automobile batteries, with trickle chargers that you switch on when you go to bed. Connect a 12V and a 6V battery in series for the 18V positive supply, and a similar pair for the negative supply. But I wouldn’t keep them in the house; lead/acid batteries give off hydrogen gas when being recharged. I would locate them on an outside balcony or patio, under a wooden cover for weather protection, and run wires through the walls to bring the DC power to the preamp. (This arrangement would work fine, and I’ve heard of people who do it, but I don’t believe in that much overkill. I use sealed gel-cell batteries, which can be recharged in the house. I got mine through a medical-supply store, but your local Newark Electronics distributor stocks a range of Johnson Controls gel-cell batteries and matching chargers.)

If you decide to use the optional Record Out connection shown in Corey’s schematic, you should also add a second buffer to drive the Rec Out jack in each channel, in order to isolate the preamp from the nonlinear input impedance that many tape recorders present when turned off. An op-amp IC is adequate for this; it will alter the sound less than any tape deck does.

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STEREOPHILE, February 1992
spotted an error in my September '91 "Ground Floor" column. I had discussed the fact that most loudspeaker drivers and crossover networks are "minimum-phase" devices, meaning that their phase response is predictable from their frequency response and vice-versa. Generally speaking, a tweeter will have minimum-phase behavior, as will the section of the crossover network that feeds signals to it; the same is true for a woofer and its section of the crossover. One practical consequence is that if an equalizer is used to correct errors in a driver's frequency response, it will cancel the driver's phase errors at the same time. Thus the phase shift introduced by an equalizer could be a benefit rather than a drawback.

But I erred in generalizing this idea to complete loudspeaker systems. I hinted at geometric factors that may cause non-minimum-phase behavior in a complete speaker—for instance, the fact that in many speakers the effective acoustic center of the woofer is several inches behind that of the tweeter. But as Prof. Lipshitz reminded me, in most cases the total output of a crossover network also has severely nonlinear phase response. The individual sections of a two-way crossover may have minimum-phase behavior, but their summed output usually does not.

The best-known example is the 12dB/octave crossover network found in many two-way speakers. At the crossover frequency it produces a 90° phase lead in the tweeter and a 90° phase lag in the woofer, putting the drivers 180° out-of-phase at the crossover. Since that out-of-phase relationship would cause their outputs to cancel, producing a deep notch at the crossover frequency in the speaker's overall response, most manufacturers reverse the wiring to the tweeter. That brings the drivers back in-phase at the crossover frequency, removing the notch, but over most of its range the tweeter is effectively polarity-inverted with respect to the woofer. Thus in the speaker's sound the harmonic overtones of a musical note may have backwards polarity with respect to the fundamental.

Not surprisingly, this makes it more difficult to hear the overall polarity inversions that Stanley Lipshitz and Clark Johnsen have identified in recordings and playback systems. I have generally found polarity inversion difficult or impossible to hear using multi-way dynamic speakers. It doesn't seem to matter whether the "absolute phase" of the system is correct or backward, as long as the speakers are in-phase with each other. But when recording engineer Micha Shattner demonstrated polarity to me by playing simply miked live-concert tapes through original Quad electrostatics, inverting the polarity produced obvious changes in vocal timbre and stereo imaging. The effect was not subtle. Of course, most recordings are made with a multiplicity of microphones which may not have consistent polarity, making it impossible to identify a "correct" polarity for playback. But simply miked recordings often have internally consistent polarity. In that case the ability to achieve correct "absolute phase" in playback can be a real advantage.

One type of crossover network is free of phase-shift and polarity problems: the "first-order" 6dB/octave network, as used by Thiel and a few other manufacturers. With such a network the summed output of the crossover can have perfect phase behavior as well as flat response. If the drivers are mounted on a sloping panel that geometrically aligns the acoustic centers of the woofer and tweeter, the output of the system can be remarkably phase-linear across a wide frequency range.

So why doesn't everyone build speakers this way? Answer: It involves increased cost and potentially important compromises. To begin with, the individual drivers must have inherently flat response over the two octaves above and below the desired crossover frequency, a difficult requirement to meet with affordable mass-produced drivers. Suppose, for example, you have been hired as chief engineer for Acme Speakers Ltd., and your assignment is to design a full-range two-way speaker with perfect phase response, using a 6dB/octave crossover at 1500Hz. First you need to find (or create) a woofer that has smooth response up to at least 3kHz and preferably to 6kHz. This won't be easy; most woofers have severe cone-breakup resonances in that range. You can reduce their severity by careful selection of cones and cone-damping materials, and can move the breakup resonances to a higher frequency (away from the crossover range) by making the cone smaller and lighter.

The most effective solution is to select a 6" woofer instead of the 8" or 10" that is the traditional choice for a full-range two-way. The smaller woofer has another advantage: better off-axis response, which may translate into improved imaging and reduced coloration. But it moves only half as much air as an 8" and one-third as much as a 10"; you have sacrificed the ability to reproduce bass drums and pipe-organ pedals at
lifelike levels. Your "full-range" speaker is beginning to sound like a minimonitor.

That's okay if you only want to sell the speaker to audiophiles, who are willing to pay extra for a perceived improvement in quality—and for whom imaging and freedom from midrange coloration are more important priorities than bass extension. (Part of Stereophile's credo, handed down from JGH, is that the midrange is where the action is in music; if a speaker gets the midrange wrong, doing its job right in other areas doesn't matter much.) But does your boss, the president of Acme Speakers, share that view? Was he hoping to sell lots of speakers to the much larger market of Stereophile readers?

Next you have to deal with the tweeter's fundamental resonance, which typically occurs around 1kHz, with a pronounced impedance peak at the resonant frequency and a complex phase curve in the octave to either side. You can minimize these effects by adding a "Zobel" network whose impedance curve is equal in amplitude but opposite in phase, effectively canceling that of the tweeter. In any case the tweeter still rolls off rapidly below its resonant frequency; with a 1500Hz crossover the tweeter resonance must be located below 1kHz, preferably at 500Hz. It isn't easy to find (or make) a tweeter whose resonant frequency is that low while still being light enough to respond smoothly up to 20kHz in the high. But you've got to do it; if the drivers have significant mechanical resonances or rolloffs within the crossover region, their acoustic outputs will not sum correctly in amplitude or phase.

For many designers the greatest drawback of a first-order crossover is that its shallow 6dB/octave slope does not protect the tweeter from the effects of large-amplitude midrange signals. For a constant input level the back-and-forth excursion of any direct radiator doubles with each halving of frequency. (When you divide the frequency by two, the waveform takes twice as much time to complete each cycle, causing the driver to move back and forth twice as far.) When a tweeter is crossed over at 6dB/octave, the crossover slope barely cancels this doubling of excursion. Result: Even though the crossover is at 1500Hz, a blunting trombone fundamental at 500Hz will produce as much tweeter motion as an operatic soprano's high C at 2kHz.

In fact, the trombone may put more strain on the tweeter's power-handling capacity than the soprano does, because its intensity is likely to be
greater. Measurements with a spectrum analyzer show that the greatest intensity levels in musical sound usually occur below 2kHz, which is three octaves above a piano's middle C. This is true even with soprano voices and trumpets; the region above 2kHz is occupied mainly by harmonic overtones. (Tones around 2 to 3kHz often sound especially loud, because that's where the human ear is most sensitive, but there's usually more power at lower frequencies.)

It's no accident that in two-way loudspeakers the crossover is usually placed near 2kHz. With steep crossover slopes, the delicate tweeter carries mainly harmonic overtones and "air" while the high-power musical fundamentals are handled by the relatively robust woofer. (Cymbal crashes and other high-frequency transients can safely be ignored in this analysis because they are too brief to represent a power-handling problem.)

But in a first-order design the tweeter is burdened by strong midrange fundamentals that are only slightly attenuated by the crossover network. At moderate volume levels this may have no effect. But if your taste runs to hard-driving rock or Bruckner symphonies at front-row levels, a first-order speaker may sound harsh and strained when the music should be most thrilling.

I hope that this recitation of the difficulty of using an in-phase first-order crossover hasn't persuaded you that such a design can't be made to work well. It can work splendidly, as several manufacturers have demonstrated. It's entirely possible, for example, that the first-order crossovers in Thiel speakers are partly responsible for their excellent imaging and sonic neutrality, qualities that have won Thiel speakers high praise from reviewers in these pages. But those characteristics have a price, not only in dollars but also in a limited ability to produce very high sound levels in the low bass and at the low end of the tweeter's range. For these reasons most manufacturers, especially those aiming for a broader market than audiophiles, choose to use steeper crossovers. During the '70s an 18dB/octave network was the most popular "high-performance" crossover. In recent years many designers have adopted 24dB/octave Linkwitz-Riley crossover networks, which can deliver a satisfying combination of well-controlled phase behavior and steep slopes for smooth off-axis response and high power-handling.

All loudspeaker designs involve compromises and tradeoffs between desired goals. This, in part, is why loudspeaker designers are becoming excited about the potential of digital signal processing (DSP). A DSP-based crossover can give a speaker designer nearly total freedom to control amplitude and phase characteristics separately. Thus manufacturers will be able to equalize drivers to achieve any desired response without worrying about screwed-up phase response. Achieving a magical combination of accurate amplitude response and linear phase response will be little more than an exercise in computer programming. This is no Land-of-Oz fantasy; it is happening in design labs now.

Studio engineers often equalize recordings to sound "right" through a studio's monitor speakers, sometimes introducing colorations into recordings that are just the opposite of those in the speakers. No two brands of studio monitor sound alike, and every engineer has his personal favorites. Recognizing this, one pro-audio manufacturer has envisioned a new studio monitor whose DSP crossover could be programmed to mimic the sound of any well-known speaker; an engineer could select a JBL sound, or Tannoy, or Quad, at the flick of a program switch. Perhaps a "neutral" position could also be provided, if enough people agreed on what a truly neutral speaker should sound like.
Enough

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Bold listings available in New York exclusively at Sound By Singer.
Letters? Boy, did we get letters last year when we ran the very first "Records to Die For": subscription renewals, subscription cancellations, groveling gratitude, death threats, paeans, pans, madness, ecstasy, invitations to any number of sanity hearings (we sent our regrets)—and that was just from our own staff. How could we not do it again?

And here we go—"Records to Die For II," guaranteed to tickle or offend almost everyone. As in "RTDF I," which appeared just over a year ago in the January 1991 issue, our writers' choices were narrowed down to impeccable performances recorded in topnotch stereo sound. Sounds easy, doesn't it? You never heard such caterwauling as what Stereophile's otherwise intrepid writing stable let fly with as they stampedede for the nearest barn door. "No! No! Don't make me! It's impossible! There are no such recordings! There're too many! Do I have to? Is this required? Can't I just review a little $10,000 speaker or two? How do I choooooooose?!!"

Readers, I was hard but firm, and the results follow. Writers who listed five choices last year got two picks this time around; writers new to "Records to Die For" got to name their full first five. And following this year's new mini-reviews is a master list of all of last year's to-die-for. Next year the master list will also include this year's picks, and the year after that—you get the idea. JA., fretting against the tightness of the rules he helped formulate, has also included a list of his runners-up from last year, all of which, he feels, are good enough to be on the primary list.

Like last year, those recordings that have been reviewed in Stereophile since the birth of the regular monthly music section in October 1987 (Vol.10 No.7) are so noted; ie, a listing ending in "(XI-5)" was reviewed in Vol.11 No.5.

So do your worst—here's our best, in reverse alphabetical order.

—RL

Peter Van Willenswaard
A preliminaryremark. Within the realm of this "Recommended Recordings" series I cannot recommend any of the recordings discussed below in the CD format. Although my writings in "Industry Update" quite regularly deal with digital audio, and quite enthusiastically so because of the interesting and often promising developments in that area, no CD that I know of, played through any DA equipment that I know of, even comes near to what many LPs do to me. I like good CDs, but I love good records. On the occasional evening that I am free of my reviewer's duties and find myself able to switch off that research department in my mind that is always curious why something is as it is or isn't as it should be, and I want to sit back and enjoy music, I play LPs exclusively.

Jacques Brel: à l'Olympia
Français Rufer, Gérard Jouannest, piano; Jean Cori, accordion; orchestra conducted by Daniel Janin
Fontana 858 015 PFY (LP). (Also reprinted as Philips Music for the Millions 6395 216.)

First, a warning. This record usually sounds awful with semiconductor electronics, be they bipolar or MOSFET; I know a few exceptions, but it needs tubes to come alive. Brel (1929-78) was a chansonnier pur sang, in French, but as so many other famous "French" artists he was of Belgian origin and his poetry is unmistakably influenced by his Flemish roots. His live performances were of unequal power; this one was recorded at the Paris Olympia Theatre in 1962. During live performances Brel tends to forget that he is standing before an audience once the song gets emotional (and a lot of his songs do). He doesn't get introverted or sentimental, but cries his heart out, the words leaving his mouth so fast he nearly stumbles over them. As for the sound, don't think of a pin-point see-through stereo image. But everything is there, alive as if it was yesterday and not 30 years ago.

The World of Gilbert & Sullivan: Vol.1
(excerpts)
D'Oyly Carte Opera Company, New Symphony Orchestra of London; Isidore Godfrey
Gilbert & Sullivan: Princess Ida
Sir Malcolm Sargent, Royal Philharmonic Orchestra
Decca SPA 28 (2 LPs). (1969 Dutch pressing, carrying a blue label)

The musical style is in between opera and operetta. Now I'm not usually fond of opera, and I hate Austrian operetta, but I love this. The texts are full of humor and quite sharp; this could almost have been written in the late '50s of this century instead of in the Victorian age. Music and text blend together wonderfully. The performance is splendid, everyone really going for it. Sonics are breathtaking and keep improving with each equipment upgrade. There is another Dutch pressing (released in England) with the more traditional Decca blue and red rings around the label which isn't nearly as good. My recently obtained original recordings from 1959 (like SKL 4081&2 for H.M.S. Pinafore) are dynamically better but slightly noisier than my blue-label excerpt albums.

Stravinsky: Le Sacre du Printemps
Sir Colin Davis, Concertgebouw Orchestra Amsterdam
Philips 9500 323 (LP).

This recording was made halfway through the '70s. Philips was pretty good at that time, but this Sacre sticks out. Very silent pressing and excellent dynamics; exactly what this music needs. And of all the interpretations I have heard, this is the most powerful, the most integrated, the most encompassing. Although it isn't mentioned on the cover, it is almost certainly Volker Straus who recorded this. In a recent interview Straus bluntly confessed making an average of 300 cuts, crossfades, or
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inserts during the mastering of one hour of music (five per minute!). If he did so here, it doesn't show. The sound breathes, the atmosphere of the Concertgebouw is spacious, with very good detail and definition and only very subtle highlighting.

RACHMANINOFF: Piano Concerto 3
Byron Janis, Antal Doráti, London Symphony Orchestra Mercury SR 90283 (LP). (Dutch pressing by Phonogram; it's a Living Presence, so probably produced/engineered by Cozart and Fine)

Another a 1960 recording, and like the Brel mentioned above, very difficult to play back properly. It took me years before it became even listenable. And it's not just the turntable that counts, it's the electronics too—everything. But it's splendid, both in interpretation and registration, although the violins have that typical American touch to the sound that is a bit unusual to European ears. Byron's piano is there, in front of the orchestra, in exactly the right perspective and not blown up larger-than-life. Rachmaninoff's Second seems to have been long considered his most famous, but I have always preferred his Third, which I find infinitely more moving.

BILLIE HOLIDAY: Lady in Satin
With Ray Ellis and his orchestra
CBS CS 8084 (LP, early US pressing) CBS S 52540 (LP, later Dutch pressing)

I have hesitated to add this to the list. Not because it might not qualify, but because I fear abuse. There are only very few records that I consider to be for personal use only. This is one of them. So if you respect Billie Holiday and would happen to be at a demo where someone starts to play this to a random audience, please leave the room. If you know the record, you'll know why.

It's the second stereo record Billie made with Ray Ellis, a year before the end. Her voice is already quite raucous, and breaks from time to time. The almost overly sweet Ellis tenderly complements this. His orchestra is portrayed more in the then-fashionable left-mid-right way rather than in one seamless recording space.

MICHAEL ULLMAN

CHARLES MINGUS: Blues and Roots
Atlantic SD-1305 (LP); Tom Dowd, eng.; Nesuhi Ertegun, prod. AAA. TT: 60:48

In one crucial way, it's more difficult to judge the sound of a jazz than that of a classical recording. To remind one's ears of the ideal sound of a classical performance, one only has to go to, say, Symphony Hall or Carnegie Hall, and listen to the natural sound of an orchestra or chamber group. Go to a jazz club and you frequently hear a jumble of heavily amplified sounds produced by closely miked instrumentalists. What one almost inevitably finds in a jazz recording is not necessarily the sound of a band playing in a natural space, but a more artificial sound. A jazz recording can nonetheless be satisfying if it carefully separates the strands of the music, if it reproduces accurately the tone of each instrument, and if it is satisfyingly balanced. It might also sound spectacular. I remember playing my new copy of Blues and Roots for roommates and interested listeners in the early '60s. Everyone was thrilled by the stereo separation, by the sound of Mingus's buoyant bass, and by the way the recording made each instrument in these rubble-rousing ensembles sound out. I still find Blues and Roots thrilling, and the sound, tape hiss and all, accurately recreates the ambience of a Mingus performance, if not its every detail.

LEE MORGAN: Tom Cat
Blue Note CDP 7 84446 2 (CD). Rudy Van Gelder, eng.; Michael Cuscuna, prod. AAD. TT: 44:19

I choose this disc, a reissue of a 1964 Lee Morgan session, as an example of the work of one of the best engineers recording jazz in the '60s. I could have chosen other records engineered by Van Gelder—records by Jackie McLean, Freddie Hubbard, or perhaps Eric Dolphy. Van Gelder's famous New Jersey studio was evidently a homey place, where he was able to both relax and bring out the best in a generation of musicians. His recordings were typically miked, with clear, and perhaps by today's standards extreme, stereo separation. But the instruments he recorded had their natural bite and definition. Tom Cat is a typical mid-'60s Lee Morgan date, made especially satisfying by the playing of altoist Jackie McLean, pianist McCoy Tyner, and the zinging cymbals of drummer Art Blakey.

COUNT BASIE: For the Second Time
Pablo 2310-878 (LP). Ed Green, eng.; Norman Granz, prod. AAA. TT: 37:68

A few weeks before this album came out (in 1975), I had the opportunity to sit within several feet of bassist Ray Brown. I marveled at the breadth and warmth of his tone, and lamented that his sound had rarely been accurately captured on record. Then this marvelous trio disc, featuring Basie, Brown, and drummer Louis Bellson, came out. It seemed miraculous at the time. Basie was one of the great jazz pianists, but many of us thought his best years were behind him. Live, he rarely soloed. Yet this vividly recorded set of music presented Basie as a pianist in a recording notable for its amplitude and warmth. We seem to hear Basie breathe in the spaces he leaves in his renditions of tunes such as "On the Sunny Side of the Street," one of the wittiest performances on record. We can feel him think; he makes it sound so easy.

MEL TORMÉ & BUDDY RICH: Together Again for the First Time
Century CRDD-1100 (LP). Keith Grant, eng.; Norman Schwartz, prod. AAA.

This 1975 direct-to-disc album captures the punch of a Buddy Rich big band better than any other recording I know, and at the same time offers superior singing by Mel Tormé. Tormé sounds close-up; the band, as it should be, is a little distant. The soloists here include guest altoist Phil Woods and pianist Hank Jones, but Tormé and Rich steal the show. Listening to Tormé sing "Here's That Rainy Day" over the comping of the pianist and the obbligato of Phil Woods, I feel that I might be hearing the band in a concert hall, except that then the noise of a live audience would cover up the gradually spreading splash of Rich's cymbal.

HELEN MERRILL/GIL EVANS: Collaboration
Emarcy 834 205-2 (CD only). Tom Lazarus, Rebecca Everett, engs.; Kiyoshi Koyama, Helen Merrill, prods. DDD. TT: 44:49

Stereophile, February 1992 87
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Don't forget to bring your ears.
This disc illustrates the paradox of jazz recording. Helen Merrill has a small, breathy voice. Amplification made her career—and those of most modern singers—possible. Collaboration begins with Merrill singing "Summertime" in a relaxed, out-of-tempo conversation with soprano saxophonist Steve Lacy. There's a feeling of space between and around them, which is suddenly, and impressively, filled by the large Gil Evans orchestra. Evans was a master orchestrator, and his unusual voicings and instrumentation—"Summertime," for instance, features a flute quartet—has never been better recorded. The depth of the sound is impressive—one hears Buster Williams's warm bass, and also on several tracks the clear reedy sound of a bass clarinet. I admire Merrill's intelligent singing—especially in the context of the marvelous Evans arrangements.

**ALLEN ST. JOHN**

**STEELY DAN:** *Pretzel Logic*

A typically Steely Dan-ish title for Becker and Fagen's most straightforward album. Sure, there's workaday enough for any frustrated English major and musical references that run the gamut from Horace Silver to Charlie Parker. But there's more. From those wind chimes that remind Rikki about that number to those sleigh bells that toll for Charlie Freak, these are truly tender songs in which irony, for once, takes a back seat to feeling. Sonically, it's not as flashy as *Aja*, but Roger "The Immortal" Nichols makes ensemble rock a wonderful thing. My LP pressing is horrendously noisy, but surface grunde aside, it's better than the CD reissue. Too bad MFSL never got their hands on this one.

**RICHARD & LINDA THOMPSON:** *Shoot Out the Lights*
Hannibal HNB1 1303 (LP), HNC1 1303 (CD*). Bill Gill, eng.; Joe Boyd, prod. AAA/AAD. TTs: 38:22, 40:52*  

Have you ever wondered what kind of sound a marriage makes when it falls apart? On their last and best album together, Richard and Linda channel their real-life despair into a majestic song cycle. Comparing the calm beauty of Linda's singing on "Just the Motion" and Richard's anarchic Strat work on the title track will tell you more about the differences between men and women than ten pop psychology books. Due to a nervous tic, many of Linda's vocals had to be patched together, but aside from some extra reverb, there's no evidence of the seams. The CD's a little edgy, but includes "Living in Luxury," a toss-off cut that provides an ironic coda.

**KATE & ANNA MCGARRIGLE:** *Kate & Anna McGarrigle*
Warner Bros. BS 2862, Carthage CGLP 4401 (LPs only). John Wood, eng.; Joe Boyd, Greg Prestopino, prods. AAA. TT: 34:57

The Warners promo pressing of this record I found a few months ago is, in a word, breathtaking. But it doesn't preclude my last year's recommendation of the still wonderful, and still in print, Carthage reissue.

**DENIS STEVENS**

**ENSEMBLE HUELGAS:** *O cieco mondo*
The Italian Lauda, c.1400–1700  
Ensemble Huelgas, Paul van Nevel, dir.

Deutsche Harmonia Mundi 7865–2–RC (CD only). Wolf Erichon, prod.; Andreas Neubrotmer, eng. DDD. TT: 60:53

I began producing broadcasts of early medieval music in 1949 on the UK's BBC Third Programme, and my standards, like its, became almost impossibly high. Because of this background I judge more recent attempts with severity, for beyond the expected excellence of sound quality, I await a superlatively performance allied to program-building of impeccable taste. In this superb 1989 recording there is no single criterion, but there are instead three criteria which I find fully and completely satisfied. The vocal trio and a handful of early instruments emerge with startling clarity and force in such way as to hypno-notice the listener into following the musical and textual message: "O blind world, full of temptations, deadly poison in each of thy pleasures." This is a record about death, and well worth dying for.

**DELIUS:** *Orchestral and Choral Music*
Over the Hills and Far Away, Sleigh Ride, Brigg Fair, Florida Suite, Marche Caprice, Dance Rhapsody No.2, Summer Evening, On hearing the First Cuckoo in Spring, Summer Night on the River, A Song before Sunrise, Intermezzo from "Fennimore and Gerda," Prelude to "Irmelin," Songs of Sunset
Sir Thomas Beecham, Royal Philharmonic Orchestra, Beecham Choral Society; Maureen Forrester, contralto; John Cameron, baritone
EMI CDS 7 47509 8 (2 CDs only). Lawrence Collingwood, Victor Olof, prod.; Christopher Parker, eng. ADD. TT: 2:26:39

Sir Thomas first conducted music by Delius ("Paris: the Song of a Great City") in Philharmonic Hall, Liverpool, on January 1, 1908, in the presence of the composer. His last performance, a movement from the *Florida Suite*, took place at his farewell concert on May 7, 1960 in another British harbor—Portsmouth. Those 52 years, during which Delius's music was never far from Beecham's mind, seem to have imparted something intangible and magical to his interpretations, for they have never been equaled. Always enhanced by EMI's superb sound quality, these two CDs have an ageless impact which must be unique (though sadly, little known) in the entire repertoire.

**BERLIOZ:** *Symphonie Fantastique*
Roger Norrington, The London Classical Players
EMI CDC 7 49541 2 (CD only). David R. Murray, prod.; Mike Clements, eng. DDD. TT: 53:11

Roger Norrington has formed and trained an orchestra reliant on instruments and published tutors of Berlioz's age, with the result that this resplendent score leaps from its fettered frame looking for all the world like a cleaned painting. What we have in this 1989 CD is outstanding. It is new in color, balance, and thought; it has immense assurance and panache, and the overall impression is one of great energy. An almost total lack of vibrato in the strings takes us back to Paris in 1830, and the magical passage beginning at 3:40 in the first movement has never been bettered. The ballroom scene is done with a real sense of style, two Erard harps on each channel, and the four timpani near the end of the *Scène aux champs* suggest a distant storm with a vividness which is well-nigh uncanny. In the March the orchestral sounds are devastat-
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ing and horrendous, while the Finale builds to a stupen-
dous climax. Sonics and interpretation blend perfectly
in this memorable record. (XII-7)

BEETHOVEN: Septet
Vienna Octet
London CS 6132 (LP, 421 092-2 (CD). John Culshaw,
prod.: James Brown, eng. AAA/AAD. TT: 40:47

A remarkable separation of the seven instruments linked
with an appealing warmth of tone gives the illusion that
one is listening to a live performance, and this impression
will be intensified if the lights are turned down. The
spontaneity of the playing contributes greatly to this
effect, and each sound seems to be spread naturally before
our ears. There is a special feeling of presence in the attack
of the clarinet, the "lip" of the horn, and the gruff but
musical double-bass. All in all, a masterpiece both in per-
formance and recording. [I agree.—Ed.]

FRANK MARTIN: Concerto for Seven Winds & Percus-
sion, Études
Ernest Ansermet, Orchestre da la Suisse Romande
London CS 6241 (LP only). James Walker, prod.; Roy Wal-
lace, eng. AAA. TT: 37:29

Both works are haunted by the restless emotional atmo-
sphere which is a feature of atonality, but both also have
moments when the ear senses that a key is being estab-
lished and the listener is more easily able to find his bear-
ings. The Concerto is the easiest approach. Here the color
of the instrumentation offsets the ascetic and angular
qualities of the melodic lines. Of the Études, the second
(pizzicato) movement is both highly original and divert-
ing, while the remainder is not at all difficult to grasp.
Uncompromisingly music of our time, these perform-
ances and recordings are of surpassing excellence.

DON A. SCOTT

JOHN LONGHURST: At the Mormon Tabernacle Organ
Works by J.S. Bach, Clarke, Franck, Gigout, Handel, Heron,
Vienne, Widor
John Longhurst, organ
Phillips 412 217-2 (CD only). DDD. TT: 51:39

This, one of the earliest CDs, still has audio and perform-
ance merit. I spent two days in Salt Lake in the summer
of 1985 listening to the organ, and I'm fairly confident
this CD manages to capture the power of the five-
manual, 189-rank Aeolian-Skinner organ and the Taber-
nacle's unique acoustics. The auditorium is 250' long,
150' wide, and 80' high, with a many-paneled dome. The
acoustics are such that multiple long reflected paths tend
to broaden the pitch of the original note. This also gives
the Mormon Tabernacle Choir its uniquely warm sound.
All performances are topnotch. Particularly outstanding
is the majestic ending of Vienne's Cartillon de Westminster,
which makes all but the best systems cry for mercy.
Overall sound is perfect despite some analog tape noise
on quiet passages.

JEAN GUILLOU: The Great Organ of St. Eustache, Paris
Works by J.S. Bach, Guillou, de Grigny, Liszt, Mozart,
Widor
Jean Guillou, organ
Dorian DOR-90134 (CD only). Craig D. Dory, Brian C.
Peters, engs.; Randall Fostvedt, prod. DDD. TT: 75:11

This entire CD is a sonic blockbuster. However, it be-
cyings begins to tiring musically after one or two playings.
The exception is Mozart's Fantasy in F, K.668, in which
all-out sonic bashes are combined with Jean Guillou's
keyboard skills. This work was designed to get the most
from a small mechanical organ. As played by Guillou,
it also takes the great modern organ of St. Eustache. It
is introduced by a powerful Allegro and ends with a mag-
nificent, climactic speaker-killer. The DDD sound is
very good, but lacks the sheer excellence of the early ana-
log Mobile Fidelity recordings of the Chicago Stadium
organ.

MEDITATION: Classical Relaxation, Vol.2
Works by Beethoven, Fidich, Grieg, Haydn, Massenet,
Ponchielii, Svendsen, Tchaikovsky

Budapest Philharmonic, Andras Korodi; Budapest Strings:
Hungarian State Orchestra, Gyorgy Gyori-vanyi-Ruth; 
Dresden Philharmonic. Herbert Kegel; Franz Liszt Cham-
ber Orchestra

LaserLight 15 687 (CD only). DDD. TT: 52:40

The selections on this LaserLight sampler, mostly of
Hungarian origin, are uniformly involving, and the levels
of skill of the musicians and conductors are at least com-
petitive with those of their US counterparts. The whole
CD produces a mood of serenity and tranquility and will
wring the best from high-resolution playback systems.
Tonal balance, lack of noise and distortion, and other hi-
fi attributes are present in abundance. Most notable is the
Budapest Strings' Beethoven Minuet and Grieg's "I Love
You," played with utmost skill in a well-defined re-
cording.

SMOOTH AND EASY: Hits from the Quiet Storm
Songs by Ashford & Simpson, Peabo Bryson/Robert Flack,
Maze, Tania Maria, Freddie Jackson, Bernard Wright,
Natalie Cole, Melisa Morgan, Peabo Bryson/Natalie Cole,
R.J.'s Latest Arrival

Capitol CDL 57265-2 (CD only). Many engs. & prod.
AAD. TT: 45:05

This is one of the cleanest CDs I have ever experienced.
It demonstrates what good sound reproduction is all
about. When the dynamic power of Natalie Cole's voice
gets to you, you will know your system's right—"smooth
and easy," just as the label says. Essential for the popular
music enthusiast.

MUSICMASTERS CLASSICAL SAMPLER
Works by 21 composers
MusicMasters 60217M (CD only). ADD/DDD. TT: 68:45

The audio quality of low-priced CDs is improving, and
this sampler demonstrates that. It is quiet, and lacks the
quantization noise, common to DDD CDs, usually heard
on the trailing edges of low-level notes. With 21 selec-
tions, all superbly recorded, I don't think you can go
wrong. Band 21, the third movement of Hovhaness's
Symphony 2, is exceptionally clean and smooth, and con-
ductor Dennis Russell Davies conveys involvement in
the mysterious music.

RICHARD SCHNEIDER

WAGNER: Lohengrin
Sandor Konya, tenor; Lucine Amara, soprano; William
Dooley, baritone; Rita Gorr, mezzo; Jerome Hines, bass;
Calvin Marsh, baritone; Boston Chorus Pro Musica,
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I'm amazed by the non-inclusion of this truly audiophile production from 1965 on other "superdisc" lists. There isn't one side in ten which fails to offer a display to thrill those who thrive on the reproduction of dynamic living sound. Braces of trumpets from every distance and per- spective imaginable, antiphonal choruses, avil strokes, the clash of broadswords, and a pealing organ—what more could one want?! Fine singing, superb characterization, and a comfortable repertory company feel, swept along by Leinsdorf/BSO in an orchestral tour de force—all that too.

For the forseeable future it's out-of-print vinyl only wherever such obsessions may be satisfied. In addition to sonic and musical considerations are the purely aesthetic ones, such as excellent liner notes, illustrations, and photographs.

PISTON: Symphony 6
MARTINU: Fantasies Symphoniques
Charles Munch, Boston Symphony
RCA AGL1-3794 (LP only). Lewis Layton, eng.: Richard Mohr, prod. AAA. TT: 49:13

RCA Gold Seal vinyl reissues of the 1970s tend to be undervalued as superdiscs. The recording in this instance was receiving its stereo debut, and is as super as any disc I know. Recent recordings of these two pieces cannot match the incandescent intensity radiated by Munch/BSO in this pair of BSO 75th Anniversary works, and the vintage 1956 Living Stereo production supports the music in the fashion we have come to expect. And you vinyl lovers can have something which remains unavailable to the CD crowd for the time being. For once, it may not cost an arm and a leg. And dig the cover—a photo montage of Munch/BSO, easily Gold Seal's best album cover.

MARKUS SAUER

When I got Richard Lehnen's fax telling me I was invited to contribute to this year's edition of Stereophile's "Recommended Recordings" feature, the first thing I did was to dig out the first installment in the January 1991 issue. I wanted to see what my fellow contributors recommended last year in order to avoid duplicating their choices.

Damn, Miles Davis's Kind of Blue and Weather Report's Heavy Weather were mentioned, as were Andreas Vollenweider's Caverna Magica, Jimi Hendrix's Electric Ladyland, Italian Violin Music on Edition Open Window, Respighi's Pines and Fountains of Rome on Chesky, Ramirez's Misa Criolla with Carreras on Philips, Derek and the Domi noces's Layla, Grace Jones's Nightclubbing, even Sly and the Family Stone's There's a Riot Going On—it's unfair! How can I compile my own list when so many great records from my own collection have already been "taken" by others? And how can this magazine choose a format for its record recommendations that doesn't allow me to put Prince's Purple Rain on my list? If musical excellence were to be allowed to compensate for mediocre sonics, that album would be placed near the top of my recommendations. Oh well, maybe I can sneak in a Led Zep album . . .
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Some music simply takes command of your body and won't let go 'til you've paid with your soul. For me, it's neither the Beatles nor the Rolling Stones—I fell victim to the band that later epitomized rock's darkest debauchery, Led Zeppelin. I'm a sucker for Robert Plant's voice (I even play his solo albums), and the combination of passion, grace, and power in Jimmy Page's guitar playing remains unsurpassed. It's no wonder that John Bonham's forceful drums have been widely sampled, and John Paul Jones's bass provides the perfect base for the group's sound—heavy blues-rock's finest hours.

The sound may be only so-so in absolute terms—no crystal-clear delicate vocals here!—but it is a faithful rendition of a good PA system and continues to improve with hardware advances (especially in my front end). Perfectly illustrating the power and majesty of real rock before it degenerated to heavy metal, this record alone is justification enough for 15" woofers in huge cabinets.

HÉROLD: La Fille Mal Gardée (excerpts)
John Lanchbery, Orchestra of the Royal Opera House, Covent Garden
Decca SXL 2313 (LP, op). AAA.

Ballet music, of which this is an example, often suffers from the same problems as film music: without the action for which the music was intended, it doesn't make much sense. Happily, La Fille Mal Gardée's score stands up well without two dozen peasant girls flashing well-formed thighs at you. It serves nicely as elegant and joyous, if somewhat lightweight, entertainment.

The sonics of this 1962 recording are spectacularly good, even on my modern Dutch pressing (originals are reputed to be better still): excellent orchestral tone, superb shading of dynamics, especially at the soft end of the spectrum, and completely natural perspectives—would someone please force the record companies to use tube mikes again?

MICHAEL ROSS

Paul Desmond Quartet & Jim Hall: The Complete Recordings
Mosaic MR-120 (6 LPs), MD-120 (4 CDs). Ray Hall, Bob Simpson, engs.; George Avakian, Bob Prince, original sessions; Michael Cuscuna, reissue prod. AAA/AAD. TT: 4:38:19 Available only by mail from Mosaic, 35 Melrose Place, Stamford, CT 06902. Tel: (203) 327-7111

To paraphrase Oscar Wilde, "I don't require much from music; the best is always good enough for me." All I require is soul, wit, intelligence, individuality, texture, taste, tension, release, and good tone. In jazz, add a sense of spontaneous composition and adventure, and I'm happy. The Mosaic sessions of Paul Desmond and Jim Hall make me very happy indeed.

Mosaic still releases all of their recordings on CD and vinyl. The sound of both in this set is extremely musical and probably as close as the media will allow. Personally, I prefer the sound of brushes on a snare on the vinyl, and there's lots of brushwork here.

Listening to Desmond and Hall on these sessions is like being at the Algonquin round table, as the two friends toss musical bon mots back and forth. The best is good enough for me; musically and sonically, this is as good as it gets.

John Hammond: I Can Tell
Atlantic SD1852 (LP). Mike Stoller, Jerry Leiber, prod. AAA.

From 1964 to 1966, the legendary songwriting team of Leiber and Stoller had their own record label named Red Bird. Among the label's artists was a blues singer named John Hammond who had achieved some notoriety in folk circles while on Vanguard. By 1967 Red Bird was history and Hammond's only LP was released on Atlantic.

I Can Tell features a core group of Hammond on guitar and harmonica, New Orleans drummer Charles Otis, and Rick Danko and Robbie Robertson (not quite yet of the Band) on bass and guitar.

Hammond performs classics by Muddy Waters, Howling Wolf, Jimmy Reed, and Chuck Berry in a style that is at once absolutely true to the spirit of the originals and wholly his own.

Leiber and Stoller have achieved the near-impossible in capturing all the excitement of ferocious live performances while adding production touches that make the sound of the record as timeless as the music.

The LP is long out of print; find it if you can. It represents a rare occasion when the rawness of the blues met the gloss of pop and both emerged the better for it.

DICK OLSHER

Antill: Corroboree (a symphonic ballet)
John Lanchbery, Sydney Symphony Orchestra
EMI (Australia) OASD 7603 (LP). Barry Smith, eng.; Eric Clapham, prod. AAA. TT: 46:02

John Antill's Corroboree sets out to capture the mood and primal intensity of an Australian Aboriginal dance ceremony. As a small boy Antill had witnessed the wonders of such a dance spectacle on the northern tip of Botany Bay. The memories of that night coalesced much later into a full symphonic ballet.

If you're ready for something different, a musical change of pace, throw this one on your turntable. Dim, or better yet, turn off the lights in your listening room, and inch up the volume control a couple of notches. I guarantee that the rhythms and colors of the Aboriginal will transport you from the comforts of your chair to the midst of brightly painted tribal dancers far away under a starry sky.

The music is heavily dependent on percussive effects for the maintenance of the dance rhythms. The scoring for the percussion is nothing short of amazing: xylophone, vibraphone, bass drum, thora sticks (two hardwood sticks struck together), two cymbals, two gongs, triangle, tambourine, snare drum, slap stick, ratchet, tom tom, woodblock, sleighbells, castanets, sand blocks, Chinese temple blocks, thunder sheet, bull roarer (a cigar-shaped wooden flat attached to a cord at one end and twirled about the head rapidly), a partridge, and a pear tree.

All of the percussion is easy to resolve within an exceptionally vibrant soundstage. The dynamics during the closing "Fire Ceremony" are crushing in their intensity. Warning: beware of the bull roarer during the the climax (the timid are advised to duck their heads). The pressing features fantastically quiet surfaces. Next time you need a vacation to an exotic locale, don't call your
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STRAUSS: Also Sprach Zarathustra
Fritz Reiner, Chicago SO
RCA LSC-2609 (LP). Lewis Layton, eng.; Richard Mohr, prod. AAA.

Never mind the “Dawn” prologue which has become wedded to Kubrick’s epic film 2001. There’s a lot more to Richard Strauss’s Nietzschean tribute than the opening fanfare. There’s hardly a more tonally lush and texturally complex score out there. And for my money, I’d rather have Fritz Reiner on the podium. I can just imagine little Fritz exhorting the orchestra: “Play with inspiration, not perspiration.” Give the man his due. He’s a master at fleshing out the incandescence of a Strauss score. He worked with Strauss for a number of years at the Dresden Opera and conducted the Dresden premiere of Die Frau ohne Schatten.

Some may argue in favor of Reiner’s 1954 recording (also with RCA) as being even more radiant. But it is this recording’s combination of dramatic intensity and textural resolution that makes it the supreme Zarathustra to own and enjoy again and again. Kudos to Mohr and Layton for precisely capturing the perspective of Orchestra Hall. When I put this record on, I’m transfixed all the way through to the final chord. (XI-11)

THOMAS J. NORTON
As I stated last time around, my selections follow a self-imposed criterion: they must be easily obtainable, which largely limits me to CDs. A rather looser requirement on performance might enable me to recommend a number of audiophile recordings; a looser one on sound might, more importantly, enable me to sneak in a recommendation of the 1962 von Karajan Tosca on London LP or CD, the original London cast recording of Miss Saigon, or the astonishing Kleiber Beethoven Fourth (with the Seventh) on, of all things, a Philips video laserdisc, any of which knock me out whenever I hear them. But that is not to be. Therefore, my nominations are:

KENNY RANKIN: Because of You
Kenny Rankin, vocals, guitar, piano; George Young, saxes, flute; Danilo Peres, piano; David Fineck, bass; Dave Ratajakczak, drums; Steve Kroon, percussion
Chesky Records JD63 (CD only). Kenny Rankin, David Chesky, prods; Bob Katz, eng. DDD. TT: 46:27

I have a slight problem in recommending a recording that I heard all the way through for the first time, as I write this, four short days ago. Will it wear well? No matter; the ground rules here are impeccable sound and performance, not timeless classics or definitive (which is not the same thing as impeccable) performances. Judging from the letters received after our similar feature last year, many readers seem to have misunderstood these points. Certainly, some listeners will express a preference for another artist’s rendition of one or another of the old standards on this disc (the selections include several new songs as well). I find the versions here valid, moving, and superbly performed. The recording is first-rate, one of the best from Chesky—no faint praise. If this isn’t purist miking, it is certainly minimalist, and very natural. Unhyped yet immediate sound is the result; Kenny Rankin’s vocals, in particular, have an in-the-room feel. Highly recommended.

Baltimore Consort: On the Banks of Helicon
Early Music of Scotland
The Baltimore Consort
Dorian DOR-90139 (CD only). David Brown, prod.; Craig D. Dory, Douglas Brown, Brian C. Peters, David H. Walters, engs. DDD. TT: 65:40

Many (but not all) of Dorian’s recordings are made in the Troy (New York) Savings Bank Music Hall. Less well known than halls of similar quality in larger cities, this post–Civil War venue is nonetheless ranked by many as among the best (acoustically) in the world. Certainly this recording gives you some idea why; only a somewhat cold quality to the natural reverberation (from the empty hall) detracts from a first-rate sound. Perspective is mid-hall; miking is said to be minimal, and I can believe it. The music is a delightful blend of (early instrument) instrumentals and vocals, the latter largely from soloist Custer LaRue’s pure, silky soprano. Her style is decidedly non-operatic, and ideal for the music. There isn’t a wrong step or a throwaway track throughout the 65 + minutes of music on this disc. Kudos is also due to those responsible for the genuinely informative and interesting program notes—all too rare today. (XV-1)

Bebo Moroni

Lou Reed & John Cale: Songs for Drella
Sire 26205-1 (LP). Lou Reed, John Cale, prods.; Jeremy Darby, eng. AAA/ADD. TT: 54:55

My choice of this record might appear, in terms of sonic quality, somewhat strange. But I play guitar and some keyboards, and I know what the sound of guitar and keyboard is in a living room. I don’t know any other recordings that reproduce the sound of voices, an electric guitar, and some keyboards in the home in such a perfect way. Is it “live sound”? Why not? What is our reference for live sound? A concert hall? Well, that’s only one possibility among thousands. Or are we making a hierarchical division between the many faces of the truth?

The second reason (for sure, in non-hierarchical order) is the music. The Lou Reed/John Cale reunion is something historic for the perfect fusion of two different musical geniuses, and the result is somehow greater than the best of the Velvet Underground. Poetry, delicacy, strength: a masterpiece for gentle and tough people; for intelligent people. (XIV-2)

Ecco La PrimaVera: Florentine Music of the 14th Century
The Early Music Consort, David Munrow, dir.
Argo ZRG 642 (LP). AAA.

The empty space left by David Munrow’s tragic disappearance from ancient music studies and performances has never been filled. Listening to Ecco La PrimaVera, you can understand why. What the original Early Music Consort did is unrepeatable: their historic contributions to the excavation of medieval and renaissance music from the disastrous stereotypes of the recent past. Ecco La PrimaVera is probably David Munrow’s masterpiece, and one of the best-selling records ever made. The rediscovery and performance of the Italian music of the trecento

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is one of the most important cultural events of the late 20th century, and Munrow's care in solving philological problems shows a magic touch in the ability to preserve both musicological needs and musical pleasure. Small but complex timbres accompanied by delicious dissonances, great dynamic contrast, and a splendid attention to the subtle nuances in one of the best Decca/Argo recordings ever.

**ZOLTÁN KODÁLY: Háry János Suite**
**BÉLA BARTOK: Hungarian Sketches, Rumanian Dances**
Antal Doráti, Philharmonia Hungarica Orchestra
Mercury 432 005-2 (CD), SR 90132 (LP). Wilma Cosart, recording dir.; Harold Lawrence, musical supervisor; C. Robert Fine, eng. ADD/AAA. TT: 67:53

There is something in Hungarian (as in Rumanian) music that is very difficult for Western people—and great Western conductors—to understand. It's something in the cutting of tempo: a slight and mathematical strasciatTo (drawing) in batter that contains a big part of the entire charm. I know only a few conductors able to let the orchestra understand and play with this feeling of tempo, and they are all Hungarian. I know only one conductor who could express the whole meaning of this music: the unforgettable Antal Doráti. This is why no one ever reached the quality of his Kodály, Bartók, and Ligeti. That's what everyone can hear in this outstanding performance, this intense and delicate Mercury recording. It's not a spectacular sound, but a very natural one, on the good old warm side. Maybe the most romantic recording ever. (XIV-3)

**THE BEATLES: Sgt. Pepper's Lonely Hearts Club Band**
Parlophone 3C 064-04005 (LP), CDP 7 46444 2 (CD).
Geoff Emerick, eng.; George Martin, prod. AAA/AAD. TT: 39:52

This review could be condensed into just one phrase: this is the most beautiful record in history. Who can say the contrary? But I want to mention the great work of George Martin: first, when he directed the original recording session and found beautiful sounds that no digital workstation can approximate; then, when he remastered the recording in digital. The latter was a mere polishing of the original four tracks, an intelligent polishing that renewed the magnificent of an extraordinary sound. Listen to Paul McCartney's Rickenbacker bass, the woodwinds in "When I'm Sixty-Four," Ringo's drums in "Good Morning." Listen to the musical wonder of the 20th century. . . and you can even forget that on the same album is something called "Within You Without You." Nobody considers it part of this recording. (XI-2)

**PETER W. MITCHELL**

**J.S. BACH: Orchestral Suites 1–4, BWV 1066–1069**
Max Pommer, Neues Bachisches Collegium Musicum—Leipzig
Capriccio 10011 & 10012 (2 CDs only, available separately).
Eberhard Richter, eng.; Bernd Runge, prod. DDD. TTs: 49:45, 45:50

Among the many recorded performances of Bach's French-style "ouvertures," some emphasize the strongly accented dance rhythms in every movement while others stress propulsive energy and exhilarating forward momentum. Prof. Pommer's group, a chamber-orchestra subsidiary of the Leipzig Gewandhaus Orchestra, achieves both. The soloists, including the amazing Ludwig Güttler on trumpet, are uniformly excellent. Using mostly modern instruments, the small orchestra combines the required lightness and agility with satisfying tonal warmth, avoiding the astringency of many original-instrument recordings. And thanks either to sensitive accent mixing or remarkably well-balanced playing, you can easily follow five or six contrapuntal lines at once.

**VARIUS: William Tell & Other Favorite Overtures**
Auber: Fra Diavolo; Herold: Zampa; Offenbach: Orpheus in the Underworld; Reznicek: Donna Diana; Rossini: William Tell; Suppé: Light Cavalry, Poet & Peasant
Erich Kunzel, Cincinnati Pops Orchestra
Telarc CD-80116 (CD only). Jack Renner, eng; Robert Woods, prod. DDD. TT: 62:01

Kunzel's conducting of light classics sometimes lacks the sparkle that Arthur Fiedler and the Boston Pops brought to the same repertoire. No such reservation applies to this disc: each of its performances has a splendid balance of precision and gusto. In particular, Rossini's William Tell Overture grows more satisfying with each hearing—especially the various woodwind solos that precede the famous "Lone Ranger" theme. And while some Telarc discs have had balance problems (boomy bass, cloudy ambience), this disc is a great illustration of why Jack Renner loves to record in Cincinnati's Music Hall. Everything is clear and in perfect balance, demonstrating that spaced-omni miking need not produce vague imaging.

**LEWIS LIPNICK**

**GEORGE LLOYD: Symphony 5**
George Lloyd, BBC Symphony Orchestra
Albany Records Troy 022-2 (CD only). Tony Faulkner, eng.; Martin Compton, prod. DDD. TT: 56:28

One of my colleagues in the National Symphony, Edward Skidmore, discovered this recording, for which I shall remain forever grateful. This five-movement symphonic masterpiece (completed in 1947) comes from the pen of a seriously underrated 20th-century composer. Faintly reminiscent of Vaughan-Williams's pastoral style, with a hint of Richard Strauss's rich orchestral scoring, the Fifth stands as one of the best of George Lloyd's numerous symphonies. Lloyd cleverly weaves a complex yet easily assimilated tapestry of thematic material without getting too verbose or repetitive. This disc is beautifully recorded, without any obvious technical gimmickery. Soundstaging is superb (in spite of the fact that this is a studio recording), with just enough natural ambience to give the music space to breathe. If you don't buy this recording (as well as Lloyd's Symphony 7 on Conifer CDCF-143), you'll be missing a great musical and sonic experience.

**SAMUEL BARBER: Overture to The School for Scandal, Symphony 1**
**AMY BEACH: Symphony in e ("Gaelic")**
Neeme Järvi, Detroit Symphony Orchestra
Chandos CHAN 8958 (CD only). Dan Dene, eng.; Charles Greenwell, prod. DDD. TT: 71:52

Although Samuel Barber may not quite be a household name nowadays, several of his works are regarded as
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models of 20th-century American composition. Both of the Barber pieces on this disc fall into that category, with the School for Scandal taking honors as one of the most oft-performed overtures in the modern orchestral repertoire. Barber’s music is deceptively difficult to play (from my own personal experience), which may explain why most recorded renditions of these two works are mediocre. Not this time. The Detroit Symphony, under Järvi’s superb direction, produces technically perfect and musically dazzling performances. The outstanding playing by the woodwinds and brass deserve special mention. Amy Beach’s “Gaelic” Symphony (the only symphony from this American composer) receives similar treatment. A beautiful piece, both melodically and harmonically, it follows the standard four-movement form, using various Irish melodies throughout, with more than just a hint of Anton Dvorák’s compositional style. This recording was produced at Detroit’s newly refurbished Symphony Hall, and represents about the finest marriage of music and sonics this musician has yet heard.

ROBERT LEVINE

J.S. BACH: Mass in b
Maria Stader, soprano; Hertha Töpper, alto; Ernst Haefliger, tenor; Dietrich Fischer-Dieskau, Kiehl Engen, basses; Münchener Bach-Chor, Münchener Bach-Orchester; Karl Richter
Archiv Galleria 427 155-2 (2 CDs only). Walther Alfred Weller, prod., eng. ADD. TT: 2:03:00

J.S. BACH: Mass in b
Solistos, The Monteverdi Choir, The English BaroqueSoloists; John Eliot Gardiner
Archiv 415 514-2 (2 CDs only). Dr. Andreas Holschneider,Charlotte Kriesch, prods. DDD. TT: 106:22

These two performances of Bach’s monumental B-minor Mass were recorded 24 years apart. The Richter was the first I ever heard, and, like the first of anything good, one always wants it to be as good years later. It almost always isn’t, but this is the exception—it has actually aged excitingly. In 1985 came Gardiner’s—which I did not hear until three years later—and I realized that it was as true to the spirit of the Mass as Richter’s, and just as magnificent. In between were lots of big, modern performances from Karajan, Klemperer, and Shaw, to name three; and many small-scaled, “authentic” versions as well: from Råkin and Parrott (almost tied for “illness”), as well as Harmoncourt and Herreweghe. I liked many of them; Herreweghe’s is gorgeous, one of Karajan’s is smooth as silk, and Leonhardt’s is devotional in the extreme—but only Richter’s and Gardiner’s sound “right.”

They appear to have little in common. The 17-minute difference in the timings of the performances should be a tip-off to something, but isn’t: Richter’s doesn’t seem slow, Gardiner’s doesn’t seem fast. The choral work in each is ravishing, although Gardiner uses, to my ears, about half the number of voices Richter uses. One never feels that Richter’s group numbers through the passage-work despite their numbers; similarly, Gardiner’s bunch never seems undernourished or cursory. The same could be said about the instrumentalists in each, too—both tutti and solo play like they’re on a mission. Solo singing, with the exception of Richter’s Töpper, is topnotch, with Fischer-Dieskau more than making up for Töpper, and Michael Chance singing like an angel for Gardiner. What they have in common, besides simply excellence, is that both touch on the strange combination which should be present in a performance of this work: It should be stirring, pious, exalted, and fancy—all at once. No other conductor and performers get all of these.

The recordings, too, are different. Gardiner’s is warm, perfectly balanced, and realistic, with no gimmicks. Richter’s, on the other hand, features a terrifyingly unrealistic placement of the trumpets—but they’re precisely where you always want them to be, especially if they’re played this gloriously. And every musical sound on each is as clear as a bell, with no interference.

Gardiner’s, by the way, is at A = 415, but with his quicker tempi, it doesn’t miss the brightness of Richter’s A = 440. “To die for?” Well, I certainly wouldn’t want to live without these two.

GUY LEMCOE

VAN MORRISON: Common One

THIS IS THE ONE! Whenever I begin to feel morose over some piddly thing and my system sounds as if poltergeists are pitching horseshoes with the electrons, I clamp this album on my VPI. Calm settles over me and the imp is exorcised as soon as the stylus settles into the groove of the first song and David Hayes’s bass and Mark Isham’s muted trumpet waft about the room and into my head. A sojourn into a man’s soul has begun, and my guide is The Man. Van touches all the bases here, from the introspective “Haunts of Ancient Peace” to the jaunty, quasi-symphonic “Summertime in England.” When Van hits his stride and settles into that imininate groove, there’s nobody performing today who can touch him. NO ONE!! This 11-year-old recording puts to shame much of what you hear in popular music today, with more of the complex web of the music revealed with each system upgrade. Essential!

KODÁLY: Sonatas for Cello, Opp.4 & 8
Lluís Claret, cello; Rose-Marie Cibestany, piano

The unaccompanied Op.8 is timeless, demanding, and important music written in 1915 by the 33-year-old Zoltán Kodály. Not since János Starkér’s legendary (and incendiary) ‘50s recordings has this work received such an impassioned, incandescent, and scintillating interpretation. Claret, unlike most other cellists I’ve heard attempting to make music from this score, “gets” all the notes with an ease which lets the emotion contained in the music bubble up from the innards of his instrument and escape. Composed five years earlier, Op.4 definitely nods its head in the direction of the French Impressionists, especially Debussy. The contrast between the somber, elegiac, and darkly melodic first movement and the sprightly, almost coltish second movement is well conveyed by the performers. At times, it seems they are playing musical “tag” with one another. This recording of sublime composition and distinguished performance is captured in exemplary sound. The recording conveys the airy acoustic of the venue, yet does not get “swarthy.” The images of the soloists are extremely well-focused; their presence in your room is palpable. Each nuance of
Evolution begins when you start walking a whole new line.

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the performance can thus be savored, especially the vivid tonal palette of Clare's glowing cello.

**RICHARD LEHNERT**

SHIRLEY HORN: *You Won't Forget Me*

Shirley Horn, voice; piano; Charles Ables, bass; Steve Williams, drums. With: Miles Davis, trumpet; Buck Hill, trumpet; Branford Marsalis, tenor saxophone; Wynton Marsalis, trumpet; Toots Thielman, harmonica; guitar; Buster Williams, bass; Billy Hart, drums.


Amazing singing—guts, heart, and brains all the way down—quintessential jazz conversation that feels like someone crawled upside your heart to deliver intimate testimony from the inside—that's Shirley Horn, and that's this album. Horn's arrangements of these 14 standards, and her piano/bass/drums trio, are perfect, and how can you resist an album that has both Wynton and Miles, the latter in his first acoustic date in over 20 years?

Sonics are almost untoppable, with fantastic if over-wide piano sound, near-verbatim soundstaging, and the best reverber and cymbal sound CG's ever heard. You won't forget this one. (XIV-6)

**McCoy Tyner: *New York Reunion***

McCoy Tyner, piano; Joe Henderson, tenor sax; Ron Carter, bass; Al Foster, drums.

Chessy JG351 (CD only). Bob Katz, eng.; David Chesky, prod. DDD. TT: 74:37

Back in Vol.14 No.9 I called this "the best 'audiophile' album ever made," and I still think so. The two immaculates are well met here: state-of-the-art mainstream jazz ensemble playing from four men at the peaks of their maturity, captured in what's already become, in just a few years, "classic" Chessy sound: full, rounded, three-dimensional instruments filling a single recording space with music. Tyner is uncharacteristically serene, mellow, laid-back here, to the point that *New York Reunion* almost becomes a Joe Henderson date—of which, as any jazzier will tell you, there can never be too many. Joe's in fine form. A classic all 'round; demonstration quality for students of jazz and sound alike. (XIV-9)

**Igor Kipnis**

BEETHOVEN: Wellingtons Sieg, oder Die Schlacht bei Victo- ria (Battle Symphony), Op.91

ROSSIPI: Partita in F for Two Flutes, Two Oboes, Two Clarinets, Three Horns, Two Bassoons, & Double Bassoon.

SPOHR: Notturno in C for Wind Instruments & Turkish Band, Op.34

Paul Dombrecht, Octophorus.

Musical Heritage Society MHS 512700Y (CD only). Adelheid & Andreas Glatt, Pieter Andreissen, engs. & prods. DDD. TT: 64:41

All written for extended wind ensembles, this unusual repertoire dating from 1785 - 1816 features as its primary interest a splendid reconstruction of Beethoven's infa- mous Wellington's Victory and includes the participation of as many as 32 superb period instrumentalists. The album title, Music for Harmonie and Janissary Band, implies lots of Turkish band noise, and that's what one gets, but that sonic entertainment is not to the exclusion of some really exquisite moments of lesser decibels from Antonio Rosetti (at the late 18th-century Bohemian, Frantisek-Antonin Roessler) and Louis Spohr. Rosetti's hunting-horn finale is just one example of the extraordinary timbres to be heard on this vividly clear and colorful recording originally from the Belgian firm. Accent.

**CHOPIN: 51 Mazurkas, Vols.1 & 11**

Karen Kushner, piano.

Connoisseur Society CD 14181 & 4182 (2 CD only). Patricia A. Duciaume, eng.; E. Alan Silver, prod. DDDD. TT: 66:32, 75:03

The 51 Chopin Mazurkas, those amazingly variegated Polish miniatures, are capable of almost infinite interpretive stances, most of them plausible providing that sensitivitiy to the composer's style and personality exists. With either integral or selected surveys available over the years by such distinguished performers as Rubinstein (three complete sets), Cortot, Friedman, Horowitz, Kapell, and Rosen, it might perhaps seem presumptuous to offer a recorded debut by a virtually unknown New York pianist. Nonetheless, Karen Kushner, a former Adele Marcus and William Masseles student at Juilliard, performs these pieces with such rhythmic verve, poetic sensibility, and spirit that repeated hearings each time reconfirmed my initial impression of delight and enthusiasm. Those familiar with E. Alan Silver's reputation for superbly reproduced piano recordings will automatically know that the present discs set the highest standard.

**Ken Kessler**

**HOWARD TATE: Get It While You Can**

Verve V6-5022 (LP only). Val Valentin, eng.; Jerry Ragovoy, prod. AAA. (A CD compilation is rumored for 1992 release.)

Since music is all that matters, I'm again ignoring the command to put sonics on the same level. To do so is to regard the plate as important as the cake. So on to a for- gotten masterpiece. Tate had (has?) a range rivaled only by Jackie Wilson, and an emotional fire matched only by Otis Redding, overseen by the great Jerry Ragovoy. Tate worked through classic material which you've proba- bly heard performed by Bonnie Raitt, BB King, Joe Willi- ams, and others. But none have matched Tate's intensity. Quite simply the best all-in-one R&B/blues/gospel/funk recording of all time; a primer of black music prior to Sly and Shaft.

**MEL & TIM: Starting All Over Again**


Probably groomed to fill the void created when Sam & Dave split, Mel & Tim suffered unjustly from inevitable comparisons. No, they didn't generate the same electricity; rather, they were smoother and more romantic. But their interplay was the stuff of which great duos are formed, and this 1972 set is filled with tracks (including Sam & Dave's "Wrap It Up") which suit them to per- fection. The title song, recently covered note-for-note by Hall & Oates, is a peerless smoother, while the remaining cuts show the pair's skill with gospel, funk, and good ol' southern soul. Navy a duff moment; only duff Stax sound quality. But the performances are so "real" that you'll just forget about the sibilance...
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BARBARA JAHN

SHOSTAKOVICH: Symphony 11, "The Year 1905"
James DePreist, Helsinki Philharmonic
Delos D/CD 3080 (CD only). John Eargle, eng.; Adam Stern, prod. DDD. TT: 68:17

This performance was my "Building a Library" choice when considering the available recordings of this poignant work (Vol.13 No.4). But rarely, in writing these articles, have I found a recording to be as superlative as a performance (or vice versa) as is this one. Both parameters heighten the forbidding and obsessive story it tells, demanding of its audience the same intense concentration it requires of its musicians. Such engrossing experiences on disc are rare indeed, and it still hasn't been betted.

SARAH WALKER: Cabaret Songs
Songs by Gershwin, Coward, Wright, Duke, Britten, Ives, Mallory, & Dankworth
Sarah Walker, mezzo; Roger Vignoles, piano
Meridian CDE 84167 (CD only). DDD. TT: 61:11

Twenty-seven songs taken from two live concerts have been mixed here to give one of the most entertaining recitals I have ever heard. Inevitably there is audience noise, but it's laughter and applause, for Sarah Walker has those present in the palm of her hand—no one is bored enough to be snoring, or unwrapping a sweet! Few classical artists have found the crossover as successful as this, but then Walker is a witty, larger-than-life lady who has a good time in everything she does. This disc cheers me up every time I play it.

BETH JACQUES

GRACE JONES: Warm Leatherette
Island 142-842 611-1 (LP), -2 (CD). Alex Sadkin, eng.; Chris Blackwell, prod. AAA/AAD. TT: 46:30

This recommendation comes straight from the (Linn-Sondek) turntable of a one-time audiophile guru, where it was praised for its stereo separation, the accuracy of its soundfield, and the faithfuldelivery of aunky Nassau, Bahamas-based Compass Point mix, plus a rhythm kick via legendary Taxi All-Stars Sly and Robbie. At the time Jones's rep as the Queen of the Night in New York clubland was scary monsters for me, but Mary, please, let this grow on you. Jones's vocals owe everything to Marlene Dietrich, her takes (kidney-punching covers on everybody from Chrsie Hynde through Smokey Robinson) to Chris Blackwell, and her charisma to the Paris edition of Vogue. Six feet tall, as subtle as Robert Mapleton, and a class act to her tocs, Jones remains Clarence Thomas's worst nightmare.

ROXY MUSIC: Stranded
Reprise/EG 26041-1 (LP), -2 (CD). John Punter, eng.; Chris Thomas, prod. AAA/AAD. TT: 43:01

Some CD track-end haze and tape flip points, alas, to a cavalier remaster, but don't be one of those folks who wouldn't buy a Cord because it doesn't have an airbag. Fresh from the Golden Age of the British Art School—London, 1973—Roxy's third album is vital archaeology from the days when Eno—replaced here by violin and synth whiz Eddie Jobson—wore feathers and Bryan Ferry wasn't too proud to sing French. Every last effect, note, intonation, tape loop, and thread of musical development was created entirely by human hands. Roxy's genuine article—accomplished musicians who made art when art was style—and the only antidote known to sampling, MIDI, and Paula Abdul. Sitting there in limbo? Crank up "Amazona" and fly, fly away.

J. GORDON HOLT

Because the musical performances I love best tend to be older ones, mostly dating from 1958–70, I have been obliged to settle—as I did last year—for recordings that are merely good enough that they don't get in the way of the music. (Even recordings that good were rare back then.)

Both of my selections are CDs, and I make no apologies for this: Both are much better—sounding than the domestic LPs were. The LPs were released during the time when CBS was into unbearable shrillness; the CDs came out after the major record companies had learned that CD buyers did not like shrillness. (I never heard the English EMI LPs of these; they may or may not have been better than the domestic versions.)

So, on to my recommendations, followed by a few additional ones that constitute second votes for choices by other staffers in last year's "RTDF."

BEECHAM CONDUCTS DELIUS (The Complete Stereo Recordings)
Over the Hills and Far Away, On Hearing the First Cuckoo In Spring, Brig Fair, Florida Suite, Danse Rhapsody No.2, Summer Night On the River, A Song Before Sunrise, Summer Evening, Songs of Sunset, Sleigh Ride, Marche Caprice, Inremiel Prelude, Intermesso from Feminine and Gerda
Sir Thomas Beecham, Royal Philharmonic
Angel CDS 7-47509-8 (2 CDS). Christopher Parker, eng.; Lawrance (sic) Collingwood, prod. ADD. TT: 1:56:20

Delius's unique brand of impressionism owes its popularity to English conductor Sir Thomas Beecham, who found qualities in it that touched him deeply, and spent most of his life championing it. The music of Delius is still recorded today, but Sir Thomas is still its most eloquent interpreter.

These recordings span the period of 1958–63, and are rather variable: The earliest ones are the best, while the later ones barely met my criteria for this list.

Sadly, this compilation does not include some of Delius's greatest works; Beecham never recorded them in stereo, and I can never forgive him for that.

BRAHMS: Piano Concerto 2
Rudolph Serkin, Eugene Ormandy, Philadelphia Orchestra
CBS Odyssey MBK-46273 (CD only). Robert Frost, prod. ADD. TT 47:59

You've probably come to suspect by now that I prefer music that speaks to my heart. This recording does it in spades.

Messrs. Serkin and Ormandy and the Philadelphia Orchestra were products of that early–1900s tradition of music to soothe the savage breast, rather than to stimulate the mind. The result of that collaboration is a triumph of flowing melodies, soaring climaxes, and gorgeous sounds that never fail to move me deeply.

The 1960 recording is okay, albeit a bit on the lean side and short of soundstage information. The massed violins were not quite steely on my system, but could well be on one that's steely to begin with. So the sound is nothing to relish, but it's easy to ignore.

STEREOPHILE, February 1992

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Second Opinions: Last year, Mortimer Frank, Richard Lehner, and Lewis Lipnick chose titles with which I so heartily agree that I want to add my support to their recommendations. These recordings were the Reiner Chicago Barótk Concerto for Orchestra, the Levi/Atlantic Copland Symphony 3, and the Handley/LPO Vaughan-Williams Job.
Right on!

ROBERT HESSON

CHOPIN: 4 Ballades, 4 Scherzi
Earl Wild, piano
Chesky CD 44 (CD only). Ed Thompson, eng.; Michael Rolland Davis, prod. DDD. TT: 69:19

As a Chopin interpreter, Earl Wild has only one peer that I know of, and that is the late, magnificent Josef Hofmann. If I went on for another thousand words, I could not devise higher praise than that. It seems almost incredible that we could have a pianist of this stature and tradition captured in the finest recorded sound I have ever heard. The task of choosing recordings that meet the highest standards of both performance and recording is made ridiculously simple by this disc.

SCHUBERT: String Quartet 14 in d, "Death and the Maiden"
Hungarian String Quartet
Turnabout TV-S 34472 (LP only). No engineer or producer credited. AAA. TT: 37:22

The art of interpretation is raised to such a high level here by the Hungarian String Quartet that it hardly seems to exist at all. There is just the music, pure, direct, and totally self-conscious. The ensemble playing is telepathically perfect, the overall musicianship flawless and, to all appearances, effortless. This music simply rises causa sui before you. The sound is that of a hall slightly favoring dark sonorities, but is clean, clear, and complements the music.

ROBERT HARLEY

DIXIE DREGS: What If
Capricorn CPN-0203 (LP), Polydor 831 836-2 (CD). Ken Scott, eng., prod. AAA/AAD. TT: 40:05

What If remains my favorite record from the obscure, now disbanded Dixie Dregs. This enormously talented band's second album lacks the relatively slick production and better sonics of their later efforts, but its innovative compositions and inspired playing make it their most enduring.

From the opening cut, "Take It Off the Top," there's no doubt about the Dregs' musical roots, compositional brilliance, and technical virtuosity. What follows is an astonishingly diverse amalgam of influences that forges through new musical territory. The addition of strings (Allen Sloan on violin and viola) to standard rock instrumentation—guitar, keyboards, bass, drums—provides a much wider range of expression for guitarist Steve Morse's adventurous compositions. Morse's own playing reflects stunning technique at the service of expression; listen to the contrast between his guitar's evocative wail in the title track and the driving—almost frenzied—
solo in the masterpiece "Odyssey."

As great a record as What If is, I had to include it in this list if only for the record's last track, "Night Meets Light." One of the most beautiful pieces of music ever written, "Night Meets Light" evokes a strange and ineffable mixture of feelings at a depth untouched by any other musical experience.

By the way, the sound is not Audiophile Approved, but conveys the music's values. The drums are big, punchy, and vital, contributing to the record's sense of raw energy. Steve Morse always manages to get just the right amount of edge on his guitar, and Andy West's fretless bass is mixed in perfectly.

I know what you're thinking: a band called "The Dixie Dregs"? "One of the most beautiful pieces of music ever written?" I long ago—at age 14—gave up caring that my unusual musical tastes are ridiculed—especially by those who have never even bothered to listen to the object of their scorn. Dismiss the Dixie Dregs and What If to your musical detriment.

RETURN TO FOREVER: Light as a Feather
Polydor 827 148-2 (CD). Hugh Jones, Richard Manwaring, engs; Chick Corea, prod. AAD. TT: 43:08

This record, from an early incarnation (1972) of Return to Forever, is a showcase for the talents of keyboardist Chick Corea, flute and sax man Joe Farrell, vocalist Flora Purim, bassist Stanley Clarke, and drummer Airto Moreira. More important, Light as a Feather is a classic example of musical synergy, the whole being far greater than the sum of its parts. The affinity between these musicians transcends the mere playing of parts; they are clearly making music together. This spontaneous interaction infuses Light as a Feather with much freshness and vitality.

Much of this dynamic interplay is driven by Chick Corea's electric piano comping. Rather than laying back during the other musicians' solos, Corea takes an unprecedented step forward to become a much more active participant. His contribution spurs on the soloists—especially Joe Farrell—to new levels of intensity. Their interactions during Farrell's extended solos on "500 Miles High" and the title track reveal uncanny sensitivity to each other's ever-changing musical directions. Bassist Clarke and drummer Airto are similarly attuned, providing the tonal and rhythmic foundations for the solo excursions. Clarke never fails to surprise and delight with his technical skill and innovative melodic adventurousness.

Considering that Light as a Feather is nearly 20 years old, the sound is superb, if a little tizzy and forward in the treble. It has an excellent sense of space and depth—listen to the halo of air around Farrell's sax in the title track—and contains layers of fine detail, especially in the percussion.

Light as a Feather sounds as original and special as the first time I heard it 12 years ago. I suspect I will listen to it with just as much enthusiasm in another 12 years.

LARRY GREENHILL

J.S. BACH: The Goldberg Variations, BWV 988
Glenn Gould, piano

STEREOPHILE, FEBRUARY 1992

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Bach's 1742 collation of "keyboard exercises" have great power; Glenn Gould, the Canadian pianist, produced two studio recordings of the work. The 1955 recording, released when Gould was only 23, was sensational, technically brilliant, a kaleidoscope of tonal color, energy, and driving rhythms. Gould's virtuosity was dazzling, and made it possible to ignore his humming, which would have otherwise distracted. Gould continues to hum on this version, made 27 years later, just before he was 50. It is a slower, far more introspective, sensitive, and probing version. His exquisite sense of rhythm and utter precision define each phrase of the music with stunning clarity. Gould's playing recreates Bach's pure, idealized musical forms. The LP is far more involving than the CD, best conveying the richness of Gould's pedal effects, the resonance of the bass, and the silvery tonality of the piano's treble notes. The LP's dynamic range also excels. Listen for the startling and explosive opening of the third variation. This essential recording is the best example of the intimacy, sheer beauty, and emotional power of Bach's keyboard music when recorded by a superb artist in a studio.

RICHARD THOMPSON: Rumor and Sigh

This album, tops in performance and sonics, stands as the most involving and best recorded popular album I've heard in a long time. I can point to it and say, "This CD is as good a sonic source as any LP I own." I can also say, "This is my favorite popular songwriter/guitarist performance; you must hear it." Allen St. John's interview and review (Vol.14 No.10) cover artist and album in detail for those who want to learn more. Unlike most other popular albums, including Thompson's earlier masterpiece, Shoot Out the Lights, I've taken a long time to listen to and learn about the 14 cuts on Rumor and Sigh. For now, I recommend "I Misunderstood," which deftly catches the uneasy, sinking feeling you have when you want to believe someone you also know is being manipulative. Thompson's voice is superb, his irony light but sharp, and the kickdrum and guitar here have the impact of ground zero. My other favorite is "Why Must I Plead," which weaves textures from Thompson's guitar and mandolin, plus a variety of percussion instruments. If your system is working well, you'll hear the silvery shimmering harmonics on the cymbals, and notice that the soundstage widens at the very end of the song. But it doesn't matter what the depth, soundstage width, or imaging quotient are—the song grabs you and steals you away. Allen St. John loved "1932 Vincent Black Lightening," and I'm slowly finding it mysterious and wonderful too. That leaves at least 11 other studio performances on this album to get to know in the future, and makes Rumor and Sigh a very special CD indeed. (XIV-10)

Corey Greenberg
I could see Richard sitting there at the keyboard with his herbal tea and Tipparillos, giggling and stabbing the air with his fingers as he finally figured a way to thwart my using The Sun Sessions in this year's "Records To Die For." WHY WHY WHY? Why did they have to be stereo? Given that "Sound Quality" is merely a tool for the optimal transmission of the musical event, does the mere fact that a recording is monaural render it handicapped in its ability to deliver the goods? Is our esteemed Music Editor, a man I would proudly take a bullet in the ear for, ACTUALLY SAYING THAT STEREO IS AN ABSOLUTE NECESSITY FOR A RECORDING TO BE DUG ON ITS MOST SUPREME TERMS?! Is this the same Richard Lehnert who, paraphrased by JA in the Nov. '91 "As We See It," opines that to be even aware of such a thing as "Sound Quality" means that you can't be moved by recorded music on as pure and open terms as when you were more ignorant? [JA made me do it, Corey—RL] And is all this lather merely a smokescreen so I can stick Elvis Aron Presley's Sun Sessions (RCA CD-6414-2-R), a mono 1954 recording and the most important music in the history of man, in here without breaking the rules? Yes ma'am.

That said, here are my five Records To Die For With Guaranteed Stereo Separation:

THE JIMI HENDRIX EXPERIENCE: Live At Winterland
Rykodisc RCD-20038 (CD), RALP 0038-2 (LP). Mark Linett, eng.; Alan Douglas, prod. ADD. TT: 71:40

This '68 concert recording is far and away the best-sounding live Hendrix available. I was stunned when this first came out; none of the "official" live sets even comes close to sounding as clear and alive as this disc. And my Hendrix bootlegs? HAH!

From the acid-soaked tribute to the just-disbanded Cream of "Sunshine Of Your Love," to the 11 minutes of beautiful, celestial future-blues on "Red House," Live At Winterland is a trip (and I do mean trip) back to a better time. Hard, relentless, funky-butt rocket-ride blues, the coolest power trio ever, and good sound to boot; what else is there in life?*

RED HOT CHILI PEPPERS: The Uplift Mofo Party Plan
EMI-Manhattan CDP-7-48036-2 (CD only). Judie Clapp, eng.; Michael Beinhorn, prod. AAD. TT: 38:18

*Well, this; funkier than their debut and harder than the George Clinton—produced Freaky Styley, ULMFPP is the Chili Peppers' finest hour. This is hard-core, guitar-heavy sexfunk by tattooed surfunks who often play gigs wearing nothing but a white tube sock. Uhm, that's not on their feet, homes.

The sound is pure fists in your face; exactly the way the Chili Peppers sound live! Taken on the terms that the perfect recording should exactly mirror the sound of the live experience, Uplift Mofo Party Plan is a perfect recording.

PROFESSOR LONGHAIR: Rock'N'Roll Gumbo

Oh boyoboyoboy! HAH! THIS IS IT! The baddest, wackiest boogie-woogie whorehouse pie-yanna ever cut, Rock'N'Roll Gumbo was originally recorded in 48 hours back in '74 and released only in Europe; 11 years later (and 5 after the Prof passed away), George Winston (yes, that George Winston!) secured the rights to the tapes and remixed them in the interest of a) better sound, and b) potting up the Prof to his due and prominent level, and the rest is Western History.

This is prime monkey-bone music, the kind of stuff that makes people angry that they've only just discovered it now. From time to time, I may play around a bit, but here, I am deadly serious; until you own Rock'N'Roll Gumbo, you are but half a person. This is the music I want
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ROBERT LUCAS: *Luke and the Locomotives*
AudioQuest AQ-LP10004 (LP), AQ-CD10004 (CD). Allen Sides, Michael C. Ross, engs.; Joe Harley, prod. AAA/ AAD. TF: 43:55

This is the audiophile record of the CENTURY. Whereas *Usin’ Man Blues* was a purist, Blumlein–miked acoustic affair, *Luke and the Locomotives* is all electric, multi-bus–sensibly–miked, and KICKS ASS! Welcome to the sound of REAL DRUMS IN A REAL ROOM. *Everything* sounds real; the Fender P–bass is fat and loose, the guitars are plugged into vintage Fender tube amps, and the whole thing sounds as close to live as it gets. When Joe Harley told me about this session earlier last year, he said that his intention was to let Lucas’s band set up THEIR funky old gear and make THEIR funky old noise; all he wanted to do was point some mikes at them and get it down straight. He did. A must–have.

THE WHO: *Live At Leeds*  
MCA MCAD–31196 (CD only). The Who, prod. AAD. TF: 37:44

Ah, *Live At Leeds*; the greatest live rock album of them all. This is the Who at their absolute performing peak, when everybody in the band–was gobbling speed like caged rodents and hated each other with such passion that even an urbane-dirty like Gentleman Mose Allison’s “Young Man Blues” became an atomic blast of chiming snarl when thrown into their collective midst. And the sound is more than up to it; this is what Who concerts sounded like before Keith Moon died. In fact, the guitar and bass are recorded just as they stood onstage, with Pete’s guitar panned hard right and John’s thunderous bass all the way left; I spent a good part of my adolescence first cranking the balance control all the way right to learn the guitar parts, then all the way left to learn the bass!

MORTIMER H. FRANK

BERLIOZ: *Les Troyens*
Jon Vickers, Josephine Veasey, Berit Lindholm, Peter Glossop, Heather Begg, Roger Soyer, Anthony Raffell, Anne Howells, Ian Partridge, Pierre Thau, Elizabeth Bainbridge, Ryland Davies, Raimund Herincx, Dennis Wicks, David Lemnox; Chorus & Orchestra of the Royal Opera House, Covent Garden; Sir Colin Davis  
Philips 416 423–2 (4 CDs only). Erik Smith, prod. ADD. TF: 4:00:00

Here is one of the monuments of the phonograph: the first complete recording of this towering masterpiece, it conveys the blend of Romantic grand opera at its most flamboyant and Gluck–like Classicism that defines much of the greatness of this remarkably rich and original score. Davis’s direction generates dramatic continuity and tension, and the singing is worthy of the admirable production, which in these CDs can be heard with even greater clarity and impact than in the original 1970 LP release.

MAHLER: Symphony 4
Edith Mathis; Herbert von Karajan, Berlin Philharmonic  
DG 415 323–2 (CD only). Günther Hermanns, eng.; Dr. Hans Hirschl, prod. ADD. TF: 62:23

Karajan offers a gentle, tender projection of a score that benefits from restraint and understatement. The lightness of sonority, the pointed and tasteful application of rubato and portamento, and the avoidance of anything that even hints at vulgarity lend this work an almost other–worldly ethos that perfectly suits its mixture of naivété, lyricism, and sardonic dissonance. This is orchestral direction of the most sophisticated sort, complemented by the expressive, child–like directness of Mathis’s gorgeous singing and the intimate ambience conveyed by DG’s engineering. (I speak for an LP copy, not having heard the CD transfer.)

JACK W. ENGLISH

RIMSKY-KORSAKOV: Scheherazade
Fritz Reiner, Chicago Symphony Orchestra  
Chesky RC4 (LP only). Lewis Layton, eng.; Richard Mohr, prod. AAA.

Everything is as close to perfect here as it gets. Rimsky–Korsakov, the most talented and best known of the Russian Five, has turned the story of 1001 Nights into an extremely colorful and beautifully orchestrated symphonic suite. Fritz Reiner and the CSO give a close to perfect interpretation, with finesse and sensuality, in Chicago’s wonderful Symphony Hall (ca 1960). RCA, at its zenith, captured the performance through the legendary efforts of Lewis Layton and Richard Mohr. But that was 30 years ago. To the rescue have come the dedicated Chesky brothers; they and their team painstakingly created a new release from the original three–track master tapes. The result is a musical and sonic blockbuster in every respect.

RACHMANINOFF: Symphonic Dances, Vocalise
Donald Johanos, Dallas Symphony Orchestra  
Athena ALSW–10001 (LP only). David B. Hancock, eng.; Thomas Mowrey, prod. AAA.

*Symphonic Dances*, a three–part suite written in 1940 and dedicated to Eugene Ormandy, was Rachmaninoff’s final composition. It was scored for two pianos or orchestra. This orchestral performance has—as all dance music should—superb colorations coupled with vibrant rhythms. Johanos and the DSO play with intensity and immense energy in the McFarlin Auditorium of Southern Methodist University. The performance was expertly captured by Mowrey and Hancock for the 1967 Vox Turnabout LP. Athena has come to our rescue by re–releasing this masterpiece with sonics that, if anything, even outdo the original. The excellent soundstaging, superb portrayal of inner detail, and stunning dynamics make this a wonderfully lifelike recording.

MILES DAVIS: Kind of Blue
Miles Davis, trumpet; Cannonball Adderley, alto sax; John Coltrane, tenor sax; Wynton Kelly, Bill Evans, piano; Paul Chambers, bass; James Cobb, drums  
Columbia 26066 (LP), CBS 26066 (LP, Dutch pressing), CK 40579 (CD, not recommended in current version). Ted Macero, prod.; Larry Keyes, eng. AAA/ADD. TF: 45:08

Without doubt, this Miles Davis/Bill Evans collaboration represents the high point of group improvisation, if not the pinnacle of all jazz. The all–star sextet (Kelly filled in for Evans on one track) seemed to be connected at the
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soul for this splendid musical tour de force. Unfortunately, the original recording has been long out of print. While the CD contains the music, I have included this recording because Chad Kasem of Acoustic Sounds has made available a number of Dutch pressings of the LP. There is no multi-tracking, splicing, or overdubs anywhere. The performance is spontaneous and very live.

JONI MITCHELL: *Hejira*

Joni Mitchell, vocals, guitar; Larry Carlton, lead guitar; Jaco Pastorius, bass; Neil Young, harmonica; Tom Scott, horns

As late as 1976, was essentially a commercial flop. It was Joni Mitchell's first exploration into the avant-garde jazz scene, but maintained adequate bridges to her earlier folk and rock roots. This particular recommendation just edges out Joni's splendid *Blue* (1971) and *Rickie Lee Jones's self-titled* 1979 debut. Mitchell's intensely introspective, richly poetic lyrics are of paramount importance. The music is melodically complex and superbly recorded, the powerful and articulate bass foundation of Weather Report's Jaco Pastorius setting the stage. Of particular note is the clarity and cleaness of this recording, which led me to give it the nod over the other recordings I mentioned.

DIRE STRAITS: *Love Over Gold*

Warner Bros. 23728-1 (LP), W2-23728 (CD), Vertigo 6359

Rock performances, even if splendidly recorded, rarely qualify as sonic spectaculars (Pink Floyd's Dark Side of the Moon is a notable exception). Rock performers tend to use a limited set of musical tools, often ignoring such things as dynamics and empty spaces. Not so here. Dire Straits, led by the marvelously talented and creative Mark Knopfler, use plenty of dynamic contrasts as well as an unusually wide palette of tonal colors. Love Over Gold, released between the commercially successful Making Movies and the monstrously popular Brothers In Arms, stands head and shoulders above both of these releases musically and sonically. It is a great recording.

ROBERT DEUTSCH

BERNSTEIN: *Candide*

Jerry Hadley, Candide; June Anderson, Cunegonde; Adolph Green, Dr. Pangloss/Martin; Christa Ludwig, Old Lady; Nicolai Gedda, Governor/Vanderdendur; Della Jones, Paquette; Kurt Ollman, Maximilian/Captain; others. London Symphony Orchestra, London Symphony Orchestra; Leonard Bernstein


As fate (aka the God of Record Reviewers) would have it, I received the new Candide just a couple of days after the missive from RL requesting the "Recommended Recordings" submission. I knew within ten minutes listening that this would have to be one of my additions to the listing. As presented here, Bernstein's score emerges as arguably the best he's written for the theater, and the cast—especially Jerry Hadley in the title role—is hard to fault. Bernstein conducts with sensitivity and panache; the sound is clean, with tremendous dynamic contrasts.

PUCCINI: *Turandot*

Joan Sutherland, Turandot; Luciano Pavarotti, Calaf; Montserrat Caballé, Liú; Nicolai Ghiaurov, Timur; others. John Aldiss Choir, Wadsworth School Boys Choir, Royal Philharmonic Orchestra; Zubin Mehta


Together with the von Karajan La bohème, this seems to me to represent Pavarotti at his best: beautiful, apparently effortless singing, and a sense that he really means what he's singing about (a kind of meta-communication that transcends linguistic boundaries). Sutherland was considered an unusual choice in a role typically sung by sopranos of the Wagnerian mold, but I find her more vulnerable characterization works quite well. Add the ravishingly floated top notes of Montserrat Caballé, idiomatically conducting from Mehta, top-flight '70s London/Decca analog engineering (the CD almost a match for the original LP), and the result is a classic.

JOHN CRABBE

SCHUBERT: String Quartet 15 in G, D887

Juilliard String Quartet: Robert Mann, Isadore Cohen, violins; Raphael Hillyer, viola; Claus Adam, cello

Columbia SAX 2535 (LP). AAA. TT: 42:56.

BEETHOVEN: Symphony 3 ("Eroica"), Coriolan Overture

Roy Goodman, Hanover Band

Nimbus NI 5122 (CD only). DDD. TT: 54:39.

SHOSTAKOVICH: Symphony 5

RACHMANNINOV: *The Rock*

André Previn, London Symphony Orchestra

RCA Victor 86801 (CD only). James Lock, eng.; Peter Dellheim, prod. ADD. TT: 63:00.

BRITTEN: *A Midsummer Night's Dream*

Alfred Deller, countertenor; Elizabeth Harwood, Heather Harper, soprano; Josephine Veasey, mezzo; Helen Watts, contralto; Peter Pears, Robert Tear, tenors; John Shirley-Quirk, Thomas Hensley, baritones; Owen Brannigan, bass; Stephen Terry, speaker; others; William Lang, trumpeter; Choirs of Downside & Emanuel Schools; London Symphony Orchestra, Benjamin Britten


BERLIOZ: *Benvenuto Cellini*

Christiane Eda-Pierre, soprano; Jane Berbié, mezzo; Janine Reiss, speaker; Nicolai Gedda, Derek Blackwell, Hugues Cuénod, tenors; Robert Massard, Raimund Herincx, baritones; Jules Bastin, Roger Soyer, Robert Lloyd, basses; Chorus of Royal Opera House, Covent Garden; BBC Symphony Orchestra, Sir Colin Davis


With only five recordings to nominate from over 30 years of stereo listening, I've decided simply to detail those which I find myself going back to most frequently for stimulation, both sonic and musical.

All but one are now available on CD, that one being the Juilliard Schubert G-major Quartet of 1963, familiar to me (and judged for sound here) in its British LP incarnation, but acknowledged on the label to CBS Epic ori-
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gins. This is a perfect example of how to record a small ensemble for an almost-in-the-room effect: occupying nearly the full soundstage and carrying no more than a wisp of backing ambience, yet never sounding spikily overbright. I do respect the alternative, set-back approach for such music, but this particular recording has always struck me as vividly successful in placing the players just behind the loudspeakers. As for the performance, the work's intense drama and plaintive sadness are juxtaposed here with power and conviction which always bowl me over. I wrote in 1964 that it "should touch the heart and fire the enthusiasm of any Schubert lover," and I stand by that.

The opposite recording philosophy aims to take the listener out into an acoustic set around the players, and this was done with resounding success—employing the simplest of microphone setups—in Nimbus's 1987 Beethoven "Eroica" (XII-I), with the smallish "authentic" Hanover Band recording in a reverberant London church. Played at a decently high level (preferably via Ambisonic decoding or some equivalent, to enhance the "I'm right there" feeling), I find this recording fascinating in its unsophisticated naturalism. Just sample the opening of the coupled Coriolan; quite stunning. And the performances have that indefinable yet decisive feel of being real events, exhibiting a rare vitality and power which puts this "Eroica" at the top of my list despite vast competition.

Having praised a purist, deeply set orchestral recording, my next choice involves a more conventionally balanced, relatively up-front production, albeit contrived in the spacious Walthamstow Assembly Hall: RCA's 1965 Shostakovich Fifth. I keep going back to this as an example of just how splendid a large orchestra can sound via two-channel stereo. Its full-bodied yet brilliant impact and sense of depth within the texture are outstanding, while the massed strings in the Largo are superbly handled. And Previn's performance is masterly.

Finally, two operas: Britten's A Midsummer Night's Dream from Decca (1966), and Berlioz's Benvenuto Cellini from Philips (1972). The composer in the former and Colin Davis in the latter managed to generate such devotion and enthusiasm in their performance, and the two production teams to make such imaginative and dramatic use of space, perspective, and movement in their respective venues (Walthamstow and Brent Town Hall), that these recordings are forever being dipped into. I cannot imagine either the hallucinatory humor of Shakespeare/Britten or the riotous Renaissance kaleidoscope of Cellini/Berlioz ever being better served. The subtly shifting sonic veils in one and the dynamic panorama of the other are irresistible.

Kevin Conklin

BRAHMS: Symphony 1

Jaksh Horonstein, London Symphony


Horenstein's trademark management of tension and release is evident throughout this blistering reading. Unlike Editor Lehner, I wouldn't name it the greatest on record—there are too many contenders for that honor, with Furtwängler and Klemperer/Philharmonia my favorites on CD. Those two recordings, however, cannot compare with the vivid, lucid sound captured by the original Reader's Digest team and the Chesky remastering. One of the first few CDs to convince me that the medium wasn't just hype, but promise as well.

BRAHMS: Piano Concerto 2

Sviatoslav Richter, piano; Erich Leinsdorf, Chicago Symphony

RCA ??? (LP), 6518-2 RG (CD). AAA/AAJ.

Richter's recording, taken shortly after a legendary live performance from the pianist's first US tour, is about as wayward and idiosyncratic as they come. It's also fantastically right, hair-raising in the first movement, lyrical and unashamedly rhapsodic in the slow. Leinsdorf, pinch-hitting for an ailing Fritz Reiner, is completely in sympathy with Richter.

Best part is, you get all the great sound of RCA in Symphony Hall, without the attendant tight-essed and tyrannical Reiner performance. (I haven't heard the CD version.)

Addendum: The Howard Hanson recordings of Ives's Three Places and Symphony 3 have been reissued on Livin' Presence CD. The remastering is as good as I anticipated in my earlier contribution to the "To Die For" list, so this inexpensive, readily available CD must supplant the LP version. Good thing, too, as all my vinyl burned up in the Oakland Hills fire.

Martin Colloms

LAURIE ANDERSON: Strange Angels


Point One, I just like it; it grows on you. Point Two, it has great range and variety. Point Three, it has humor and life. Confident and expressive, Anderson's creative quality stands out from the crowd.

As regards fidelity, that is also very good, with a wide frequency and dynamic range, excellent transients and localization, and fine timing. It is a valuable tool for testing equipment, yet still gives great pleasure after innumerable playings.

J.S. BACH: Orchestral Suites 3 & 4, BWV 1068–69; Concerto Movement in D, BWV 1045; Sinfonia, BWV 29

Roy Goodman, The Brandenburg Consort

Hyperion CD1A65502 (CD only). Tony Faulkner, eng.; Martin Compton, prod. DDD. TT: 52:19

I cannot find adequate critical terms to discuss the music of J.S. Bach; for me, it speaks for itself. The Brandenburg Consort under Roy Goodman provides a believable sound, lively and enthusiastic, yet faithful to the spirit of the works.

On the technical side, Tony Faulkner has provided us with a closer approach to the original sound: lush strings, faithful brass timbres, and a perspective balanced between a purist's sense of distance and the need to preserve enough immediacy to satisfy a wider listening public. The technique for this pure digital recording included
a customized DCS oversampling encoder fed from a Paravicini tube mixer. The microphones were a pair of refurbished tube devices and the Neumann M49; the venue was St. Barnabas, Finchley, North London.

**LES BERKLEY**

So this year the tyrannical goose-stepping Wagnerian, Herr Lehner, decrees we only get to add two more to the heap. That makes it easy, sez I. I'll make 'em both analog LPs, and include one popular and one classical recording. (For the latter, I pick a great Mercury reissue, the Prokofiev Scythian Love for Three Oranges, SR 90003 original issue, reissued as SR 90531 with equally fine pressing quality.) So what happens? Harry Pearson goes and raves all over about this LP. He's right, of course, but he's also made sure you aren't going to find one under a hundred bucks. (My mint copy was $8. Eat your heart out.) Wait for the CD, and instead grab . . .

**BERLIOZ: Symphonie Fantastique**
Charles Munch, Boston Symphony Orchestra
RCA LSC-2608 (LP). Richard Mohr, prod.; Lewis Layton, eng. AAA.

It's true that Munch doesn't really get things going until we're marching to the scaffold, but once he does, look out. The BSO is captured in its golden age with all of that beautiful Symphony Hall ambience. Unlike a lot of the great RCA's, this one has real floor-shaking bass, even on my dogless Red Seal (Shaded Dogs have a dog, why don't Red Seals have a seal?) pressing that I got for four clams. The soundstage goes on forever, the bells are fabulous, and when the double basses dig in, you can hear and feel them. Sure, the Symphonie Fantastique isn't great music, but if it gives Julia Roberts the creeps, it's okay with me.

I also figured it was about time an Emmylou Harris record got into this section; unfortunately, most of them have been treated with the Donivan Cowart Miracle Brightness Enhancer and Bass Remover. Fortunately, there's an exception . . .

**EMMYLOU HARRIS: Roses in the Snow**
Warner Bros WBSK 3422 (LP only recommended). Brian Ahern, prod.; Donivan Cowart, Brian Ahern, Stuart Taylor, engs. AAA. TT: ca 30:00

I reckon somebody must've sat on Cowart at the mastering sessions, and I gather from the "TML" engraved in the run-out area that the sitter was none other than the great Doug Sax. This is the best sound Emmylou ever got, and the gorgeous bluegrass-tinged arrangements ring out clean and clear. ELH was at the top of her form for this record, one she had really wanted to do. At its best, which is damn seldom, country music is about the inherent sadness of the human condition: mess up, and you get into a pathos and unintentional humor. Emmylou walks the line perfectly, and does a few somersaults on the way. The best, a super disc, whatever. Grab it before HP hears it.

**ROBERT E. BENSON**

**STRAVINSKY: The Rite of Spring, Petrouchka**
Sir Colin Davis, Royal Concertgebouw Orchestra of Amsterdam
Philips 416 498-2 (CD only). ADD. TT: 68:53

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**JA'S Prime Cuts**

In my segment of the 1991 "RTDF" listing, I included the contenders for my ultimate choice in each of five categories—Classical Orchestral, Vocal/Choral, Instrumental/Chamber, Jazz, and Rock. In addition to my two new picks, I have decided to invoke Editor's Privilege and list separately in this issue those contender recordings not recommended by other writers. Every one is, in my opinion, truly a record "to die for," reaching a standard of unquestionable excellence in both performance and sound quality.

—JA

**CLASSICAL**

J.S. BACH: Cantatas BWV 106, "Gottes Zeit ist die allerbeste Zeit," and BWV 140, "Wachtet Auf, ruft uns die Stimme!"
Stockholm Bach Choir and Baroque Ensemble, Anders Ohrwall
Meridian E77016 (UK LP, originally a Proprius recording)
BEETHOVEN: Piano Sonata 32, Op.111
James Boyk, piano
Performance Recordings PR-1 (LP)
BEETHOVEN: Violin Sonata 10, Op.96
ENESCU: Violin Sonata 3, Op.25

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David Abel, violin; Julie Steinberg, piano
Wilson Audio W-8315 (LP)
ELGAR: The Sanguine Fun, Falstaff, Fantasia and Fugue in c
Sir Adrian Boult, London Philharmonic
Mobile Fidelity MFSL 200-01 (LP), EMI CDM 7 631332 (CD)
FINZI: Dies Natalis
HOLST: A Choral Fantasia, Psalm 86* Wilfred Brown, tenor; Janet Baker, mezzo; Purcell Singers, English Chamber Orchestra, Christopher Finzi, Imogen Holst*
EMI HQS 1260 (LP); CDM 7 633722 (CD), which couples the Finzi with Herbert Howells's Hymnus Paradisi.
HOLST: The Planets
Sir Adrian Boult, London Philharmonic
EMI ASD 3649 (LP), CDM 7 690452 (CD)
RAVEL: Introduction & Allegro
SATIE: Trois Gymnopédies
FAURE: Panis
Chuck Gerhardt, National Philharmonic Orchestra
RCA RL 25094 (UK LP)
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Erl Wild, piano

Stereophile, February 1992
The Concertgebouw Orchestra conducted by Eduard van Beinum recorded *The Rite of Spring* in 1946 for English Decca, a dynamic performance not too well conveyed by the engineering. The Concertgebouw is an ideal orchestra to perform this music, and it is a pleasure to state that Colin Davis’s superlative 1976 performance has been magnificently served by the Philips engineers, who have wonderfully captured the richness and sonorities of this orchestra playing in their own hall. Sheer orchestral weight and impact are quite stunning; although the reverberation does mask some percussion impact; there still is no question that this is one of the truly great recordings of this music. At mid-price, and with a fine *Perenval* as accompaniment, this is a major issue by any standards, essential for anyone interested in *The Rite of Spring*.

**ARNOLD: Dances**

*English Dances; Scottish Dances, Op.59; Cornish Dances, Op.91; Irish Dances, Op.126; Sarabande and Polka from *Solitaire*

Malcolm Arnold, London Philharmonic Orchestra

Lyrita BRCD 201 (CD only). ADD/DDD. TT: 60:51

Arnold’s mastery of orchestration is exemplified by the works on this superb CD, a repertory that exploits the full resources of the orchestra, accentuated by brass and percussion. His four clever sets of dances are guaranteed audience pleasers, far removed from the rather neurotic complexities heard in his 7th and 8th symphonies. Arnold’s recordings of the *English, Scottish, and Cornish* dances date back more than a decade, and were once available on a Lyrita LP; the *Irish Dances* and *Solitaire* excerpts are recent digital recordings. There is no difference between the analog and digital sound—kudos to Lyrita’s continuing sonic expertise. Arnold’s performances of his own music are zesty, with superlative orchestral playing; the orchestra sounds like it’s having a wonderful time. The *Perenval*, with its snarling brass and bass-drum accents, easily could become a favored demonstration recording for the finest stereo rigs.

**MAHLER: Symphony 4**

Sylvia Stahlman, soprano; Royal Concertgebouw Orchestra, Amsterdam; Sir Georg Solti


Recorded February 20–21, 1961, about a decade before Georg Solti became “Sir,” this performance displays his penchant for brisk tempi, always a basic element of his conducting. To some listeners, this interpretation of the gentle Fourth may seem too fast, but it is a reading of enormous beauty, magnificently played, with Stahlman an ideal soloist in the finale. Sonically the recording is resplendent—rich, defined, silky-smooth strings, brilliant brass, and there is depth to the stereo image as well as presence. Few Concertgebouw recordings since have approached the sonic magnificence of this remarkable release. Immediately after completing this recording, on February 22–23 the same production team recorded the Concertgebouw conducted by Anatole Fistoulari in a suite from Tchaikovsky’s *Swan Lake*, a dazzling performance with stunning sonics. Inexplicably, Decca/London has yet to issue this on CD, although it can be heard on a budget cassette (417 881–4).

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Audiofon 2008-2 (LP, CD)

**VARIOUS: Arturo Delmoni**

Works by J.S. Bach, Kreisler, Ysaye

Arturo Delmoni, violin

Water Lily WLA-WS-07 (LP), WLA-WS-07-CD (CD) (XII–10)

**VARIOUS: The Film Music of Ingmar Bergman**

Works by Mozart, Chopin, Handel, Scarlatti

Kábi Lázár, piano

Progotudes PRO 7829 (LP)

**VARIOUS: Ian Tracey plays the Henry Willis III Organ of Liverpool Cathedral**

Works by Karg-Elert, Bossi, Peeters, Dandrieu, Charpentier

Ian Tracey, organ

Michael Woodward MW 931 (UK LP).

**VARIOUS: Guitar Music**

Works by J.S. Bach, Albéniz, Turina, Sainz de la Maza

Michael Newman, guitar

Sheffield Lab LAB 10 (LP)

**NON-CLASSICAL**

**JOAN ARMATRADING: Joan Armatrading**

A&M AMLH 64588 (LP, CD not recommended)

**JOAN ARMATRADING: Shave Some Emotion**

A&M AMLH 68433 (LP, CD not recommended)

**THE BEACH BOYS: Surf's Up**

Brother RS 6453 (LP), Caribou ZK–46951 (CD) (XIV–2)

**TONY BENNETT: The Tony Bennett/Bill Evans Album**

Fantasy F-9489 (LP), Fantasy/OJC OJCCD–439–2 (CD)

**CLANNAD: Magical Ring**

RCA ALP6072 (UK LP), ND71473 (UK CD)

**DAVID CROSBY: If I Could Only Remember My Name**

Atlantic SD–7203 (LP)

**DIRE STRAITS: Brothers in Arms**

Warner Bros. 25264–2 (CD), Vertigo 824 499–2 (UK CD)

**DONNY HATHAWAY: Donny Hathaway Live**

Atlantic K–40369 (LP)

**QUINCY JONES: Smackwater Jack**

A&M AMLS 63037 (LP), Mobile Fidelity MFCD–776 (CD)

**TAJ MAHAL: Recycling the Blues & Other Related Stuff**

Columbia KC–31605 (LP)

**PINK FLOYD: The Wall**

Columbia PC2–36183 (LP), C2K–36183 (CD), Mobile Fidelity UDCC–2–537 (CD), EMI Harvest SHDW 411 (UK LP)

**PINK FLOYD: Wish You Were Here**

Columbia JC–33453 (LP), CK–33453 (CD), EMI Harvest SHVL 814 (UK LP)

**STEELY DAN: Gaucho**

MCA 6102 (LP), MCAD–37220 (CD)

**ROB WASSERMAN: Duets**

MCA MCAD 42131 (CD) (XII–4)

**WEATHER REPORT: Heavy Weather**

CBS 81775 (LP)
Anyone who has auditioned an isolation type line conditioner has probably been pleasantly surprised by the increases in detailing, soundstaging and musicality available when the noise and distortion associated with AC line hash and spikes are removed. The only drawback to using an isolation transformer is it has to be placed in series with the main transformer in your power amp.

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KORGOLD: The Sea Hawk
Classic Film Scores of Erich Wolfgang Korngold
Charles Gerhardt, National Philharmonic Orchestra
RCA CD 7890 (CD only). George Korngold, prod.; Kenneth Wilkinson, eng. ADD. TT: 70:05

The Sea Hawk was the first release in RCA's Classic Film Score Series, issued on LP in 1972 (LSC 3330). It was a spectacular success, followed by 14 other releases, all presenting some of the finest film scores beautifully played, outstanding sonically. The first CD, Return of the Jedi, was issued in 1983 (14748), followed in 1985 by Sunset Boulevard, featuring music of Franz Waxman (7017). Gerhardt prepared the entire 15-LP series on 12 well-filled CDs; The Sea Hawk was the initial release of the revised CD series. For that CD, some of the Korngold scores are extended with new material added; CD 7890 is a brilliant success in every way. RCA then, inexplicably, decided to issue the series in Dolby Surround Sound which, in spite of RCA's claims, is not, as here engineered, compatible with non-Dolby equipment. Even when played back with Dolby Surround equipment, the encoded recordings are not as good as the originals. There is a marked loss of high frequencies, and bass is not as well defined. RCA has withdrawn all non-Dolby CDs in the Classic Film Series; The Sea Hawk has now been issued on Dolby CD (60863), eliminating the added material as well as much of the sonic quality of the original (the Dolby Sea Hawk is almost 20 minutes shorter than CD 7890). Try to pick up a copy of CD 7890 while there still might be one available—it is an engineering triumph and a sad memento of RCA's ill-advised Dolby trashing of what could have been a lasting Silver Disc tribute to the finest in film music.

TCHAIKOVSKY: The Nutcracker
Boys' Choir of St. Bavo Cathedral, Haarlem, Royal Concertgebouw Orchestra, Amsterdam; Antal Doráti
Philips 6747 257 (2 LPs only). AAA. TT: 83:03

There are many fine recordings of Tchaikovsky's enchanting ballet, but none are superior to this glowing performance of the summer of 1975, Doráti's third recording of the complete score. (His first, for Mercury in 1954 with the Minneapolis Symphony, has yet to be issued on CD; his second, recorded with the London Symphony in the early '60s, has just been issued on Mercury 432 750-2). No other recording boasts the sense of magic heard on this sumptuous account, distinguished by the virtuoso playing of the Concertgebouw. Philip's engineering is extraordinary, beautifully capturing the richness, warmth, and clarity of the Concertgebouw; few recordings in this venue are as effective in depth and dynamic range. This Nutcracker is as close as one can get to a "definitive" performance and recording.

The 2-LP set is magnificent, but for silver Philips has chosen poorly. Instead of issuing the complete Doráti recording (which is infinitely superior to their later digital Bychkov/Berlin Philharmonic version), Philips offers a budget CD (426 177-2) of 41 minutes of excerpts, a CD that could have contained almost the entire ballet. Of course they should have issued the complete recording on two CDs, with an appropriate coupling, perhaps one (or two) of the Tchaikovsky orchestral suites that Doráti and the New Philharmonia recorded so brilliantly in the mid-'60s. The LPs have been deleted. If you can find a set, grab it; it is unlikely now that the entire recording will be issued on CD.

ARnis BALGalvis

SONNY BOY WILLIAMSON: Keep It To Ourselves

This is a U-R-There recording if ever there was one. I don't know what rivets me more: the absolutely compelling performance or the outstanding sonic presentation. If this doesn't transport Sonny Boy into your listening room and give you frequent glimpses of reality, I don't know what will. The harmonica is simply a part of this remarkable artist, and you are sure to be part of the rapt audience. Despite some adventuresome sibilants, and the fact that not all tracks have been created equal, this is a rare treat.

AHMAD JAMAL: Rossetter Road

Bill Brassington should know better than to play me a fantastic CD like this one. It never fails: he rushes in to play his latest discovery—only Apogee's Jason Bloom is better at picking out great recordings—only to have me confiscate it. What are friends for, anyway?

Having heard it a good hundred times by now (it's become one of my test discs), I know that great sonics are not enough to get me through the night. The marvelous musicianship exhibited here is why I've yet to tire of Rossetter Road.

Ahmad Jamal is a master at peaking the intensity of his piano with astonishingly complex chordal crashes. He also has the touch to bring you down to kinder, gentler levels. Superb support from his percussionist, drummer, and bassist make this one of the more remarkable journeys through the world of jazz piano.

No part of the sonic spectrum is missed; the dynamics are exhilarating, and clarity, even during the most exuberant transient outbursts, is impeccable. Kudos to whomsoever handled the air and reverber departments of this studio recording—excellent judgment and good taste.

JOHN ATKINSON

According to the venerable JGH (in whose ears we trust), high-fidelity sound reproduction and classical orchestral music from the Romantic era—approximately from Beethoven's Symphony 9 to Vaughan Williams's Symphony 9—were made for each other. Yet this is the kind of music that I find to be less than well-served by even the highest of high-end playback systems. This might be thought due to the huge suspension of disbelief required to accommodate the image of over 100 musicians and singers at the end of your listening room. It is probably more due, however, to the compromises made by recording engineers to make the immense sound that that many people produce live suitable for playback on a mid-fi system in a domestic room. Both my choices, therefore, are single-carat rather than hen's-egg-sized gems: both are flawless, nevertheless; one is classical, the other unclassifiable (except that it isn't classical).

VIVALDI: Concerti for Wind & Strings
Iona Brown, violin; William Bennett, flute; Martin Gatt, bassoon; Celia Nicklin, Neil Black, oboes; Christopher Hogwood, harpsichord continuo; Simon Preston, organ continuo; Academy of St. Martin-in-the-Fields, Sir Neville Marriner

Stereophile, February 1992

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AUDIO NEXUS

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Stereophile, February 1992
My choice was originally going to be the 1971 Louis Frémaux/CBSO performance of the ballet music from Massenet's *Le Cid*. Originally an EMI Studio Two, SQ-encoded surround-sound recording, it was rereleased as an excellent EMI "Greensleeve" LP in 1977 (ESD 7040). In 1991, Acoustic Sounds' Chad Kassem issued a Doug Sax—remastered LP of this recording (AKLA 522) that *Stereophile's* Robert Hesson went ga-ga over (in Vol.14 No.5). But then I found at an estate sale a mint copy of this all-star Vivaldi collection (for the premium sum of $1.75) to supplement the well-worn copy I've been playing since I reviewed it in *Hi-Fi News & Record Review* nearly 15 years ago. Obviously a sign from on high that I should leave the Massenet for next year.

Someone once said that Vivaldi wrote the same concerto 200 times, and occasionally, to the listener lost in some endlessly over-familiar baroque note-spinning, that indeed seems to be the case. The four works on this classic Argo recording, however, performed from editions prepared by Christopher Hogwood, are as diverse as it is possible to be within the same old *concertino* var-*ripieno* formula. Side two, with the A-minor Bassoon Concerto and C-minor Treble Recorder Concerto (performed here on modern flute), is more emotionally laden than side one, which features two works in the brighter key of F-major: one for oboe, the other, lesser work for oboes, bassoons, horns, and violin. All concerned, however, produce stunningly beautiful, virtuosic performances; were it not for the fact they were soon to be eclipsed by "authentic" recordings from members of the original-instruments movement, these would have become widely feted.

The engineers—Stan Goodall, who was then (and perhaps still is) Argo's house engineer, and John Dunkerley, who went on to find fame if perhaps not fortune by subsequently engineering the commercially successful original-instruments recordings on L'Oiseau-Lyre—have captured the instrumental sounds within the admirably rather washy acoustic of London's St. John's, Smith Square, with a delicious verisimilitude. Before I moved to the US, this was one of my favorite concert venues, its delightful ambience almost always reinforcing rather than fighting the music. On this disc, the sounds are true—the strings, in particular, are luminous—and the individual images of solo instruments are small but precisely positioned within a reverberant dome of sound. The continuo harpsichord is set back, without any exaggeration of its volume, yet it propels the music along to a nicety. True, there is a bit more traffic noise than some might like—St. John's is a mere block away from the Houses of Parliament—but that's something you'd hear live, of course.

This music may not plumb the intellectual depths of Mahler, Brahms, or Wagner, but on its own terms, supported by tasteful and talented engineering, it succeeds completely. A small but perfectly cut diamond.

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3 And who, incidentally, was one of the first professional audio engineers of my acquaintance to own up that the Meridian MCD Pro sounded much better than a stock Philips, meaning that bits can't always be bits.

4 With *Chicken Skin Music* UK sleeve and liner devoid of anything other than pictures of a copulating *mariaque morte*, I put together the band listing from Terry Hounsome's excellent *New Rock Record*, published in 1983 by Blandford Press in the UK. If this book is available in the US—the *Omaha Bee* apparently referred to it as "an insane and magnificent triumph!"—see the jacket—go and buy it now.

RY COODER: *Chicken Skin Music*

Ry Cooder, guitars, mandolin; Flaco Jimenez, accordion; Gabby Pahiniu, steel guitar; Henry "Big Red" Ojeda, double bass; Chris Etheridge, bass guitar; Jim Keltner, drums; Milt Holland, percussion; Oscar Brashear, trumpet; Pat Rizzo, Fred Johnson, George Bohanon, sax; Benny Powell, trombone; Red Callendar, tuba; Bobby King, Terry Evans; Russ Titelman, Herman Johnson, Cliff Givens, backing vocals

Reprise MS-2255 (LP), 2254-2 (CD), KS4083 (UK LP). Ry Cooder, prod. A.AA/ADD. TT: 39:30

I once played this 1976 album, Cooder's fifth and his first to be self-produced, to a friend who dismissed it on the grounds that he wasn't much interested in "country music." Well, a there's nothing so personal as musical taste, and b) he had a point. *Chicken Skin Music* certainly isn't rock, and if this rock guitarist's mix of country swing, Tex-Mex, gospel, and gitar pickin' solicits is, if anything at all, music of the country. (Some would call it "folk" music, but I lost patience with formal folk about the time Pete Seeger and Joan Baez decided that what they were doing was IMPORTANT and SOCIALLY SIGNIFICANT and that their listeners better not forget that fact.)

Opening and closing with arrangements of Leadbelly songs—"The Bourgeois Blues" and "Goodnight Irene," respectively—*Chicken Skin Music* is American music, in some of all its wide variety, gently played with love and respect, as if it were classical music no less. Listen to the parallel-picked guitar chords at the start of "Always Lift Him Up," then the solo, underpinned with soft swept strumming as it stretches the song's structure at the climax of the coda, and you'll hear what I mean. And nearly all these songs end, with coda and cadence, not fade away.

To some, Ry Cooder reached the pinnacle of his exploration into the American people's music ethos with 1978's *Jazz* (BSK-3197/3197-2, LP/CD), but there is a raw edge to *CSM*, underlined by Jim Keltner's crushed-rollon-the-beat set against guitar—back-beat drumming—I still can't believe this is the flamboyant Keltner of *Sheffield Drum Record* fame—that just sets my veins afire. And the emotional temperature reaches its highest point in the "born, born-born" baion rhythms of the drastically altered C&W standard "He'll Have to Go." In my musician days, I played this song night after endless night behind country singers on the UK's USAF NCO club circuit, yet it was only when I heard the compelling unison obligato of Flaco Jimenez's accordion and Pat Rizzo's alto sax that I realized what a fundamentally beautiful piece of songwriting it is, the lyric's bathos hiding an iron fist in the velvet glove: "Put your sweet lips a little closer to the phone / And let's pretend we're together, all alone / I'll tell the man to turn the jukebox way down low / And you can tell your friend there with you, he'll have to go"—this is folk music, not the white-bread intellectualizing of the Weavers' *Reunion* album.

Soundwise, voices and instruments are recorded straight, with minimal processing. Both bass guitar and drums are a little laid-back, with the cymbals set back in the image, but what the heck, the better your system, the better this gem will sound.
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**LARRY ARCHIBALD**

With one record pre-decided upon—*Amazing Grace*—I felt arbitrarily that the second should be one from the classical repertoire. In both the classical and non-classical repertoire I feel the restriction to stereo records is both unreasonable and, more important, irrelevant. It's obvious to anyone who listens to music recorded before 1958 that many of the best performances are available only in mono. However, it's also true that many fine recordings are available in mono. The lack of a stereo spread, and the three-dimensional illusion which can only truly be suggested by two channels (and even better portrayed by more), only eliminates one element of what constitutes good recording. A good recording needs to capture a performance's inner spiritual essence and keep the sound quality from interfering with your perception of that performance. Many mono recordings do just that; their lack of stereo spread constitutes a minor discrepancy. Many excellent stereo recordings incorporate more serious flaws.

Anyway, off the soapbox and on to the recordings. My first choice for the latter has been a companion for nearly 30 years:

J.S. BACH: Sonatas & Partitas for Unaccompanied Violin
Arthur Grumiaux, violin
Philips PHS 2-900 (in mono, PHM 2-500)

These records combine fabulous cover art with music made by an extraordinarily accomplished violinist playing a noble Stradivarius. For those who know Bach, the music requires no explanation. For those who do not, the unaccompanied sonatas and partitas are among the most beautiful, serene, intellectual, and difficult pieces of classical music in existence. They entrance and mesmerize; they're lyrical, they stimulate. I've heard many versions of this music, but of them all, this is the best. Although I haven't seen a CD version of this performance, I recently came across a used stereo LP version at a garage sale, to accompany the mono records I've owned since the early '60s. (In those days I carefully bought mono since I felt that stereo was a newfangled gimmick to get us to buy extra amplifiers and speakers.)

Don't pass it up. But if you can't find this one, spend some time with a version from any famous violinist. This music is difficult to play, and close to miraculous when played extraordinarily, as here. The recording is like the music: naked and austere. You'll be mainlining the purest form of Bach.

**ARETHA FRANKLIN: Amazing Grace**

With James Cleveland & the Southern California Community Choir
Atlantic SD 2-906 (2 LPs), 906-2 (CI).

Everyone should hear and attend to this record, if only you can open your heart to the "real truth" of gospel music (this phrase from the religious narrative which accompanies this music).

Everyone knows that Aretha Franklin is one of the genuinely galactic talents to appear in the latter part of the 20th century. Among many other contributions, the black American community has given us Aretha, Sam Cooke, Marvin Gaye, Billie Holiday, and so many others—many non-black Americans are unaware that black Americans are the Americans best known and loved around the world, not least as musicians. Some readers may also not be aware that, until the age of 18, Aretha was deeply rooted in black church life, particularly gospel singing. You will be after hearing this record.

There are many superb black gospel recordings, but this one combines Aretha with a fabulous live church service (the pictures alone on the gatefold album are worth the price of admission), an excellent choir, a close family friend who is also a fine musician—the Reverend James Cleveland—and Aretha's beloved father, the late Reverend C. L. Franklin. To describe this as a magic combination is an understatement. Congratulations to Jerry Wexler and Art Mardian, who joined Aretha as producers on this record—they have preserved an extraordinary musical event, and we are the beneficiaries. The microphones used are far from neutral, and the recording is a bit raucous in tonal balance, but if it bothers you I'll be glad to buy your LPs (if they're in good condition). I've never done a serious home audition of a piece of equipment without listening to this record; it tells the truth.

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**LAST YEAR'S LIST**

Here are all the recordings listed in last year's "Records to Die For." The letters in parentheses at the end of each listing are the initials of the recommender, followed, where appropriate, by the volume and number of the issue of Stereophile in which that recording was reviewed. For instance: Look at the "BRAHMS: Symphony I" entry, which ends with "(RL) (XII-7)." This means that Richard Lehnhart (that's me) recommended it, and the recording was reviewed in Vol.12 No.7. Happy browsing.

London 414 167-2 (CD only). (Robert Levine)
**BARTOK: Concerto for Orchestra; Music for Strings, Percussion and Celeste**
Fritz Reiner, Chicago Symphony
RCA 5604-2 RC (CD only). (MHF)
**BAX: Symphony 3, Dance of Wild Israel, Paean**
Bryden Thomson, London Philharmonic
Chandos ABRD 1165 (LP), CHAN 8454 (CD). (LL)
**BEETHOVEN: String Quartet 10, Op.74**
Smetana Quartet
Denon C37-7125 (CD only). (MHF)
**BEETHOVEN: String Quartet 14, Op.131**

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36720 (CD only, previously released as LP MS 6012, LP Y 33924). (JGH)
BERLIOZ: Symphonie Fantastique
Sir Thomas Beecham, Orchestre Radio-Diffusion Français
EMI LP or Angel CD, op. (JGH)
BERLIOZ: Symphonie Fantastique
Varujan Kojian, Utah Symphony
Reference Recordings RR-11CD (CD). (TJN)
BRAHMS: Ein deutsches Requiem
Otto Klemperer, Philharmonia Orchestra & Chorus
French EMI 167-01295/6, English EMI SLS 821 (2 LPs).
(Also available on Angel CDC-47238, 2 CD only.)
(The French EMI is much better than the Angel version.) (LA)
BRAHMS: Symphony 1
Jascha Horenstein, London Symphony
Chesky CD19 (CD only). (RL)(XII-7)
BRITTEN: Noye's Fludde
Norman Del Mar, English Opera Group Orchestra
Argo ZRG 2339, rereleased as ZK-1 (LP only). (MC)
BRUCH: Collected Works for Cello & Orchestra
Julius Berger, cello; Antoni Wit, Polish National Radio Symphony
eds 6060 (CD only). (DO)
BRUCKNER: Symphony 9
Bruno Walter, Columbia SO
CBS/Sony 20AC 1829 (LP). (KC)
CHADWICK: Symphonic Sketches
Howard Hanson, Eastman Rochester Orchestra
Mercury Living Presence LP. (JGH)
COPLAND: Appalachian Spring
Aaron Copland, Columbia Chamber Orchestra
Columbia M-32536 (LP), MK-42431 (CD). (Robert Hessen)
COPLAND: Symphony 3, Music for the Theatre
Yoel Levi, Atlanta Symphony
Telarc CD-80201 (CD only). (RL)(XIII-3)
CORELLI: Concerti Grossi, Op6 Nos.1-6
Nicholas McGegan, Philharmonia Baroque Orchestra
Harmonia Mundi HMU 7014 (LP), HMU 907014 (CD).
(AB) (XIII-6)
DAVID DIAMOND: Symphonies 2 & 4, Concerto for Small Orchestra
Gerard Schwarz, Seattle Symphony, New York Chamber Symphony
Delos DE 3093 (CD only). (GE) (XIV-1)
ELGAR: Cello Concerto, Sea Pictures
Jacqueline du Pré, cello; Janet Baker, mezzo-soprano; London Symphony, Sir John Barbirolli
EMI CDC 7 47529-2 (CD), English EMI ASD 2764 (LP, coupled with the Delius concerto). (PWM) JA
HANDEL: Water Music
Nicholas McGegan, Philharmonia Baroque Orchestra
Harmonia Mundi HMU 907010 (CD only). (RH, Robert Hessen) (XII-7)
HANDEL: Water Music
Trevor Pinnock, The English Concert
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Minoru Nojima, piano
Reference Recordings RR-25 (LP), RR-25CD (CD). (PWM) (XI-4)
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Bruno Walter, Columbia Symphony
CBS MK 42031 (CD only). (JGH)
MAHLER: Symphony 3
Jascha Horenstein, London Symphony
Unicorn UN2-75004X (2 LPs). (LA)
MAHLER: Symphony 5
Eliahu Inbal, Frankfurt Radio Symphony
Demon 33CO-1088 (CD only). (GAG) (X-8)
MAHLER: Symphony 8
Klaus Tennstedt, London Philharmonic Chorus & Orchestra
Angel CDCB-47625 (2 CD only). (Robert Levine) (XI-1)
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Gianandrea Gavazzeni, Royal Opera Chorus, Orchestra of the Royal Opera House, Covent Garden
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WAGNER: Lohengrin
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Stereophile, February 1992
Mark Levinson No.30 Reference Digital Processor

Robert Harley

20-bit digital/analog converter. Frequency response: 10Hz-20kHz, +0dB, -0.2dB. THD: 0.003% at 1kHz, 0dB, A-weighted. Dynamic range: 98dB or better. S/N ratio: 105dB. Channel separation: better than 110dB. Intermodulation distortion (IM): < 0.005%. D/A conversion: two custom 20-bit DACs. Digital filter: 8x-oversampling. Analog filter: Bessel-tuned low-pass, linear phase to 40kHz. Low-level linearity: deviation unmeasurable to below -70dB, approximately +1.7dB below -90dB, undithered, referenced to 0dB at 1kHz. Output impedance: < 6 ohms. Inputs: five AES/EBU on XLR connectors, two Toslink (EIAJ) optical inputs, one AT&T ST-type optical input. Digital outputs: two AES/EBU on XLR jack, one optical on Toslink jack. Analog outputs: one unbalanced stereo pair on RCA jacks, two balanced stereo pairs on XLR jacks. Dimensions: 19" W by 7" H by 15⅞" D (No.30 converter, including towers), 15⅛" W by 4" H by 14¾" D (PLS-330 power supply). Weight: 89 lbs (shipping). Approximate number of dealers: 65. Price: $13,950. Manufacturer: Madrigal Audio Laboratories, Inc., 2081 South Main Street, Middletown, CT 06457. Tel: (203) 346-0896. Fax: (203) 346-1540.

Over the past two and a half years, I've auditioned and reviewed a number of digital audio products. It has been a fascinating experience both to watch digital playback technology evolve...
and to listen to the results of various design philosophies. The road to more musical digital audio has been a slow and steady climb, with occasional jumps forward made possible by new techniques and technologies. Making this odyssey even more interesting (and confounding), digital processors seem to offer varying interpretations of the music rather than striving toward a common ideal of presenting what’s on the disc without editorial interjection.

As more and more musical information is revealed from my CD collection by these higher-resolution digital converters, I’ve wondered just when improvements in playback technology will become superfluous. Given the CD format’s intrinsic limitations—16-bit word length and 44.1kHz sampling rate—and less than ideal A/D converters used in recording or mastering, there must be a point beyond which more and more sophisticated D/A converters are meaningless. The audiophile’s increasingly powerful microscope can’t resolve what isn’t encoded on the CD.

Just how much more music is on our CDs waiting to be revealed by better D/A converters? This question is of paramount importance. If the answer is “very little,” all our treasured music on CD will never sound much better than it does today, regardless of heroic efforts by high-end designers.

This is indeed a grim scenario.

On the other hand, what if our CDs contain wealths of musical information just waiting to be uncovered? This is the music lover’s dream; our favorite music would have the potential of offering a far greater musical experience than we have previously imagined. Further, our large financial investments in CDs would be much more worthwhile if they contained the hidden treasure of greater musicality. Although I strongly believe that large improvements in CD sound can be gained by better A/D converters at the recording end of the chain, I’ve been pessimistic about the potential of better digital playback technology alone to make CD more musical.

This question has a significance far beyond this generation’s musical enjoyment; many analog master tapes of priceless recordings are lost, intentionally destroyed, or become unusable with age. Assuming that humanity 100 years from now listens to the same music we listen to today, the amount of information encoded on digital master tapes and CDs establishes the limits of musicality for all future music lovers.

But how is it possible to resolve this question of CD’s potential for better sound? There is only one way: listening to higher- and higher-quality D/A converters. With each incremental improvement, we are allowed a little wider peek into the CD format’s possibilities. This is one reason why I’m so fascinated by high-end digital playback.

Now, about what this discussion has been leading up to—the new $14,000 Mark Levinson No.30 Reference Digital Processor. While other processors have provided narrow glimpses into digital’s musical potential, the No.30 throws wide open the door on what digital audio can achieve.

And the view is stunning.

INPUTS, OUTPUTS, & FUNCTIONS
A report on the No.30 is by necessity long and technical; the unit’s innovative and elaborate design warrants nothing less than a full discussion. For those not inclined to bear with me through the techno-nerd stuff, I’ve separated it from this description of the No.30’s inputs, outputs, and functions.

From the first look at the No.30 it’s apparent that the processor represents a monumental design effort. Consisting of two parts, the PLS-330 power supply and the No.30 processor itself, the system looks and functions like no other D/A converter. The processor’s appearance, industrial design, and user interface are works of art in their own rights.

The thick black front panel is flanked by two 7⅛”-tall “towers” that run most of the unit’s depth. Further adding to this striking visual design, the front panel is curved outward, giving the almost subliminal impression of an invitation to use the controls. The front-panel portion recessed by the curvature holds the engraved and white lacquer-filled Mark Levinson logo and model number, along with a round button that puts the unit in “standby” mode.

A large alphanumeric LED display commands most of the front panel. The display provides an unprecedented level of feedback to the user. In addition to indicating which of eight digital inputs is selected, the display also names the digital source. For example, if we had a two CD transports, a DAT machine, Digital Audio Broadcast (DAB) receiver, LaserVision player, and an additional auxiliary digital source, the designations “CD1,” “CD2,” “DAT1,” “DAB1,” “LV1,” or “AUX1” would be displayed when the appropriate input is selected. Each of these “aliases” can be assigned to any input by the user through.
DIP switches inside the chassis.

The display has other clever touches. When switching between digital sources (from DAT1 to CD2, for example), the display reads "DAT1 MUTING," then "CD2 LOCKING," and finally "CD2 44.1KHZ." If no digital audio source is connected to the input selected, the legend "NO DAS" is displayed after the source name. This cycle, which takes about four seconds, is accompanied by a fade-down of volume of the previously selected source, total output muting, and a fade-up of the new source. Nice.

The No.30 can accommodate up to eight digital sources, corresponding to the row of buttons marked 1 through 8 below the display. Three other identical pushbuttons grace the front panel: polarity inversion, display intensity (three levels plus Off), and a digital record select button. This last function allows recording of one digital source while listening to another. Pressing the record select button changes the display to show which source is connected to the No.30's digital output—"RECORD CD1," for example. After pressing the record select button, an input-select button can be pressed, sending it to the record output jack. The display returns to normal after a few seconds.

Three small red LEDs indicate when absolute polarity is inverted, if the selected digital source has a copy-prohibit flag, and if the digital source conforms to the professional AES/EBU digital audio interface specification.

AES/EBU? Don't consumer digital processors and transports use the S/PDIF digital interface? Yes, but Madrigal is trying to change that for high-end products: the No.30's five electrical digital inputs are all XLR jacks, and designed to accept the full AES/EBU-specified signal1.

The two formats, however, are more similar than different. Both use identical coding, clock recovery, and data frame structure. The consumer version is unbalanced, typically carried on an RCA-terminated cable; the AES/EBU spec calls for a balanced signal with XLR terminations. The other significant difference is voltage: S/PDIF is typically a 0.5V signal, the AES/EBU signal about 5V2.

Madrigal believes the AES/EBU interface offers higher sonic quality than the S/PDIF. I confirmed this in my Vol.14 No.5 review of

Madrigal's AES/EBU-equipped Proceed PDT transport and PDP digital processor. No transports other than the PDT (and a few professional models) include AES/EBU output. By mid-1992, however, Madrigal will introduce the AES/EBU-equipped No.31 transport as a companion to the No.30.

Besides the five XLR electrical digital inputs, the rear panel contains two Toslink optical inputs and one AT&T ST-type optical jack. The Toslink inputs (also known as EIAJ optical) were included for compatibility with other products. The Japanese mass-market manufacturers are rapidly eliminating RCA digital output jacks in favor of Toslinks. The motivation is pure economics: virtually everyone in High End agrees that the bandwidth-limited Toslink is markedly inferior to electrical and ST-type optical. Serious listeners are therefore advised to use the ST optical input.

The other rear-panel connections include two "Communications Ports." These will permit communication between other Mark Levinson 30-series products for greater user control. For example, when using the No.31 CD transport with the No.30, pressing Play on the transport will automatically switch the No.30 to accept the transport's digital signal.

Three digital outputs for driving digital recorders are provided, two XLR and one Toslink. Two of the outputs (one XLR, one Toslink) are in parallel, selected by the record output selection feature described earlier. The signal being listened to appears at the third output, regardless of which source is selected to drive the other two digital outputs. A two-conductor DC input jack finishes off the main chassis's rear panel.

Analog outputs are found on the towers on either side of the main chassis. Unbalanced signals appear on a single pair of RCA jacks, and two stereo pairs of balanced outputs are provided on XLR connectors. Each tower has a DC input jack for connection to the power supply. The PLS-330 supply connects to the No.30 via three DC supply cables: left analog, right analog, and digital supplies.

Overall, the No.30's flexibility in accommodating various digital input formats is un-

1 AES/EBU stands for the Audio Engineering Society and European Broadcast Union, the two organizations that established the standards for digital audio interfacing. The consumer S/PDIF interface (Sony/Philips Digital Interface Format) is a subset of the AES/EBU transmission format.

2 There is a debate in the engineering community about balanced and unbalanced digital interfaces. The debate has nothing to do with sonic qualities: the general belief is that all digital interfaces sound the same provided they don't introduce data errors. Instead, the debate is over the two transmission types' relative electrical performance. Although the official standard is balanced, many engineers have argued that digital audio signals should be treated like any other wide-bandwidth signal and be transmitted through an unbalanced coaxial cable.
precedent. In addition, the user interface, with
direct input-selection buttons, fade-up/down
muting, and visual display, provides complete
and easy control over what could have been a
difficult product to operate.

**TECHNICAL DESCRIPTION**

As sophisticated and elaborate as the No.30's
industrial and ergonomic designs are, Madrigal
pulled out all the stops for the circuitry. The
No.30 uses techniques and components never
before seen in a digital product. Further, the exe-
cution and build quality are extraordinary, even
by Madrigal standards. Without question, the
No.30 is an engineering tour de force, intended
to be a true reference product for many years.

Let's start with the PLS-330 power supply. No
other audio component I've seen has had such
attention and money lavished on the supply
($4000 of the $13,950 retail price is in the PLS-330).

The PLS-330 contains three main supplies:
analog left, analog right, and digital. These cor-
respond to the three DC supply cables connect-
ing the PLS-330 and No.30. The analog supplies
are dual-mono construction, running the PLS-
330's length on either side of the chassis. The
digital supply is a switching type, located between
the analog boards. A switching supply was cho-
sen for the digital electronics because of its greater
efficiency. The No.30 is packed with current-
consuming digital electronics, necessitating the
high-current (45W peak) switching supply. To
prevent switching noise from getting into other
electronics, the switching supply is isolated by
an RF shielding can, and digital and analog sup-
ply grounds are separate. The switching supply's
+8V regulated output is regulated again inside
the No.30 to +5V for the input receiver and
digital filter, and by a second 5V regulator for all
drivers, logic arrays, and support circuitry.

Each linear analog supply (left and right chan-
nels) provides regulated +8VDC and ±20.5V
at the PLS-330 output, which is regulated a sec-
tend time inside the No.30. The +8V powers the
digital interface in the UltraAnalog DAC, the
analog output muting relays, and the digital input
receivers. The ±20.5V is re-regulated to ±15V
to supply the analog output buffer circuitry and the analog portion of the DACs.

"Regulation" can apply to a wide range of
implementations, from a simple shunt zener
diode to an ultra-sophisticated multi-component
discrete system. The PLS-330's regulation definitely
falls into the latter category. Instead of using just
a three-pin IC regulator, the PLS-330 features
elaborate "discrete hybrid" (ICs with discrete
components) circuitry. The analog supply regu-
lation includes three separate sections: a voltage
reference stage, voltage gain stage, and an out-
put current gain stage. Each of these sections
requires extensive circuitry—reflected in the
PLS-330's size and weight. I won't go into fur-
ther detail, but suffice it to say that this level of
regulation is unprecedented in a Mark Levinson
product, and perhaps in any audio product. Note
that this extraordinary regulation within the
PLS-330 is supplemented by additional regula-
tion in the No.30 processor. In the case of the
audio circuitry power supply, the elaborate dis-
crete hybrid regulation stage is *repeated* in each
of the No.30's analog stage towers.

Removing the No.30's top cover revealed a
design and implementation never before seen in
a digital processor. In addition to the extensive
logic circuitry needed for the No.30's front-panel
display, the treatment of the audio signal—in
both digital and analog domains—is extraordinary.

The No.30's main chassis holds three pcb's,
stacked one atop the other. The bottom board is
the Digital Input Module (DIM), the middle is
the No.30's microprocessor-based control sec-
tion (CPU), and the top board holds the input
receiver module, digital filter, and associated
components, called the Digital Signal Processing
(DSP) board.

Starting with the input stage, each digital input
is transformer-isolated and has a dedicated line
receiver. Transformer isolation prevents the No.30's
grounds from becoming polluted with the source
component's noisy grounds. The balanced AES/
EBU signal is converted to single-ended for noise
rejection, and a custom circuit prevents noise in
the digital signal from falsely triggering the
receiver. The regulated +8V from the PLS-330
is re-regulated down to +5V by two regulators
on the input board.

The microprocessor board is based on a Motor-
ola 68HC11 CPU and two programmable logic
arrays. System software is contained in a remov-
able Erasable Programmable Read-Only Mem-
ory (EPROM). All the input selection functions,
display writing, and digital filter control are per-
formed on the microprocessor board. In addi-
tion, some digital filter and S/PDIF decoder
module functions are software-controlled. The
socketed EPROM allows easy software changes
in the field.

Audio processing is done on the top board.
This includes S/PDIF decoding and clock recovery, digital filtering, and formatting the audio data for presentation to the DACs. A good example of the No.30’s no-compromise approach is the S/PDIF decoder. In most processors, this is a Yamaha or Philips chip that receives and demodulates the incoming digital signal, generates a new clock, strips out the subcode, and presents audio data to the digital filter. This circuit block is generally considered a weak link in the chain; the clock recovered by this technique is prone to jitter (see the sidebar to my review of the Linn Karik and Numerik last month). Rather than accept the compromised performance from off-the-shelf chips, Madrigal, in association with UltraAnalog, designed a whole new circuit called the Digital Audio Input Receiver (DAIR). This circuit is a combination of discrete and monolithic components encapsulated in a 2" by 3" module. The DAIR features three Phase Lock Loops (PLL), each optimized for one of the three input sampling frequencies (32kHz, 44.1kHz, 48kHz). Using a dedicated PLL for each frequency provides a much narrower frequency “window,” reducing jitter in the recovered clock. The DAIR’s recovered clock jitter specification is less than 100ps (picoseconds), about 30–50 times lower than conventional S/PDIF receiver chips in standard implementations.

Audio data from the DAIR is input to an NPC 5803 8x-oversampling digital filter chip. Considering the No.30’s goal of being a true reference product, I was surprised by the use of a conventional digital filter. Other high-end converters—Wadia, Theta, Krell—take the massive oversampling approach to their digital filters, realized with powerful DSP chips and custom filtering algorithms. Nevertheless, I was intrigued to hear how the No.30 performed without such an elaborate digital filter; it may point the way to what’s important and what’s not in digital processor design. Madrigal contends that the digital filter is not that important sonically compared to other circuit elements. In addition, they assert that very high oversampling rates increase demands on the jitter specification, and can actually degrade performance because of limitations in current jitter-control techniques.

In addition to filtering the digital signal, the NPC chip performs de-emphasis and ramps the volume up and down when switching inputs, both in the digital domain. When the front-panel polarity inversion switch is pressed, the NPC quickly ramps down the volume, a PAL inverts polarity, then quickly ramps it back up again. This prevents a “pop” from appearing at the output.

The single-ended digital filter output is converted to a differential signal (positive and negative) by a programmable logic array on the DSP board. Each phase is then split again before transmission to the D/A conversion and output-stage towers. This creates four signals: inverted + and – and non-inverted + and –. The “double” differential signal is then converted back to a single differential signal in the towers for conversion by the DACs. The first phase split creates a balanced signal for differential conversion by dual DACs. The second phase split is merely to protect the digital signal from degradation as it travels between the DSP board and the towers.

Perhaps the most unusual aspect of the No.30’s design is the two towers that contain the D/A converters and analog output circuitry. Besides giving the No.30 its distinctive look, there were some important engineering reasons for isolating the analog circuitry from digital signal processing and control signals. The towers are virtually immune to radiated noise, both by their shielding and by their distance from the digital electronics. More important, however, are the thermal conditions under which the critical conversion to analog takes place. The towers were very carefully designed to maintain a constant high temperature, unaffected by the outside temperature. Further, no temperature variations exist within the towers that could affect D/A conversion. The enclosed modules maintain a carefully chosen thermal balance between the module’s large heatsink and its internal heat-generating components. Because the modules are too hot to touch, they are surrounded by the black outer chassis.

Madrigal strongly believes that thermal gradients around the DAC severely degrade conversion accuracy. When considering that the Least Significant Bit (LSB) in a 20-bit system produces an output voltage on the order of a few µV, it’s plausible that temperature stability plays a large role in accurate D/A conversion.

Each tower contains analog supply-regulation stages, a dual DAC, and an output buffer. The ±15V regulator is a discrete hybrid stage identical to that found in the PLS-330. D/A conversion is performed by two UltraAnalog C009 dual 20-bit DACs custom-made for Madrigal. One dual DAC per channel is used for true differential operation. The double-differential signal from the DSP board is converted to a single-differential signal on a small sub-board.
within the tower.

The analog output stage, mounted on a Teflon pcb along with the DACs, is an all-new discrete circuit that, according to Madrigal, achieves "sonic neutrality superior to that of any previous Mark Levinson product." This unity-gain buffer features no AC feedback in the audio range, a DC servo circuit to eliminate coupling caps in the signal path, and an output stage cascaded with a current amplifier to preserve class-A operation while minimizing voltage changes across the output. Muting relays in the output stage prevent noise or pops from reaching the output during power-up or power-down.

Like Madrigal's other digital products (the Proceed line), the No.30 has a very low output impedance (specified at < 6 ohms). Output low-pass filtering is an active Bessel-aligned type with constant group delay to 40kHz. This filter's design was reportedly critical in maintaining the processor's sense of dynamics.

Despite the length of this technical description, the No.30 includes many elaborate techniques I haven't mentioned; it's just chock-full of innovative design and uncompromised execution, the latter clearly dictated by sound quality, not efforts to meet a "price point." However, Madrigal claims that every technique and circuit refinement in the power supply and No.30 had an audible effect. If their ears heard an improvement, the technique was incorporated. If they didn't, it wasn't. The No.30 is thus the defining physical embodiment of Madrigal's D/A converter philosophy.

It probably goes without saying, but the build integrity, parts quality, and fit'n'finish are extraordinary. In fact, the No.30 is the most beautifully built and elaborately designed audio product I've ever seen.

**Music**

To say I was eager to hear what this technological marvel sounded like is an understatement. The No.30 was installed in my usual reference system: VTL 225W monoblocks driving Hales System Two Signatures, augmented by a Muse Model 18 subwoofer, all driven by an Audio Research LS2 line-stage preamplifier. Digital sources were a Theta Data universal transport fitted with coaxial and AT&T ST-type optical outputs, and a JVC DAT machine playing original master tapes. I also auditioned the No.30 with Nakamichi's new $6000 seven-disc transport, the 1000MB. On hand were a large selection of digital interconnects, including Madrigal's, the Aural Symphonics Digital Standard, Theta's cable, TARA Labs Digital Reference, The Anodyne Group cable, WonderLink, and AudioQuest Digital Pro. The No.30's eight inputs made experimenting with cables convenient. Most of the auditioning was through the AT&T ST-type optical input, because it sounded the best and because it is not a variable in the chain, thus making the listening impressions more transportable to different systems.

In addition to the No.30 becoming my primary digital source for the past month, I performed direct comparisons with other digital processors: the Wadia 2000, Stax DAC-XIt, Audio Research DAC1-20, and Kinetics KCD-55 Ultra (reviewed in the next issue). I also compared these processors and the No.30 to LP playback.

Loudspeaker cable was 3' bi-wired runs of AudioQuest Dragon/Clear, and interconnects were AudioQuest Diamond or Straight Wire Maestro. To assess the No.30's balanced operation, a Boulder 500AE (reviewed by JGH last October) was installed, driven by the No.30 through an Electronic Visionary Systems Ultimate Balanced Attenuator and AudioQuest Lapis balanced interconnects. All AC power was conditioned by a Tice Power Block and Titan, and the No.30 was mounted on a Merrill Stable Table.

From the very first moment of listening, it was obvious that the No.30 was something special. This was clearly digital playback many levels above what had been previously considered the state of the art.

As I sat in my listening chair through the first piece of music, I was overwhelmed by the sheer amount of musical information revealed by the No.30. It was as though a translucent window had been removed from between me and the music, allowing previously obscured detail to become vibrant and lifelike. Suddenly, I realized the implications of what I was hearing: if music I knew so intimately had this many more levels of detail and nuance, perhaps all digital media had a hidden musicality waiting to be revealed. It was an exciting prospect.

The next few hours were revelatory. With disc after disc, the reaction was the same: music known intimately was presented in a way that made me feel as though I were hearing it for the first time. In addition, I felt that I was hearing just the music, not a digital processor's interpretation of it.
Specifically, the No.30 exceeds the performance of every other converter in every criterion I use to assess digital processor quality. From detail resolution to soundstaging to dynamics to tonal neutrality, the No.30 was in a different league.

Starting with the bass, the No.30 had a combination of tautness and dynamic impact that was stunning. The entire bottom end was tight as a trampoline, punchy, and with superb pitch resolution. In jazz with acoustic bass, the instrument took on an entirely new character: round, liquid, controlled, and very dynamic. These qualities added greatly to the music's rhythm and drive. In addition, the bass seemed to stand out, existing independently of the rest of the presentation. The impression of a bass player standing there playing was palpable. Further adding to the sense of presence, the low frequencies had a liquidity and wealth of inner detail that made instruments sound just plain real. The stultified, wooden, featureless bass presented by some digital processors was thrown into sharp relief by the No.30's liquid, finely woven rendering.

The bass also had a remarkable clarity and solidity. On the Dorian recording of Jean Guillou's organ transcription of Mussorgsky's Pictures at an Exhibition (DOR-90117), the very low pedal tones were each clearly articulated and differentiated. By contrast, other converters' low ends could sound like a roar, degenerating into a jumble of indistinct tones. This was especially true at high levels and during complex passages. This recording highlighted the No.30's ability to maintain pitch definition and clarity, no matter the demands placed on it.

The No.30 presented a very "fast" low end. Bass drum had a suddenness and steep attack not previously heard from digital. There was a sense of dynamic effortlessness that was startling. The combination of remarkable pitch precision with unhindered dynamics produced greater impact and power. The musical effect of the No.30's superb bass reproduction was a heightened sense of rhythm, pace, and drive. There was a bounce and energy to the music that provided a greater impression of musicians playing and interacting with each other. The rhythm section really locked in and cooked through the No.30, bringing a newfound sense of energy. Every kind of music benefited from this sense of pace. From the rhythmic intensity of The Rite of Spring (Chesky CD42) to be-bop (my own recording) to electric blues (Luke and the Locomotives, AudioQuest AQ CD1004), the No.30's drive was exhilarating.

Moving to the midrange, the No.30 had an unparalleled presentation of natural timbres—no glare, hardness, or synthetic artificiality. Instrumental timbres were lifelike and palpable, richly infused with fine detail. The acoustic guitar and fretless acoustic bass on Three-Way Mirror (Reference Recordings RR-24CD) sounded much more real when fleshed out with such textural purity and delicate nuance. This is an area where the No.30 has no peer: the ability to resolve the subtleties that make a reproduced instrument sound more like "live." There was a harmonic rightness to textures that made the No.30 sound distinctly "undigital." The hardness and slightly metallic edge of most converters was replaced by a warm smoothness that allowed high playback levels without cringing. In fact, I was constantly tempted to turn the music up rather than down—rare indeed for digital.

The No.30 has perhaps the most "right" and unfatiguing treble presentation of any digital processor I've auditioned. Many converters attempt to gloss over digital's treble hash by making the top octaves overly soft and syrupy. This gets rid of the whitish grain overlaying the music, but also robs it of detail and richness. The No.30 paradoxically provided a silky-smooth treble and lots of detail. The only other digital source with this smooth a treble balance that doesn't overly romanticize the presentation was the Linn Karik CD player reviewed last month.

Instruments rich in high frequencies were beautifully portrayed by the No.30, completely lacking that fatiguing brittleness so often heard from digital. On the excellent Harmonia Mundi recording of Nicholas McGegan conducting Handel's Water Music (HMU-907010), there was a warmth and smoothness to the strings that was a revelation. I didn't have to listen past a steely metallic quality to enjoy the music.

In addition, cymbals had a burnished, round quality rather than being overlaid with grain. Even compared to some smooth-sounding processors—the Wadia 2000 and ARC DAC1-20—the No.30 achieved another level of treble purity and sense of ease. Music was relaxing, not edgy. Long listening sessions were free from fatigue, without the common sense of relief

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3 My reaction to the No.30 in a very different system—Wadia transport, glass-fiber data link, Mod Squad Line Drive Deluxe, Audio Research Classic 120 monoblocks, Spendor 5100 loudspeakers—was identical. One CD led to another to another to another, a common experience with LP, but a first time for me in nine years of CD playback. —JA
when the volume was turned down. I found myself listening at higher playback levels than normal because of the No.30's treble smooth-ness. Overall, the No.30's tonal balance was just right—tight and full bass, silky treble, and no midrange forwardness.

In fact, I find it difficult to describe the No.30's "sound" or "character" because it is so neutral and transparent. I felt as though I were hearing exactly what was on the disc or digital master tape, not the No.30's interpretation of it. The No.30 didn't overlay the music with a common sonic signature. Instead, it seemed to get out of the way, taking the listener one step closer to the musicians. While other processors have been described as "laid-back," "forward," "smooth," "lightweight," or "detailed," the No.30 defied such descriptions. Rather, it seemed to convey the characteristics of the recording, the presentation changing with each disc. Moreover, instead of interpreting all instruments within the presentation with a similar "sound," each was allowed a unique and individual textural identity.

An important part of any component's musi- cality is the ability to throw a believable representa- tion of individual instruments existing between and behind the loudspeakers—soundstaging. While many digital processors can present width and depth, the ability to create the illusion of spatially distinct individual instruments and voices is much more challenging. For me, digital has always blurred this separation, fusing images into a synthetic continuum. While some processors have gone a long way toward recreating (creating?) a sense of size and depth, they have nevertheless fallen short of analog replay in convincing the listener the presentation is made up of many individual components, not just varying shades of the same cloth. This aspect of music reproduction, I believe, is of paramount importance in the quest to pass the threshold from "good sound" to a powerful musical involvement. When the brain doesn't have to work so hard in aiding the illusion, there are fewer distractions to enjoying the music.

I've gone into this discussion because the No.30 has an astonishing ability to separate disparate musical threads from the overall fabric. In fact, this was the very first thing I noticed, seconds into the first disc. My opening comments about hearing more music relate to the No.30's uncanny bent for presenting even the quietest and most subtle sounds as distinct musical entities.

On Chick Corea's Light as a Feather CD (Poly- dor 827 148-2), for example, there is a percus- sion instrument midway into the soundstage that has always sounded like an undefined click. Not only did the No.30 unambiguously reveal the instrument to be woodblocks, it also presented the sounds with far better-defined pitches. Fur- ther, there was a feeling of air around the instru- ment, making it spatially distinct from the other instruments. No other digital processor even came close to conveying the inner detail that led to this impression. This is just one example of the No.30's stunning ability to resolve what's on the CD. I had a similar experience with every CD I played, no matter how many times I'd heard the music. Another example was the previously mentioned Water Music. Through other proces- sors, the harpsichord toward the soundstage rear was presented as a sound reminiscent of a harp- sicord. Through the No.30, it was a harpsichord, not a suggestion of one.

As I write this, I'm listening to background music through the No.30, well away from the sweet spot. Even from this position, facing away from the loudspeakers, the remarkable individu- ality of instrumental images and the portrayal of fine detail are unmistakable. Hearing things in recordings that I never knew were there makes me turn off the computer and listen. It's irresis- tible to hear my favorite music reproduced with a detail and life I didn't think possible from CD. I feel compelled to just sit there and listen with rapt attention. The only drawback is, it makes it difficult to finish the review!

Every CD I auditioned through the No.30 bowled me over with newfound musical information. The No.30 made what I thought were mediocre CDs sound almost like Chesky releases. Just imagine how actual Chesky discs sounded.

Interestingly, this discussion of soundstage evolved into presentation of detail—perhaps indicating a closer link between these two aspects of presentation than previously realized. But back to what we more generally consider soundstaging: width and depth. Both were extraordinary through the No.30. The presentation extended beyond the loudspeaker boundaries, throwing images across a wide arc. There was also a great sense of reverberation surrounding the loud- speakers, creating a feeling of envelopment in the sound. The guitar solo in "Feel Like Going Home" from Luke and the Locomotives was sur- rounded by air and a remarkable sense of size. Recordings with lots of natural reverberation
were stunning. A particular favorite, both musically and sonically, is Three-Way Mirror. Listen to the sheer sense of depth and space unfold on the first track. The apparent distance between the front and rear of the presentation contributed to the illusion that the sound was emerging from two boxes a few feet from the listening room's rear wall. Overall, the Wadia 2000 had a comparable presentation of distance and size, but with a slightly narrower perspective.

Image specificity was the No.30's forte. Instruments were presented as precisely defined objects, without smearing or integration into the music's fabric. Images were tight, compact, and thrown with pinpoint localization. In this regard, the No.30 has no peer. The No.30 didn't have the "sculpted" soundstage heard from the Theta processors, but was perhaps more natural and believable. In addition, the No.30 had a see-through transparency that allowed a clear view of individual instrumental outlines. The overall presentation was the antithesis of murky, congested, confused, or colored.

The No.30 had one other remarkable quality related to soundstaging: the ability to make the loudspeakers disappear. The music seemed to hang in space before me, not emerge from the loudspeakers. While this quality is very dependent on the loudspeakers, the No.30 contributed significantly to this impression. Overall, the No.30's combination of soundstage size, transparency, spatial and textural distinction between instruments, and resolution of fine detail worked synergistically to create a more convincing illusion of hearing real music.

When I received the No.30 review sample, I had just returned from making some recordings at David Manley's purist recording studio in California for the next Stereophile Test CD. As I listened to the DAT master tapes through various converters with the memory of the live instruments and microphone feed fresh in my mind, I was struck by just how much closer to the ideal of live music the No.30 sounded. It was that much better than anything else. This was accompanied, however, by a feeling of disappointment that these recordings will rarely be heard through the No.30.

I've been very cautious about equating even the best digital processors with analog. Any doubts about analog's superiority have been quickly dispatched by a comparison with, for example, a Sheffield direct-to-disc LP. This is a humbling experience for any digital processor. I therefore compared three digital processors—the No.30, Audio Research's DAC 1-20, and Kinergetics' KCD-55 Ultra—to each other and to LP. The analog front-end included a Well-Tempered Turntable and LP Labs-modified arm, AudioQuest AQ 7000 cartridge, and a Vendetta Research phono preamp, all on a Merrill Stable Table. Sources in both CD and LP formats were Sheffield Lab 17 (Tower of Power Direct), Stereophile's Intermezzo, and Luke and the Locomotives.

Each LP was easily superior to the CD as decoded by the DAC 1-20 and KCD-55 Ultra. The No.30, however, had some of the LP's qualities not heard through the other processors. The most striking aspect of the LP was a "you are there" immediacy. The DAC 1-20 and KCD-55 Ultra sounded one step removed from the event, with less life. The No.30 lacked that last edge of palpability in relation to the LP, but was much closer in this regard than the other two processors. Although the No.30 was not quite as musical as the LP, it was not embarrassed by the comparison. That's saying a lot. Some aspects of the CD, however, were better than LP: no surface noise and better pitch stability, especially evident on Intermezzo. In fact, I preferred listening to the CD on this recording for these reasons.

In many evaluations of digital converters, it's a process or going back and forth (in addition to long-term, single-presentation listening) between products. These comparisons produce ambivalent feelings: processor A does this well, but processor B does that better. Forming a value judgment about which one is "better" involves assessing the musical significance of each processor's strengths and flaws. The No.30 posed no such dilemma: from the start, it was clearly superior in every respect.

The No.30 made one other powerful impression on me: its presentation of dynamic contrast and razor-sharp transient edges. Throughout the auditioning, I was amazed at how differently drums sounded through the No.30. They had a quickness and life that made them seem to jump from the presentation. I'm not talking about slam and "jump factor" (which the No.30 also has), but the ability to hear that leading-edge immediacy, even on quietly played drum kits. The musical effect was dramatic: hard-driving rhythms became even more so, and intricate rhythmic nuances by great jazz drummers suddenly became apparent for the first time. The music just seemed to have a much greater life and vitality, heightening the sense of musicians interacting with each other,
especially with jazz.

I should add that I enjoyed hearing the specific aspects of the presentation I’ve described not for their own sake, but for their musical significance. Music listening was a more fulfilling, complete experience through the No.30. Going back to the example of the click sound being replaced by woodblocks of varying pitch, this minuscule objective change in the signal produced a huge perceptual difference. The No.30 revealed a new dimension of rhythmic interaction in this music. Further, there was suddenly an impression of Flora Purim, who plays percussion when she isn’t singing, standing there playing with the band during the long instrumental breaks, rather than just vanishing. It was a different experience.

I could have chosen from among many examples of this remarkable quality. This one sticks in my mind for three reasons: I know the music so well, I’ve heard it through perhaps 25 digital processors, and significantly, it was the first piece of music heard through the No.30. I’m sure that there are as many examples as there are listeners.

I’ll wind up with a capsule comparison of the No.30 and two of the other big boys, the Stax DAC-Xlt and Wadia 2000.

Because the Stax has no ST optical input, I used an Anodyne Group digital cable (Madrigal’s electrical cable has an XLR on one end). I hadn’t heard the Stax for some time, but from my memory, I thought the No.30 would be clearly superior. I was surprised by how close the Stax sounded in some respects—it is a superb processor. But the No.30 didn’t have the magic I’ve just described; it was excellent, but not in a different league. Then I realized that I was listening to the No.30 through an electrical interface, not the ST optical through which I had performed most of the previous auditioning. I thus made three comparisons: the Stax, the No.30 with the same electrical interconnect used with the Stax, and ST optical. The difference between this particular digital cable and ST optical was thrown into sharp relief. The optical interface provided a smoother, more detailed presentation, with more of the qualities described above. The electrical interconnect brought the No.30 down a notch. I will therefore caution prospective buyers to be very careful in selecting a digital cable if the ST optical isn’t used. To achieve the kind of performance I’ve been describing, I recommend avoiding the electrical interface altogether.

But back to the Stax. Its upper mids and treble were less liquid and silky than the No.30’s, with a trace of hardness. Overall, the No.30 had a much more analog-like sense of ease and relaxation. In the bass, the No.30 had much better pitch definition, dynamic impact, and rhythmic drive. It was a closer call on soundstaging, but the Stax didn’t match the No.30’s remarkable image specificity and ability to separate disparate musical lines from the whole.

The Wadia had a very similar bass presentation to the No.30, with a satisfying power and solidity. The No.30 had the edge in dynamics, however, and was slightly tighter. Both processors threw a stunning sense of depth, with air and space surrounding instrumental outlines. The nod goes to the No.30, however, for its greater transparency and image specificity. Like the comparison with the Stax, the No.30 clearly had a better ability to separate individual instruments—spatially and texturally—from the presentation. The No.30 also had a smoother tonal balance, with a greater sense of ease. I also felt the No.30 to be less colored and more transparent, especially through the mids.

Reflections

The No.30’s unparalleled performance suggests several generalizations about digital processor design. First, massive computer power, with faster and faster oversampling digital filters, appears not to be a prerequisite for state-of-the-art performance. An off-the-shelf digital filter—in thoughtful implementations—is not the limiting factor in digital playback musicality.

Second, 1-bit conversion techniques would seem to have a long way to go to match the performance of state-of-the-art R2R ladder DACs like the UltraAnalog D20400 used in the No.30. I tend to think that 1-bit may never equal the performance of ladder DACs, especially in products where cost is secondary to sonic performance.

More important, the No.30 has changed my basic beliefs about digital audio. The hardness, homogeneity, and synthetic characteristic I believed to be inherent in the CD medium (or at least in today’s A/D converters) are revealed by the No.30 to be instead primarily artifacts of digital playback processors. This is great news for all music lovers; although very few have the means to own a No.30, we now know that the CD medium is capable of much more than previously imagined. This realization was accompanied by a mixture of relief and joy: digital audio may not be intrinsically unmusical.

Now, if Madrigal would only build an A/D
converter with the same dedication and engineering expertise lavished on the No.30. I'd like to hear a CD made through that converter.

**Measurements**
Although there is very little correlation between sound quality and measurements, I expected the No.30 to have superb test-bench performance. This was indeed the case: the No.30 was the best-measuring digital processor I've tested. The following measurements were taken from the No.30's unbalanced outputs unless otherwise noted.

The No.30's output level when decoding a full-scale (0dBFS) 1kHz sinewave was 2.095V, 0.4dB higher than the CD standard of 2V. This level is, however, slightly lower than most high-end digital processors. I must reiterate the need for level matching when comparing digital processors. The level from the balanced outputs

![Fig.1 Mark Levinson No.30, balanced frequency response (right channel dashed, 0.5dB/vertical div.)](image1)

![Fig.2 Mark Levinson No.30, de-emphasis error (right channel dashed, 0.5dB/vertical div.)](image2)

![Fig.3 Mark Levinson No.30, crosstalk (5dB/vertical div.)](image3)

![Fig.4 Mark Levinson No.30, spectrum of dithered 1kHz tone at -90.31dB with noise and spuriae (1/2-octave analysis)](image4)

![Fig.5 Mark Levinson No.30, departure from linearity (right channel dashed, 2dB/vertical div.)](image5)

![Fig.6 Mark Levinson No.30, HF intermodulation spectrum, 300Hz–30kHz, 19 + 20kHz at 0dBFS (linear frequency scale)](image6)

![Fig.7 Mark Levinson No.30, 1kHz squarewave at 0dBFS](image7)
under these conditions was 4.14V (channel balance was within an astounding 0.008dB).

Frequency response (from the balanced outputs; the unbalanced was identical) is shown in fig.1 and conforms to Madrigal's specification of 20Hz to 20kHz, +0, -0.2dB. There is exactly a 0.2dB rolloff at 20kHz, typical of most digital processors. Because de-emphasis is performed in the digital domain by the NPC digital filter (instead of in the analog domain by a passive or active filter), I expected no de-emphasis error. That's exactly what I found: the de-emphasis curve (fig.2) exactly matched the frequency-response curve. Incidentally, the owner's manual has two paragraphs on de-emphasis, taken from the Proceed products, incorrectly indicating that de-emphasis is performed in the analog output stage.

When I measured the No.30's channel separation, no trace appeared on the computer screen! I quickly realized that the No.30's interchannel crosstalk was so low that the standard plot would need rescaling. Typically, the crosstalk horizontal scale is between -50dB and -120dB. In the No.30's case, crosstalk was lower than -120dB at all frequencies. In fact, it was -140dB at 125Hz, an amazingly low value. Moreover, the L-R and R-L crosstalk curves virtually overlap, meaning that their performances were identical. Again, note the different scale in fig.3 when comparing to other crosstalk plots. The balanced crosstalk curves (not shown) were identical to the unbalanced curves.

Looking at a spectral analysis of the No.30's output when decoding a -90dB, 1kHz sinewave produced the plot in fig.4. Note the very low level of noise, especially the absence of powersupply-related junk in the low frequencies. This is perhaps the best-looking converter I've measured in this respect. Also note that the 1kHz tone peaks at exactly the -90dB horizontal division, a hint that the No.30 has good low-level linearity.

Fig.5, the No.30's departure from linearity with a dithered signal, confirms that it indeed has excellent low-level performance. Linearity error at -90dB was +0.07dB (right channel) and +0.12dB (left), far better than Madrigal's specification of +1.7dB below -90dB. At -100dB, linearity error was only +0.39dB (L) and +0.38dB (R). Again, this is among the best low-level linearity performance measured. I suspect that the DAC is actually perfect at -100dB; the identical positive error in both channels is probably noise.

A test that has occasionally proved useful in the past in revealing D/A problems is to drive the unit under test with data representing an equal mix of 19kHz and 20kHz tones, the resulting waveform peaking at 0dB. Processors that produce much 1kHz difference product, or higher-order sidebands at 18kHz and 21kHz, can sound a little hard in the upper midrange. Looking at the spectrum of the No.30's analog output, however, revealed the processor to produce no 1kHz product above the noise floor of the FFT analyzer, with vestigial higher-order products, an excellent result.

The No.30's reproduction of a 1kHz, full-scale squarewave is shown in fig.7. The squarewave's shape is slightly different from that seen in other converters: the overshoot and ringing are lower in amplitude, and the ringing stops much sooner. Compare fig.7 to other converters' 1kHz, full-scale squarewave shapes. Although the No.30 uses the same digital filter as the Audio Research DAC1 and DAC1-20, their squarewave shapes are not identical, as might be expected.

Output impedance was very low, measuring 6.8 ohms at 20Hz, rising to 7.9 ohms at 20kHz. At these very low output impedances, the cable connecting the device under test to the System One becomes a factor in the measurement. I suspect that the No.30 would meet the 6 ohm output impedance spec if measured directly at the output jacks, instead of connected to the System One. In any case, this is a very low value, indicating the No.30 will have little trouble driving any power amplifier, cable, or passive control unit. Balanced output impedance was similarly low, measuring 13.3 ohms at 20Hz, 13.6 ohms at 1kHz, and 15.4 ohms at 20kHz.

The No.30 doesn't invert absolute polarity unless the front-panel inversion switch is pressed. The balanced outputs assign pin 2 as "hot," conforming to the US standard. When connected to equipment in which pin 3 is "hot," the No.30 will invert absolute polarity when the front-panel inversion LED is off.

A minuscule level of DC was measured at its outputs: 100µV from the unbalanced jacks (both left and right channels), and 200µV (L) and 300µV (R) respectively from the balanced outputs. This is a very low level, especially considering that the No.30 is direct-coupled. It is not uncommon to measure several mV, or even tens of mV, of DC at the output of a digital processor.

Overall, the No.30's bench performance was
exemplary. In many areas—crosstalk, linearity, de-emphasis error—the No.30 was the best-performing digital processor I’ve measured.

The postscript to this review describes a new digital processor measurement, performed on the No.30 and five other previously reviewed converters.

CONCLUSION
The Mark Levinson No.30 Reference Digital Processor sets a new standard in digital audio playback. It provides a musical presentation significantly better in every respect than that of any other processor I’ve auditioned, regardless of design or price. I believe the No.30 to be so extraordinary that Stereophile’s “Recommended Components” should be restructured to recognize this product’s pre-eminent position. I therefore suggest that the No.30 be placed in Class A, and all other current Class A processors be moved to Class B. This is a bold step, but one I believe warranted by the No.30’s superior performance. This is appropriate, however, only when the No.30 is connected via the AT&T ST-type optical input, or a very high-quality electrical interconnect.

I won’t summarize the No.30’s strengths in this conclusion—they’re detailed in the body of the review and too numerous to reiterate here. As far as weaknesses, I’m at a loss to criticize the No.30. Although every other review I’ve written of digital processors has included a description of some shortcomings, I find it difficult to find anything wrong with the No.30. It’s possible that I’ve been blinded to the No.30’s flaws by its own sheer musicality. More likely, however, is that the No.30’s transparency and lack of editorial interpretation leave no specific sonic signature that can be criticized.

In my review 18 months ago of the $12,000 Stax DAC-X1t (Vol.13 No.8), I cautioned prospective purchasers that “the DAC-X1t may be surpassed by a less expensive product within a relatively short period of time. One is therefore cautioned about investing in a five-figure digital processor during this period of rapid advancement.”

I have no such reservations about the No.30. It is so far superior to anything else that it may be many years before other manufacturers can begin to catch up. Further, it may be difficult to achieve this level of performance without the No.30’s cost-no-object approach. Competing products may thus one day match the No.30, but will probably still be expensive. Finally, I must reiterate the extraordinary build quality, superb user interface, and unprecedented flexibility in accommodating various digital formats. My only regret is that the No.30’s astronomical price will limit its availability to relatively few music lovers.

Oh yes, I do have one other regret: I must return the review sample to Madrigal.

I shall miss it dearly.

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1 See my interview with Dr. Cabot in Vol.13 No.1.

2 “Noise Modulation in Digital Audio Devices” is available for $3 from the Audio Engineering Society, 60 E. 42nd Street, Room 2520, New York, NY 10165-0075. Tel: (212) 661-8528.

4 It is rumored that Madrigal is working on a less expensive processor (my guess: $6500) that incorporates many of the No.30’s innovations, but in a more cost-effective package. The No.30’s price could be substantially reduced by getting rid of the user interface, eight digital inputs, power-supply packaging (like the 1st-thick front panel), and other niceties.

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NOISE, MODULATION, & DIGITAL/ANALOG CONVERSION
At the Audio Engineering Society Convention in Paris last February, Audio Precision’s Dr. Richard Cabot proposed a new technique for measuring noise modulation in D/A converters. The method, based on psychoacoustic principles, attempts to predict the audible performance of D/A converters. Now that Stereophile has added digital-domain signal generation and analysis to our Audio Precision System One, we can employ Dr. Cabot’s technique and see if there are any correlations with subjective performance.

The technique is straightforward: drive the digital converter with the code representing a low-frequency sinewave, high-pass filter the converter’s output to remove the test signal, and perform a 1/3-octave spectral analysis of the converter’s output. The result is plotted as noise level vs frequency. The measurement is repeated at different input-signal levels, with each curve overlaid on the previous curves for easy comparison.

The test-signal frequency is 41Hz, chosen because it is not an integer sub-multiple of the sampling frequency. The test signal will thus exercise the greatest number of steps in the DAC. Five signal levels are used, from -60dB to

Stereophile, February 1992
-100dB (referred to full scale, designated -60dBFS and -100dBFS) in 10dB steps.

Basically, the technique measures noise-floor shifts (a result of quantization distortion) as a function of signal level. There is a direct correlation between low-level linearity and performance in this test. In addition to how much the noise floor is modulated by signal level, the measurement reveals shifts in the noise floor’s spectral balance with changes in signal level. Ideally, the noise-floor spectrum should remain constant with level, producing curves that exactly overlay each other. Psychoacoustic research by Louis Fielder at Dolby Labs (those guys know something about noise-floor modulation!) indicates that noise-floor shifts of 2dB are audible. Further, Dr. Cabot’s paper asserts that the ear is very sensitive to shifts in the noise floor’s spectral balance; changes on the order of 1dB are reportedly audible.

Armed with that introduction, here are the results of this measurement technique, performed on six digital processors. I’ve reviewed all six units and know their sonic signatures well; it thus may be possible to correlate the measurement results with listening impressions. For background, their prices and internal D/A converters are listed here: 1) Audio Research DAC-20, $3495, UltraAnalog 20-bit DAC; 2) PS Audio SuperLink, $1195, dual Burr-Brown PCM61PK DACs; 3) Meridian 203, $990, two Philips 7321 Bitstream DACs used in “dual differential” mode; 4) Kinergistics KCD-55 Ultra, $3995, two UltraAnalog 20-bit DACs used differentially; 5) Wadia 2000, $7450, four unknown R2R ladder DACs fed time-shifted signals; 6) Mark Levinson No.30, $13,950, two dual UltraAnalog 20-bit DACs used differentially.

Fig.1 is the DAC-20. Compared to the plots Dr. Cabot shows in his paper on typical 14-bit converters, the DAC-20 is superb. There is very little change in either the noise floor’s level or spectral balance with input level, indicated by how closely the curves are bunched together.

The SuperLink is shown in fig.2. The noise floor is intrinsically much higher than the DAC-20, and there is a substantial change in the spectral balance as a function of input level, especially in the octave between 10kHz and 20kHz. Further, the spectral balance of the SuperLink’s noise floor is radically different from the DAC-20. In the two octaves between 300Hz and 1.2kHz (extremely important musically), the SuperLink has about a 13dB higher noise floor. At 10kHz, it is only about 7dB higher than the DAC-20.

Fig.3 shows the Meridian 203’s performance on this test. The curves look almost as good as the DAC-20, but have more variations with

![Fig.1 Audio Research DAC1-20, noise modulation, -60 to -100dBFS](image1)

![Fig.2 PS Audio SuperLink, noise modulation, -60 to -100dBFS](image2)

![Fig.3 Meridian 203, noise modulation, -60 to -100dBFS](image3)

![Fig.4 Kinergistics KCD-55 Ultra, noise modulation, -60 to -100dBFS](image4)
level, especially between 1kHz and 6kHz. This is the only 1-bit converter of the group (and the least expensive).\(^3\)

Next up is the Kinergetics KCD-55 Ultra (fig.4). Although the Ultra uses UltraAnalog 20-bit DACs, its noise floor was about 10dB higher than the DAC1-20's. It has, however, an identical spectral balance, and similarly good groupings of the curves.

The venerable Wadia 2000 is seen in fig.5. This enigmatic converter exhibits poor bench performance (at least on standard tests), yet is superbly musical. As can be seen, there are very large variations in the noise floor as a function of input level, indicated by the loose grouping of the curves. In addition, there are severe shifts below 1kHz, with one input level producing a 10dB increase in the noise floor at about 500Hz.

Finally, the No.30 (fig.6). This was the best-measuring processor in this test, with the lowest noise floor and very little spectral-balance change with input level.

To give you an idea of the quality of converters found in professional digital multitrack recorders, take a look at fig.7, reprinted from the AES paper. Besides having a high intrinsic noise level, the shifts in the noise's spectral balance are huge.

What does all this mean? I'm not sure. From this small sampling, I saw no correlation with listening impressions. We will, however, continue measuring digital converters with this technique in the hope that some trend may emerge in the long run. Any attempt to relate measurement to subjective evaluation is a step in the right direction. —Robert Harley

\(^3\) The Meridian 203 was apparently revised at the end of 1991 to incorporate Philips's latest "DAC-7" Bitstream converter. It keeps the 7321, however, to make use of its digital low-pass filter, which Meridian's Bob Stuart feels to produce the lowest modulation noise. RH's sample of the 203 was the earlier version.—JA

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**Symphonic Line Model RG-7**

**STEREO POWER AMPLIFIER**

Dick Olsher


"You've got vat you want, Cohagen. Give theeze people chair." Arnold (Schwarzenegger) pleads...
for the lives of his mutant rebel comrades who are trapped in the Venusville sector of the Martian mining colony and about to run out of oxygen. Arnold, you see, is in no bargaining position. He's strapped into a mind-altering machine, about to be re-programmed. In a few seconds he'll flex his biceps, break his restraints, and explode out of his chair to maim and destroy the dozen or so (I lost count) Martians foolish enough to try to stop him. The soundtrack of Total Recall never sounded better. The mind-blowing finale when the entire red planet is terraformed before our eyes was especially awesome. These apocalyptic moments were reproduced cleanly and without compression thanks to the Model RG-7 power amp. At that moment, and as far as Arnold was concerned, this was the amp to beat all.

This was my introduction to the RG-7's sonic potential. Klaus Bunge of German Acoustics (the importer) had warned me about the necessity of a prolonged break-in period, so it seemed wise to insert the amp into our high-end video system to give it a workout while the family enjoyed the movies. There it stayed for a couple of months before moving along into my reference system.

While in the video system, it had displaced the Electron Kinetics Eagle 2a. In its day, the Eagle had impressed none other than our own JGH with its ability to dig deep and squeeze them bass notes through the speaker with iron-fisted control. Designer John Iverson had put it best in his own inimitable way: "this puppy can sure kick ass." In no way did I find anything amiss with the RG-7's bass reach and definition, and it did not take a "golden-eared" reviewer (ask my son, Daniel) to notice a fundamental improvement in the rest of the audible range. For a solid-state junkie, the Eagle offers plenty of bass punch and lots of turbocharged detail that explodes onto the soundstage with enough zip to wake the dead.

During its formative years, solid-state gear was promoted on the basis of the old-fashioned and misguided notion that high fidelity is all about wide-range reproduction. This noxious-sounding stuff was touted as being able to essentially pass DC to daylight, the implication being that, because it measures so much better on the bench than tube gear, it must perfom sound better. This skin-deep vision of what hi-fi was all about was repeatedly punctured by those discriminating listeners who were unable to capture the illusion of live music as effectively with "superior" solid-state equipment.

That was then. Solid-state gear has steadily improved in the last generation, to the point where it has found numerous audiophile adherents. One reason for the evolution of an eminently musical solid-state sound was the revolutionary practice adopted by some designers of putting their ears in the design loop—actually listening to their designs. It came as no surprise, therefore, when I discovered during an enjoyable conversation with Rolf Gemein, the man behind Symphonic Line, how completely he immerses himself in the design process. Even after a circuit topology is chosen and a breadboard prototype appears to work well, a design is far from finished. Component layout and choice of passive components can make or break a design. Apparently, Rolf only tweaks a design
after preparing his mind and body through meditation. Which transistor, resistor, or cable sounds most musical is best determined when the mind is freed from the stress and pull of everyday life.

Rolf's commitment to musical excellence is exemplified by the RG-7's build quality and choice of parts. In terms of build quality, it reminds me of German-made radiation monitoring equipment, which is typically built like a Sherman tank. The US, Germany, and the UK are the three most significant players in the local radiation monitor business. The British stuff (with apology to JA) is heavy on plastic and looks, well, sort of disposable. The Germans, in contrast, stop at nothing short of steel (for a lot more money, of course), while the US designs fall somewhere in between.

How about a 0.2"-thick steel chassis in either Aranya "chameleon" chrome or black piano lacquer finish? To quote from the Symphonic Line brochure: "All Symphonic Line Products incorporate the same parts used in European Satellite." No doubt about it, this amp is fanatically well made. A total of four pairs of Toshiba 60MHz, 150V, 150W transistors are used per channel. Oxygen-free copper wiring is used throughout. The power supply capacity is no less than 130,000µF. The binding posts are WBTs, by far the best-looking and most effective post I've seen; I only wish that something like it becomes standard issue on all high-end amps. Dual-mono construction is used from input to output. Into a 2 ohm load, this amp is said to be able to pump out an amazing 14 amps RMS, perilously close to the circuit-breaker trip point for a typical 15 amp service.

The Symphonic Line line is handmade in Germany and includes several amplifiers. The RG-7 amplifier is a more powerful version of the RG-1 ($3695), which I first heard at the 1991 Winter CES. The power supply has been beefed up and the power-transistor complement has been increased by one pair. My sample of the RG-7 was beautifully finished in chrome. Viewed head-on, it does not look much like an amp. There are no handles, switches, LEDs, or heatsinks visible. About the only thing you're likely to see from this angle is your own reflection in the highly polished chrome. The heatsinks are neatly tucked away on the sides behind the front panel and the on/off switch is located on the back panel. Front-panel handles would have been nice, however, as the amp is a bit awkward to move around without them.

**SONIC IMPRESSIONS**

My listening base for the RG-7 included the Black Dahlia, Ensemble Reference, and SoundLab A-1 loudspeakers. It is terribly important to evaluate amplifiers in as many contexts as possible. Only in this fashion is it possible to fairly determine an amp's inherent sonic signature. Amps are notorious for forming a synergistic partnership with a particular load or going to pieces with an antagonistic load. The sound of the perfect amp is nothing at all—nil, nada, no added colorations, no sonic detractions or additives, a personality transparent to what comes before in the chain, and at the same time fully accommodating the needs of the load. Such an amp would be a sonic chameleon, highlighting shortcomings elsewhere in the chain; it would therefore require a variety of loads and front-ends to enable the reviewer to home in on what the amp in essence is not doing wrong.

There was little variation in my findings as the RG-7 was exposed to differing loads and front-ends. Certain sonic attributes traveled with the amp as it made the rounds, indicating its essential sonic character.

I found it necessary to let this amp cook for a minimum of 30 minutes before settling down for serious listening. During this first half-hour I found it relatively difficult to penetrate into the soundstage, as though observing the performers through a dirty window. But the Windex comes out during warmup, and the window gets a thorough cleaning, to the point of startling transparency.

The RG-7's most endearing quality by far, bordering on the sensational for solid-state, was the manner in which it presented the heart of the midrange. The middle mids, from about 500 to 2000Hz, were illuminated like no other transistor amp I had heard before. And believe me, I've heard plenty of Levinsons and Krells. Lots of detail was being resolved that I had not really focused on before. It was spooky; if a chair was creaking on stage, or one of the musicians was clearing his throat, all was clearly documented. That this was accomplished without edge, analytical bent, or etch in the fabric of the music was the real miracle. This region consistently sounded smooth and suave. Think of the silkyness of an Alpine lake, undisturbed by wind and bathed by the sun's rays. The music bubbled forth fresh and texturally undisturbed by grain or grit.
What I despise the most about the cheap transistor stuff is its inability to break the "canned music" ranks: a familial inability to infuse life into instrumental outlines. Imagine an orchestra where every musician is bound in a straight-jacket. Everyone is groping and grasping for a better hold, and no one is quite in full control of their particular instrument. Tentative fingers and limited reach compress the full emotional potential of the music. The natural bloom and air that a live instrument projects just doesn't come through. While tube amps in general are gifted with the ability to realistically reproduce the space an instrument occupies, few transistorized amps possess that precious gift; the RG-7 is one of them. It was able to layer the space around instrumental outlines, so that as the instrument got louder or more dynamic the space around it appeared to expand or bloom.

I'm not suggesting that the RG-7 is entirely tube-like in its soundstage portrayal. While the space around each instrument bloomed in concert with volume level, outlines failed to pop into space with sufficient 3-D palpability. This propensity toward the two-dimensional was also evident in the overall soundstage dimensions. The spread of outlines from left to right across the stage was always satisfying, but the impression of depth was reduced. The loss in depth perspective coupled with unrelenting 2-D image outlines made it more difficult for me to get a feel for the recorded hall, and served to diminish some of my initial enthusiasm for the amp.

I found the voicing through the upper mids and lower treble very much to my liking, being neither bright nor etched through this region. When in full voice, the chorus on Walton's Belshazzar's Feast (EMI SAN 324) has been known to rattle the cages of more than several amplifiers. In this case, the RG-7 did not lose its cool or cheapen the sound by "shouting" along with the music. However, textures through this range sounded drier than the real thing. Soprano voices lost some of their natural sweetness. Massed strings sounded a bit harder and drier than the real thing.

Treble transients were reproduced with exemplary speed and control; the extreme treble was consistently open and spacious. At the other frequency extreme, deep bass performance turned out to be variable. With a nominal 8 ohm load, the RG-7's performance was convincing enough, with tight control over bass lines. On the Sound-Lab A-1s, which rise to 30 ohms in the deep bass, bass definition and impact suffered. Tympani whacks lost punch and guts. Strangely enough, the upper bass also lost some definition and sounded a bit anemic! The congas on the "Day O" cut of Belafonte At Carnegie Hall (RCA LSO-6006) were diminished in intensity and weight. The tonal anemia through the upper bass and lower mids turned out to be a general trend. This worked against the RG-7, particularly with the Ensemble Reference minimonitors, serving to emphasize the overall thin balance of these speakers.

I asked DO—that is, the other DO in the family, my teenage son Daniel—to spend some time comparing the RG-7 with the Berning EA-2101 amp ($4290) on the Sound-Labs. The Berning was on hand for review, and having formed definite impressions on how these two amps sounded, I was curious as to how a fresh pair of ears would react. Left alone in the reference room with some of his favorite CDs, Daniel came up with a series of independent notes. Here is a synopsis of his findings. He described the RG-7 as full-spectrum, with good drive from top to bottom. On the flip side of the listening coin, he felt it to be dry, a bit lifeless, shallow-sounding, and noted a hard time getting a fix on image outlines. He found the Berning more "rounded" and softer sounding. Daniel voiced the concern that the Berning might be too "round" for some tastes. The treble was not so well-defined as with the RG-7. Overall, the Berning was livelier, fleshed out a deeper soundstage, was fuller and sweeter sounding, and more fun to listen to. For someone who does not read Stereophile or regularly visit his Dad's listening room, young DO has managed to acquire more than a respectable audiophile vocabulary. And what's even more amazing, he managed in a short time to completely and accurately home in on the sonic essence of these amps. Take note, JA: an audio reviewer in the making.

Summary
Taking into account everything that has been said about the RG-7 amplifier, it would be fair to say that the sonic results one may expect from it would depend greatly on the front-end and load chosen for it. Taken alone, the RG-7 reproduces the core of the midrange with refreshing smooth-

1 My measurements of a pair of Sound-Lab A-1s different from the ones used by DO would indicate that this is the intrinsic nature of the loudspeaker, something that would be usefully modified by tube amplification.

—JA
ness. The manner in which it unfolds the music's textures in this range is nothing short of suave. It is clearly capable of reproducing instrumental outlines with a dynamic bloom once the sole province of tubed amps. Otherwise, its soundstage presentation tends to be 2-D. In this area it would greatly benefit from being partnered by a tubed preamp. When I heard its brother, the RG-1, at CES, it was being driven by the Convergent Audio Technology SL1, a preamp that would appear to take several romantic liberties with the music. As a result, the sound in the suite with Audiostatic ESLs was quite lush and dimensional. A neutral solid-state preamp, such as my Threshold FET-10/e, is probably the last thing the RG-7 would care to see; a tubed preamp is a necessity for this amp.

The upper mids are somewhat lifeless, dry, and lacking the sweetness of the real thing. It's almost as if the amp was voiced around a speaker with a fairly bright sound through this range. Naturally, the RG-7 would mate well with a forward or bright-sounding dynamic speaker. Although I would not choose it to partner the Sound-Lab A-1s, this amp should do well with loads whose tonal balance through the upper octaves is dominated by a bright or lively-sounding tweeter.

As young DO put it: This is a full spectrum amp, from DC to daylight. The treble is quick and well-defined. Bass extension and definition are excellent, at least with a nominal 8 ohm load, though without the stentorian weight and impact of the phenomenal Threshold SA12/e.

With the above caveats in mind, the Symphonic Line RG-7 deserves serious consideration at its price point by anyone who wants refined solid-state sound.

**TJN ADDS SOME MEASUREMENTS**

The input impedance of the RG-7 measured 26.9k ohms. The output impedance varied between 0.06 ohms and 0.09 ohms, depending on load and frequency—negligible in any event. The performance of the RG-7 should therefore be reasonably consistent with different loads. Voltage gain into 8 ohms measured higher than the US norm at 31.6dB at 1kHz. The S/N ratio measured 81.5dB referenced to 1W into 8 ohms—and its main component appeared to be rectifier diode switching noise. The amplifier was non-inverting and the DC offsets at the outputs varied considerably over time, ranging from 5–20mV in the left channel and 7–25mV in the right, perhaps indicative of some very-low-frequency noise.

Fig.1 shows the frequency response of the Symphonic Line RG-7 at 2W into 4 ohms. The response for 1W into 8 ohms (not shown) was even flatter at the top end—down 0.1dB at 26.9kHz.

**Fig.1 Symphonic Line RG-7, frequency response at 2W into 4 ohms (right channel dashed, 0.5dB/vertical div.)**

**Fig.2 Symphonic Line RG-7, 10kHz squarewave at 0.25W into 8 ohms**

**Fig.3 Symphonic Line RG-7, crosstalk (5dB/vertical div.)**

**Fig.4 Symphonic Line RG-7, THD+noise at, from bottom to top: 1W into 8 ohms, 2W into 4 ohms, 4W into 2 ohms (right channel dashed)**
50kHz. As a result, a 10kHz squarewave into 8 ohms (fig.2) shows only a small degree of rounding of the leading and trailing edges. Separation is shown in fig.3, with the top curve showing the crosstalk from the left to the right channel, the bottom curve the crosstalk from the right to the left. The decrease in separation at higher frequencies is a common symptom of capacitive coupling between channels.

The THD+noise vs frequency at low power is plotted in fig.4 for 8 ohms (1W), 4 ohms (2W), and 2 ohms (4W), bottom to top curves respectively. (The solid curves are for the left channel, the dotted for the right—the 2 ohm reading was taken for the left channel only.) Fig.5 shows the THD+noise vs level curves (one channel driven). From left to right (above 100W level) these are for 8, 4, and 2 ohms respectively. The 1% distortion points were reached at 146.1W (21.65dBW) into 8 ohms, 248.9W (20.9dBW) into 4 ohms, and 365.4W (19.6dBW) into 2 ohms. Note that the "knees" of the distortion curves—which actually (in my opinion) indicate the maximum usable power of the amplifier—fall at approximately 140W, 230W, and 340W into 8, 4, and 2 ohms respectively. The importer of the RG-7 indicated that the amplifier would maintain a substantial power output into 16 ohms, so I tested it at that impedance also. The curve is not shown, but the knee of the 16 ohm distortion curve was reached at 68W, the 1% distortion point at 85W. These are about half of the figures for 8 ohms, and are what one would expect from a solid-state amplifier of typical performance.

With both channels driven, the RG-7 produced 143.2W (21.6dBW) (left channel) and 141.5W (21.5dBW) (right channel) into 8 ohms; 240W (20.8 dBW) (left channel) and 238.7W (20.8dBW) (right channel) into 4 ohms. The AC line voltage during these measurements varied between 114.5 and 115VAC.

Fig.6 indicates the response of the RG-7 to a 50Hz sinewave at 55W into 4 ohms. The second harmonic is down about 80dB (0.01% distortion). The rise at 120Hz is the second harmonic of the power-supply frequency (down about 85dB) and the third harmonic at 150Hz is down about 75dB (less than 0.02% distortion). The result of a combination of 19+20kHz tones fed into the RG-7 at 72W into 4 ohms is shown in fig.7, with artifacts barely recognizable, and down by at least 75dB in any event, which is excellent. Fig.8 is the THD waveform (top trace) at 30W into 4 ohms and is largely second-harmonic in nature.

—Thomas J. Norton

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**Fig.5** Symphonic Line RG-7, distortion [vs] output power, from bottom to top, into 8, 4, and 2 ohms.

**Fig.6** Symphonic Line RG-7, spectrum of 50Hz waveform, 8Hz–1kHz, at 55W into 4 ohms (cursor shows level of 120Hz power-supply frequency in between the second and third harmonic).

**Fig.7** Symphonic Line RG-7, HF intermodulation spectrum, 300Hz–30kHz, 19+20kHz at 72W into 4 ohms (linear frequency scale).

**Fig.8** Symphonic Line RG-7, 1kHz waveform at 2W into 4 ohms (top), noise and distortion waveform with fundamental notched out (bottom).
Postscript

"Hello, Dick. This is Klaus.” As soon as he’d read the preprint of my RG-7 review,² Klaus Bunge of German Acoustics was on the phone. His major point: “Why only 30 minutes?” Apparently the amp is supposed to be left on continuously. And while I broke the amp in extensively over a period of several months, it was only warmed up for 30 minutes before critical listening. There’s nothing in the instructions about continual operation, and I certainly don’t recall this from conversations with Klaus. “The power switch is in the back to make it more difficult to turn the amp off,” he tells me. In that case, why not eliminate the switch entirely so as not to tempt the user in this regard?

In any case, I did agree to spend additional time with the RG-7 after it was left on to cook for a considerable amount of time. Klaus also offered to loan me his Convergent Audio Technology SL1 preamp so I could log some time with the RG-7/SI-1 combination. This I also agreed to; this was the partnership that sounded so good at the 1991 winter CES.

As I reported initially, there were three main areas in which the RG-7 failed to achieve perfection. First, in the area of imaging, the soundstage depth perspective was not fully developed, and image outlines were distinctly on the 2-D side of reality. Harmonic textures through the upper midrange had a slightly dry flavor and were not well-integrated with the rest of the midrange. Finally, the upper bass and lower mids lacked weight (ie, sounded lean), while the deep bass lacked the ultimate in control.

The CAT’s Meow: I re-tubed the CAT SL1 with Golden Dragons, and for two solid weeks—day and night—had the CAT and RG-27 actively amplifying music while driving the Sound-Lab A-1 loudspeakers. It was immediately obvious that the CAT and RG-7 formed a musical synergism. But it took a full week before the combination really began to shine, most likely because the tubes in the CAT took that long to fully break in. Living with the CAT proved an intensely musical experience. This amazing preamp³ sonically just swept me off my feet. I’m in love with its exquisite reproduction of the music’s textures and dynamic shadings. I guess I expected romantic tube sound; instead, I was surprised by its tonal neutrality.

The RG-7 really ate it up. If the sound of the pre-CAT RG-7 was the taste of raw black coffee, then after a week of active work its sound turned noticeably sweeter, as though a lump of sugar had been added. The effect was never undone. The RG-7’s upper octaves did not turn cloyingly sweet, but assumed a more realistic harmonic integrity.

Viols began to sing sweetly, without the split-sonic personality that previously characterized the upper mids. Whereas before there was a noticeable break between the core of the midrange and the upper mids, now the transition was seamless, without change in timbre or texture. Soprano voices were reproduced with textural purity and just the right touch of sweetness. The RG-7 was fantastically effective in resolving massed voices without sounding analytical or resorting to the artifice of etching transients. A large chorus (eg, Belshazzar’s Feast, EMI SAN-324) was reproduced with individual detail and with dynamic shadings fully intact. There was no hint of congestion, or tendency to shout, when the chorus revved up to full voice.

The RG-7’s ability to realistically portray a soundstage also improved, especially in terms of depth perspective; the sense of space that makes Laudate! (Proprius 7800) so appealing was captured very nicely. Image outlines were focused within the soundstage, but did not pop into full 3-D relief. I wasn’t tempted to leap out of my listening seat and take a stroll within the soundstage, or reach out and touch someone. The transformation was from 2-D to about 2.5-D; close to, but not quite within reach of the imaging magic of, say, a Futterman OTL.

Good things also happened in the bass range. The deep bass had plenty of punch without loss of pitch definition. Plucked double bass and cello were resolved with excellent bass detail and flawless control. The balance through the upper bass range took on much-needed weight, though the authority of a large orchestra was slightly diminished by a lean balance that now encompassed primarily the lower midrange. While listening to symphonic music I was readily drawn into the music’s drama. The soundstage transparency afforded by the RG-7, and the felicity with which the music’s textures were reproduced, made it

² Readers should note that after the fully edited review has been set in type, we send a copy to the manufacturer or distributor so that they can prepare a “Manufacturers’ Comment” letter to appear in the same issue as the review. —JA

³ Though Anthony H. Cordesman reported on the sound of an earlier version of the SL1 in Vol.9 No.7 (November 1986), we have wanted to review a more recent sample of the CAT preamplifier for some time. Unfortunately, we have so far been unable to obtain a formal review sample. —JA

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very easy for me to get involved. Orchestral tutti, though, failed to whip up the proper measure of tonal weight. It was as if the RG-7 tightened its belt in this region and went on a diet.

Removing the CAT from the chain hurt the sound quality quite a bit. The upper mids lost their smoothness, though the gains made in bass control and depth perspective were still evident.

Summary: The RG-7’s sound is apparently quite sensitive to the choice of partnering preamp. To say that it greatly preferred the tube CAT SL1 to the Threshold FET-10/e would be an understatement. On the basis of my experience, a tube preamp would be a much safer bet with the RG-7 than would a solid-state unit.

When partnered by the SL1, the RG-7’s sound leaped forward forcefully into Class A territory. Its speed, and ability to resolve low-level detail naturally, were complemented by a sweet and focused voicing through the mids and treble. Purity and smoothness of musical textures were the RG-7’s prime virtues—it sounded simultaneously refined and suave. I don’t recollect another solid-state amp that has captured the heart of the music more convincingly. Provided that it’s left on to cook indefinitely, the RG-7 is a solid-state killer. To my ears it sounded much less mechanical than its immediate competition, while giving up nothing in the way of detail or speed.

No, the RG-7 is not perfect. Image outlines lack the ultimate in holographic magic. Perhaps even more seriously, its tonal balance is somewhat lean through the lower midrange. Use the RG-7 with a typical minimonitor would, therefore, be a liability. A full-range loudspeaker would make for a wiser load.

The Symphonic Line RG-7 amplifier is refreshingly free from the electronic glare and mechanical haze that afflict so many solid-state amps. But its lucidity is not achieved by assuming a polite or withdrawn sonic posture. The RG-7 is capable of unleashing dynamic contrasts and infusing life into the music’s textures in a totally believable manner. Do yourself a favor: audition this amp.

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**Acoustic Sciences Corporation**

**Studio Traps**

Jack English

Freestanding, self-contained, tripod-mounted, studio baffle. Floating suspension for height adjustments. Dimensions: 9” diameter by 45” L. Price: $255. Approximate number of dealers: 139. Manufacturer: Acoustic Sciences Corporation, P.O. Box 1189, Eugene, OR 97440. Tel: (503) 343-9727. Fax: (503) 343-9245.

The ASC Studio Trap (ST), designed as a piece of studio gear, is a long, cylindrical Tube Trap covered in a fire-resistant fabric available in a choice of colors. Like other Tube Traps, the ST is essentially a broad-band sound absorber.1 Also like other Tube Traps, the ST contains an internal midrange reflecting or diffuser panel which backscatters frequencies above 440Hz. The diffuser portion is located under approximately half of the ST’s vertical surface area. The cylinder can be rotated to have either the absorptive or reflective side facing whatever direction is desired.

In addition, the cylinder is mounted on a center pole with a tripod base. The cylinder itself can be moved up or down along the center pole, allowing the bottom surface areas to be as close as 6" to the floor or the top surface area as high as 6½' from the floor—covering an area 45" high at any one time. Inside the cylinder is a spring/friction system which allows the cylinder to be raised, lowered, or rotated with ease. Once properly positioned, the cylinder does not move. Each Studio Trap has epoxy-textured and -sealed endcaps with woven wire exoskeleton structures.

With both absorptive and reflective surfaces, the ST can perform multiple functions. In the studio, the trap can be used: as a corner trap, to eliminate midrange honk with adjustable brightness via reflection; as a true gobo,2 to create tem-

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1 See J. Gordon's Holt's review and overview of Tube Traps in Vol.9 No.3. —JA

2 A gobo is a sound-absorbing panel used to surround instruments in recording studios to provide a degree of acoustic isolation. The derivation is presumably from "go between."—JA

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porary walls to control crosstalk and adjust balances; as a wall trap, reducing midbass boost due to wall loading (with the potential to adjust balance using the reflectors); or as a means of creating a freestanding isolation booth, once again with the option of utilizing the reflectors to enhance intimacy and presence.

By now, I'm sure you're asking yourself what this piece of studio equipment has to do with the reproduction of sound from your system in your listening room. Simple: the Studio Trap can be used in your listening room in exactly the same ways it is used in the studio. A pair could be placed in the rear corners of your listening room (behind your system) to act as bass absorbers. One or more could be located in the center of the rear wall (again, behind your speakers) as a wall trap to reduce midbass boost. One could be located along each of your sidewalls at the maximum reflective points between your listening position and the location of your speakers to tame early reflections. A bank of them could be located behind your listening position to act as diffusers. In short, the Studio Traps are very flexible and useful as a means of making audible sonic changes within your listening room. I've used them for all but the last of the possible home applications. For virtually all of these purposes, they work exactly as claimed. The amount of change is dependent upon many factors, including the dimensions and environment of the listening room itself as well as the severity of the problem addressed.

For the purposes of this review, the ASC STs were selected as a specific potential solution to a couple of problems identified in my review of the Martin-Logan CLS IIA speakers (Vol.14 No.12). Dipole speakers like the CLS IIA radiate sound out the back as well as the front but not to the side. This rear radiation and its subsequent reflection present numerous difficulties in the placement of dipole speakers in any real-world listening room. The most common solution is to move the speakers about in the room to achieve the best possible overall compromise. Speaker placement is also a crucial variable with respect to bass performance, a notorious weakness of many dipoles. We typically are forced to trade off reflection/imaging precision against bass as we lug our dipoles about the listening room—a lousy deal in any casino!

The solution seems almost paradoxical. Most of us continue to think of ASC Tube Traps as devices to “soak up” excess bass (clearly not

Acoustic Sciences Corporation Studio Trap

what's needed with the IIAs) and as a solution for room resonance problems. Both assumptions are valid; Tube Traps are, after all, corner-loaded bass traps as originally described by Harry Olsen back in the '50s. But both widely held assumptions are unduly restrictive and could well cause

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us to overlook one of the real advantages of the Traps. Tube Traps, especially when corner-placed, are midbass absorbers and do nothing at all below a certain level to absorb deep bass in the average listening room. They will reduce midbass bloom, but will not attenuate the deep bass. These capabilities wonderfully complement the IIA's weaknesses.

Another key strength of Tube Traps is often overlooked but should be obvious. Sound waves from a speaker clearly reflect off a room corner in complex patterns that most of us have some intuitive understanding of. What is not as obvious is that we don't listen to one speaker—we listen to stereo pairs of speakers. Sound waves from each are radiated toward the center of the room as well, which can create havoc with both transients and center image precision. In the center of the rear wall is the acoustic equivalent of two more virtual rear corners in the room—a point of maximum pressure. This is where a third trap (the imaging trap) can theoretically work wonders. With a dipole, these problems are compounded by the simultaneous front- and rear-firing sound sources. If the back wave is absorbed, at least some portion of this complex wave problem can be dealt with to minimize reinforcement/cancellation effects.

Hmmm. While Tube Traps are generally thought of as wall- or corner-placed devices, wouldn't it seem likely that traps could be used to more directly tame some of the back wave from a pair of dipoles? It sure seemed so to me, and it obviously did to Art Noxon of ASC. The very first pair of Tube Traps built were placed directly behind a pair of Magnepans to minimize the back wave!

Placed directly behind a dipole, the trap works to simultaneously perform the roles of both corner and center rear-wall devices. This should reduce midbass bloom without adversely impacting deep bass performance. With the right trap behind a dipole, the speaker could be placed closer to the rear wall as a means of reinforcing the deep bass performance. Potentially, this closer-to-the-rear-wall placement might make dipoles a good choice for rooms that might otherwise be considered too small. Although I haven't tried the STs in such a situation, I would expect them to be useful in allowing dipoles to be used in what might otherwise be unacceptable rooms.

The ASC STs are ideally suited for the purposes I've outlined, especially in conjunction with the CLS IIAs. The ST's cylindrical height covers virtually all of the CLS IIAs radiating area. This height can be adjusted to match exactly; the ST's 45" surface is just slightly smaller than the height of the IIA's electrostatic panels. In addition, the CLS's curved panel results in a focal point for the back wave. The STs can be positioned behind each speaker at the exact focal point to dramatically minimize back-wave problems.

**Performance**

I used the STs with the Martin-Logan CLS IIAs as well as to control sidewall reflections with both ProAc Response Threes and Scientific Fidelity Teslas. They did an admirable job in this application, especially with the Teslas, which work best when spread very far apart. In such a setup, the Teslas must often be placed closer to the sidewalls than most other speakers.

The STs were placed at the sidewalls at the point where sound waves would reflect most directly. The net result was an improvement in soundstaging precision and focus. With an excellent recording such as Rachmaninoff's *Symphonic Dances* (Athena ALSW-10001), this improvement in focus was quite noticeable. Of particular note was the refinement of the precise layers of depth within the stage. With recordings lacking a believable soundstage in the first place (e.g., early mono hits on The Rolling Stones' *Singles Collection—The London Years*, Abkco 1218-2), the improvement was less valuable.

The STs had been selected specifically to deal with in-room problems identified with the use of Martin-Logan CLS IIAs. Specifically, the CLS IIAs had the following problems that could potentially be minimized with the ASC STs: an emphasis of midbass energy, often giving the speakers one-note bass; a lack of sufficient deep bass, causing the speakers to sound lightweight overall; and a beamy/phasye character in the trebles which caused the speakers to have different tonal characters depending upon the listening position.

When the IIAs were located closer to the rear wall, the midbass resonances were worse but the deep bass extension was slightly improved. Placing the panels closer to the rear wall proved a mixed blessing. The STs worked splendidly with this setup, doing nothing to diminish the newfound deep bass extension but significantly minimizing midbass boom. With the STs, overall bass performance became more coherent. There
was a reduction of the elevated midbass without losing any of the newfound deep bass extension. The net effect was a significantly more realistic bottom-end performance. Music once again had a semblance of bass foundation. The STs, coupled with the repositioning of the IIAs, led to a significantly improved tonal balance. In this application, the STs made improvements with virtually all recordings, including the Stones' mono hits.

With the IIAs well out in the listening room, the midbass was more boomy, the deep bass greatly attenuated. Listening to a recording such as the soundtrack from The Commitments (MCA MCAD 10286) was simply not satisfying. The performance lacked the foundation essential for this type of music. Moving the IIAs back toward the rear wall and adding the STs improved things significantly. The bottom became more believable, more realistic. With the firmer foundation, the music became more solid and natural. I was able to concentrate more on the vocals of Andrew Strong and Maria Doyle covering those classic soul tracks. My frustrations with the lightweight character of the IIAs, while not ameliorated, were at least somewhat pacified.

With the IIA panels placed closer to the rear wall and having the STs placed in the rear focal point of the back wave, the overall performance in the bottom was better but still far from complete. For example, the playful first movement of Shostakovich's Symphony 15, with Bernard Haitink and the London Philharmonic (London 417 581-2), was listenable and enjoyable, but sounded as if it had been written by someone else. The tympani whacks sounded like toy drums! I could hear something, but it certainly wasn't what was intended, or what was actually played.

However, tonal balance wasn't the only thing changed in this new arrangement. With the back wave damped, the overall soundstaging of the M-L speakers was altered. Without the STs, there were many more problems with front wave/back wave cancellations. This has often been described as a "venetian blind" effect. With the STs in place, much of the back wave was absorbed and diffused. The net result was less cancellation of the front wave.

Without the STs, the overall performance of the Shostakovich was more distant and spacious. In fact, the absorption of the back wave significantly diminished the overall spaciousness of everything played through the IIAs. This loss may be unacceptable for many listeners, as it robs the speakers of one of their unique attributes. With the STs in place, the performers were closer, the sound more immediate. The soundstage had less depth, but more precise placement. Highlighted soloists were more obviously taken out of their proper soundstage locations. In fact, this was more accurate but less satisfying (to me). I preferred the more distant and spacious presentation of the soundstage without the Studio Traps.

A similar result occurred with the surreal sonic landscapes of Robert Rich and Steve Roach's Strata (Hearts of Space HS 11019-2). With the STs in place, the presentation was closer and more immediate. There was less depth and space. On the upside, the tonality was warmer and richer. Without the STs, the sound was more distant and spacious but placement was less precise. This hauntingly beautiful new age music was more "spacey" without the Studio Traps.

With music lacking either a naturally expandable soundstage (such as the Shostakovich) or a euphonically desired one (Strata), there was not as much of a difference with or without the STs in terms of soundstaging. A good illustration of this was heard on Paul McCartney's Unplugged (Capitol CDP 7 96413 2). The performers were spread across the stage with little natural depth. Since most of the instrumentation was acoustic, the performers were closely miked. They should sound like they are "in the room" as opposed to being located well behind the speakers. This is exactly what was heard, with or without the STs.

**CONCLUSION**

The Acoustic Sciences Studio Traps are not for everyone. They are a costly accessory designed for specific purposes. Hopefully, most of you will have no need of them. They are designed to solve problems with a given system in a specific listening room. As advertised, they can effectively be used to resolve various bass problems. In addition, they can be used to tame certain reflections.

The Martin-Logan CLS IIAs specifically, and other dipoles in general, present unique problems in a typical home listening room. The IIAs' problems include a midbass emphasis, limitations of deep bass extension, and various front wave/back wave cancellations. The Studio Traps worked very well to temper these problems. Use of the STs allowed the IIAs to be placed closer to the rear wall, which led to an improvement in deep bass extension. With the STs located at the rear focal point of the IIAs with the absorptive side...
facing the dipole, midbass bloom was meaningfully tamed. However, these improvements did come at a cost. In this case, the openness and spacious presentation of the IIAs was diminished. The soundstage had less depth and was located closer to the listening position. However, the placement of performers became more precise, the overall sound more immediate.

If you suffer from the specific problems that the ASC Studio Traps have been designed to solve, they could be a useful investment. They were an effective tool when used with the Martin-Logan CLS IIAs, and should work similarly with other dipoles. The STs are strongly recommended for those specific situations for which they were designed.

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**"But That SUUUUUUUUUUUUUUUCKS!!!!!!"**

Corey Greenberg searches for signs of midpriced CD life with players from Denon, Sony, JVC, NAD, and Sonographe.


JVC XL-Z1050TN Bitstream 8x-oversampling CD player. Frequency range: 2Hz-20kHz. S/N ratio: 114dB. Channel separation: 110dB at 1kHz. Output level: 2V RMS. Dimensions: 17.8" (452mm) W by 4.5" (113mm) H by 13.4" (341mm) D. Weight: 17 lbs (7.75kg). Price: $800. Approximate number of dealers: 100. Manufacturer: JVC, 41 Slater Drive, Elmwood Park, NJ 07407. Tel: (201) 794-3900. Fax: (201) 523-3601.

NAD 5425 MASH single-bit 4x-oversampling CD player. Frequency response: 5Hz-20kHz ±0.5dB. S/N ratio: 106dB. Separation: >1000dB. Output level: 2V RMS. Output impedance: 120 ohms. Dimensions: 16.5" (420mm) W by 3.3" (84mm) H by 9.8" (250mm) D. Weight: 11.6 lbs (5.25kg). Price: $299. Approximate number of dealers: 300. Manufacturer: NAD, 633 Granite Court, Pickering, Ontario LIW 3K1, Canada. Tel: (800) 263-4641. Fax: (617) 762-8558.

Sonographe SD-22 single-bit CD player. Frequency response: 5Hz-19kHz ±0.5dB. Output level: 0.64V RMS. S/N ratio: 90dB relative to 0.64V output level. Dimensions: 11.25" (288mm) D by 17.125" (435mm) W by 3.75" (95mm) H. Weight: 12 lbs (5.5kg). Price: $895. Approximate number of dealers: 100. Manufacturer: Conrad-Johnson Design Inc., 2800R Dorr Avenue, Fairfax, VA 22031. Tel: (703) 698-8581. Fax: (703) 560-5360.

Sony CDP-X555ES "Pulse Converter" CD player. Frequency response: 2Hz-20kHz ±0.3dB. S/N ratio: 117dB. Separation: >110dB. Output level: 2V RMS. Dimensions: 18.5" (470mm) W by 4.9" (125mm) H by 14.75" (375mm) D. Weight: 28 lbs (12.8kg). Price: $900. Approximate number of dealers: 250. Manufacturer: Sony Corporation of America, Sony Drive, Park Ridge, NJ 07656. Tel: (201) 930-SONY.

One of my favorite parts of writing for Stereophile is reading all the heartfelt letters our readers take the time to write me. There's nothing I like better than to kick off my boots, stretch out on the futon-couch, and let the groovy love vibes just shine off the pages. Time doesn't always permit a reply, but for now... AS in MD: thanks! RP in CA: sure, why not? And SH in IN: I've tried that, but it chafed. One day I got a letter from right here in Austin, from a 15-year-old audiophile named Chris. Chris sounded like a good lil' guy, so I called him.
up and suggested we go grab a burger. I guess it was his age that intrigued me; when I was 15, I had a cheap JVC jambox, a big gnarly pair of Koss headphones, and I thought it couldn’t get any better than that! I’d lie in bed at night with the JVC balancing on my chest, the sweet lullabies of Led Zeppelin wafting me off to sleep, the sweat pouring out of my ears from the hermetic seal of the ‘phones. Maybe I wanted to reclaim some of my youth by association; maybe I just wanted to see if I could weasel a meal out of the kid. Either way, I wanted to find out just what made a 15-year-old audiophile tick.

Well, to say I was impressed is putting it lightly; this kid knew more about audio gear than most adults I know, and he said he owed it all to Stereophile (smart boy). We chatted more over the meal, and after a while the topic swung around to digital. Chris mentioned that he owned a budget-level CD player, but that the sound drove him nuts; what he really wanted to buy was a Theta.

I choked on my chicken breast; a Theta?! Which one, I asked?

“The Generation II! Man, as soon as I save up enough money, I’m buying it!!”

I mulled over this for a Texas minute. On the one hand, I could easily relate to Chris’s 15-year-old impatience with anything that represented “second-rate”; I remember drawing endless pictures of Fender Stratocasters all over my school notebooks, dreaming of the day I’d finally own one. But c’mon! When you’re 15, four grand for anything besides braces is INSANE! Fifteen-year-old boys are supposed to be running around in wild packs, terrorizing the commonwealth and trying to get into 15-year-old girls’ pants, not worrying about things like high-end audio. When you’re all grown up and 15-year-old girls are illegal, then you can buy a

“Chris, the Theta is killer, but there’s other gear out there that’s really good too, and for a lot less money—”

“Like what?” he snorted, just like I used to, in that perfectly executed 15-year-old way that made white steam shoot out of my folks’ ears.

“Well, like the Audio Alchemy DDE—” I began, but Chris banged his fists on the table in frustration.

“BUT THAT SUUUUUUUUUUCKS!!!” he yelped.

“Waitaminute! Have you heard the Audio Alchemy?”

“No.”

“So how do you know it sucks?!!”

“CAUSE ROBERT HARLEY SAID IT SUUUUUUUUUUUUCKS!!!”

End of discussion.

After I drove Chris home, I thought some more about what he’d said and why. Because the truth is, Bob Harley didn’t say the Audio Alchemy DDE SUUUUUUUUUUCKED; in fact, he praised it as being a hell of a nice-sounding unit for the bucks. Of course it’s not a Theta! If you could get something that sounded like a Theta for under $400, you’d see Neil Sinclair and Mike Moffat on those news stories about the home-less. No, what Bob said was that the Audio Alchemy just wasn’t up to the ultimate performance of the more expensive processors, and it occurred to me that there’re probably a lot of readers, some quite a few moons past 15, who think that anything less than a Theta, Stax, or a Krell SUUUUUUUUUUUUCKS. And it’s not so.

For one thing, it’s all relative; just as there are some people who can afford to spend whatever it takes to get the highest level of sound quality available in their homes, there’s a whole lot of us reg’lar folks who can’t. I’ll bet that there’ve been more Rotel RCD-855s and Audio Alchemy DDEs sold over the last year than all the mega-buck processors combined. My mission was clear: find Chris a good midprice CD player or face the wrath of his folks, who for some reason think I’m the one putting all these expensive audio-notions into their boychik’s head.

DENON DCD-2560: $750
My first CD player was a Denon DCD-1800, the grandpappy of ’em all. It was big, clunky, and sounded like, well, you can read back issues to find out what it sounded like. But I was living in a fraternity house at the time, the kind of place where you wake up the next morning after a blow-out to find five plastic cups half full of stale margaritas merry-go-rounding on your turntable because whoever broke into your room during the party snapped your cartridge’s cantilever off trying to hear the backwards messages on The Wall and decided to leave you an artistic message to buy a better needle next time, dude. Also, I spent far less time sitting in the sweete spotte getting lost in the superb resolution of inner detail than I did balancing my big-ass Genesis speakers out on the windowsill facing outside so we could have music to drink kegs by. So CD made a lot of sense.

To Denon’s DCD-2560, I say, “you’ve come
a long way, baby!" Sure, it's still heavy; it's still a Denon. However, the 2560 is a far sleeker unit than my old 1800: easier-to-use controls, better programming protocol, even the transport is smoother in operation. Somebody spent a lot of time getting this player to ooze "solidity." The internal build quality is excellent, with a nice-sized power supply and good-quality parts. Small-value film caps and 5532 dual op-amps populate the analog stage, which is AC-coupled to the outside world with what appear to be two large Elna electrolytic caps in parallel with a film bypass for each channel. In addition to the fixed and variable outputs, the 2560 has both Toslink optical and coaxial digital outputs.

Aside from all the usual Every Programming Capability You'll Never Need, the Denon sports one feature unusual in a consumer CD player: PITCH CONTROL! Don't laugh! For us guitar players, the lack of pitch control is one of the worst things about the CD Revolution; used to be, you could slow down or speed up your turntable to match the pitch of Magic Sam's "West Side Soul" to your guitar's standard E tuning while you tried to steal as many licks as you could grok. The Denon came in handy when I bought the new, posthumous CD of the late Stevie Ray Vaughan, The Sky Is Crying (Epic EK-47390); as Stevie always tuned his Strat down to E-flat, all I had to do was tweak the Denon up in pitch to play along in E-natch', even if the now sped-up guitar licks were even harder to cop! Good thing my digits don't creak. Yet.

Technically, the Denon has more in common with the Kinetics, Thetas, and Proceeds of the world than the typical Japanese player. For starters, the 2560 uses four Analog Devices AD-1862 20-bit DACs, two for each channel in push-pull configuration. These DACs are flanked by their attendant MSB trimpots, which Denon hand-trims for highest linearity at the factory. Denon operates these high-quality chips in an interesting configuration they call "Lambda D/A Conversion"; to minimize the zero-crossing distortion caused by MSB nonlinearity, the data stream is taken from the digital filter and duplicated so there are two data streams. After adding a constant digital "bias" to each data stream, positive-going for one and negative-going for the other, the data streams feed the 20-bit Analog Devices DACs, whose analog outputs are then summed; as the bias signals are opposite in value, they ultimately cancel, but the resultant signal is biased away from the zero-crossing line, eliminating that source of distortion. The tradeoff (there's always a tradeoff) is that for high-level signals requiring the full dynamic range of the DACs, the Lambda process is momentarily disabled, the high-level signals then theoretically masking the residual distortion.

**JVC XL-Z1050TN: $800**

The 1050 is the Bitstream successor to JVC's popular 18-bit XL-Z1010, which got an enthusiastic thumbs-up from Robert Harley in Vol.13 No.4. Its styling is, in my opinion, much improved over the older player's, with the distinctive brushed-bronze finish of the rest of JVC's XL-Z line. The rear panel sports fixed and variable outputs, as well as Toslink optical and coaxial digital outputs. As with the 1010, the JVC features their proprietary K2 Interface, a circuit that reduces jitter by resampling the pulses with a short-duration gate just ahead of the single-bit JVC JCE-4501 DAC.

Internally, the 1050 looks impressive, with a much beefier power supply than most mass-market CD players I've examined; the power supply is supposedly one of the improvements made to the 1050 over the older 1010. The aforementioned K2 Interface circuit is enclosed in a shielded mini-enclosure, to guard against both

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1 Ignore these; as with every other player I've tried that had them, the variable outputs sound significantly worse than the fixed pair. C'MON! Get off that fat ass and change the volume atcher preamp, soldier!
electrical interference and prying reviewers. The analog stage features the same blue-blob film caps I keep seeing in all the Japanese players, including the Sony and Denon, and the ubiquitous 5532 op-amps, one chip for each channel. The outputs are AC-coupled with extremely large-sized 47µF/50V electrolytic caps.

**NAD 5425: $299**
The 5425 is a MASH machine utilizing the MN6471 DAC, which has balanced analog outputs. These are summed by one half of a 5532 acting as a differential amplifier, and then taken to a five-pole active filter. NAD makes much of the fact that they operate their 5532s without stressing them into TIM as do many other manufacturers, which is a pretty noble concept at this price level. The analog section is built around another pair of 5532s, small-value film caps, and the aforementioned 25µF electrolytic coupling caps.

What can I say about this player? How about this: Remember when you were in high school PE and you had to split the class up into two teams for dodge-ball, scooter-tag, etc., so Coach Scrotem picked two captains to choose sides? And there was always this one scrawny kid left at the end who nobody wanted? What? That was you?! Eh, forget that analogy.

Aw, what the hell, I’ll just come out and say it: the NAD 5425 is the runt of this litter, a lil’ grey churchmouse of a CD player. I half-expected it to squeak, “Hey, gimme back my lunch money you guys!” when the drawer opened. It’s too light. It’s too plastic. It’s too cheap.

Look inside: it’s every cheapie Asian CD player you ever ran in horror from. Teenie-tiny power transformer, ceramic caps all over the place...the output RCA jack assembly makes the flimsy stock Philips jacks look like Tiffanies. The analog outputs (there is no digital-out jack) are AC-coupled with some of the cheapest-looking 25µF/25VDC electrolytic caps I’ve ever seen. This may finally be the one cheap CD player the modkateers don’t try to upgrade; where would they start?!

The styling is standard NAD; you either like it or you don’t. Believe it or not, I actually liked the 5425’s controls better than any of the other players’. They’re big raised buggers and impossible to miss, unlike the seemingly endless rows of identical buttons on the more expensive machines. And because of its easily distinguishable controls, the NAD was far and away the easiest to deal with in the dark, which is not unimportant in my book.

**SONOGRAPHEN SD-22: $895**
While many of the “modded Philips” firms simply replace the plastic “Philips” or “Magnavox” logo with their own after completing all their internal circuit mojo, Conrad-Johnson goes quite a bit further by wrapping the stock plastic flimsy-luxe box with their own heavy metal skin, making for a much stronger and nonresonant chassis. Unlike many of the modkateers, C-J doesn’t replace the fairly flimsy stock RCA jack assembly of the Philips machine; in my experience, this is one of the first things to go bad on such a unit, as the contact integrity is usually
poor and gets worse. Replacing the RCA assembly with high-quality gold RCAs would’ve raised the price of the SD-22 another $50–100, but I think the long-term reliability might be worth it. The SD-22 has no digital-out jacks, only analog outputs.

Looking inside reveals the previously barren right-hand side of the Magnavox chassis to be filled to the brim with C-J’s own analog board and additional supply regulation. As with all Conrad-Johnson designs, extreme attention is paid to the power supply; in C-J’s Tor Sviverton’s words, “The audio circuit and the power supply can be compared with a scissors; to make a clean cut, both blades must be sharp.”

GO TOR GO!

And as with previous C-J designs, the usual electrolytic power-supply caps are eschewed in favor of expensive film types. While it’s becoming fairly common practice for designers to bypass power-supply ‘lyrics with small-value film caps in order to lower supply impedance at high frequencies, C-J is one of the very few companies to utilize film caps exclusively in many of their power supplies. In a nice touch, the Philips CDM-4 transport’s hold-down clamp is damped from vibration with what looks like white modeling clay.

The analog stage is unique among CD players; whereas the bitstream SA7321 DAC’s analog output is usually taken to an op-amp-based filter/gain stage, in the SD-22 the DAC’s analog output feeds a discrete-FET 35kHz 3rd-order buffered Bessel filter with unity gain. Tor Sviverton explained that to increase the SD-22’s output to the de facto 2V RMS standard would require an additional gain stage, along with its attendant coloration. Because of the much lower than usual output level, Tor stresses that the SD-22 not be used with unity-gain preamps such as the many passive designs on the market as well as my own Homemade Buffered Passive Preamp detailed in the November ’91 issue.

Well, where I’m from, we don’t let no Norwegians tell us we can’t use no unity-gain preamps, no SIR; luckily, with my volume control fully cranked, I got a just-useable playback level out of the Sonographe CD player, although this is most certainly due to the higher-than-average sensitivity of the VTL 225 amps. I’m not saying I was blown out of the room, but it was loud enough to dig on a fairly consistent basis. I would recommend, though, that you couple the SD-22 with a preamp with a bit of gain under more normal circumstances; ie, if you’re not bound by the Reviewer’s Sixth Commandment: “Thou shalt not run one CD player through a gain stage when all others are auditioned without one.”

SONY CDP-X555ES: $900

I’ll give the Giant Japanese Conglomerates one thing; they build their CD players like Humvees. The Sony exudes pride in ownership; from the simulated-wood side panels to the copper-shielded chassis, the Sony is a very impressive-looking player. Typically, however, Sony chose to marry a very sophisticated digital section with what

2 The others are:
I. Thou shalt not get Gear that representeth current production.
II. Thou shalt not finish writing a review of a Japanese product before it is discontinued to make room for a new model.
III. Thou shalt not cusseth, discusseth thy bodily functions, or otherwise deviate from describing the inner liquidity of thy Gear.
IV. Thou shalt not speak Jack Lord’s name in vain.
V. Thou shalt not covet Scottish women with large husbandry.
VI. Thou shalt not sayeth “fat,” even if thou dost.
VIII. Thou shalt not feel avarice toward Bob Harley when thou seesth all the cool stuff he hath in his system.
IX. Thou shalt resolve to write a little bit every day, but wind up writing the whole thing until 4am the night before deadline anyway.
X. Love Thy Reader.
appears to be a standard mid-fi analog section featuring Texas Instruments 5532 dual op-amps, carbon composition resistors, and inexpensive electrolytic coupling caps. The 555ES has both fixed and variable outputs, and a Toslink optical output. There is no coaxial digital output.

Among the many engineering highlights are the “Direct Digital Sync” anti-jitter circuitry, 8x-oversampling digital filter with 45-bit internal registers, separate power transformers for the digital and analog sections, and the star of the show: Sony’s own 45MHz Complementary High Density Linear Converter DAC system. Sony maintains that “the primary component inside a CD player that determines the sound quality is the digital-to-analog converter,” and even include several graphs showing different DAC linearity patterns and their characteristic sound qualities. The Sony CXD-2552 DAC has four complementary outputs; in the 555ES, two such DACs (one for each channel) are used to create eight outputs, which simultaneously increases the dynamic range by 6dB by reducing even-order harmonic distortion and doubles the output current. In addition, Sony’s Direct Digital Sync circuit minimizes jitter at this critical stage.

**Aunt Silly Airy Gear**

Just about the only change I’ve made to my system has been replacing VTL’s Compact 160 monoblocks with their larger KT90-version Deluxe 225s; I need more juice than the 160s were able to swing, and the triode-wired Deluxe 225s are just the ticket. The new 225s extend the virtues of the Compact 160s (triode mode only for these amps) further in nearly every direction, with even clearer midrange textures and Amazing Space. And as the new VTLs are too big to fit on the books I had the 160s sitting on, I’ve got the 225s up on sky-blue plastic milk crates courtesy of the local Safeway one night when I went to steal them.3

Other gear used to evaluate the CD players under review included my own buffered passive preamp, Spica Angelus speakers in cahoots with the Muse Model 18 subwoofer, and the Theta DS Pro Basic and Audio Alchemy DDE v1.0 digital processors for comparison. Interconnections included Straight Wire Maestro, AudioQuest Lapis, and XLO type 1, while speaker cable remained the Straight Wire Maestro. All gear was plugged into the Audio Express NoiseTrapper Plus and NoiseTrapper 2000 AC line conditioners. The book most often read while listening in order to avert my attention and thus achieve the highest right-brain sensitivity was Greil Marcus’s *Dead Elvis* (Doubleday).

**WHO’S ON FOIST?**

Denon DCD-2560: The first impression the Denon gives is good, solid bass reproduction; one of the CDs that spent a lot of time in my system has been the soundtrack to *The Commitments* (MCA MCAD-10286; reviewed in the January issue), and the Denon seemed to have both the tightest and most pronounced bass of any of the players reviewed here. Of course, this is electric Fender P-bass we’re talking about here, not some audiophile organ recording, so what I’m calling bass here is the 40–200Hz range, I guess what a real audio reviewer would call the lower-midbass to the over-easy-hold-the-taters-upper bass/lower midrange. Whatever, the Denon has a fine, firm bottom end that endows pop and rock with a satis-

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3 I’m pretty confident none of our readers are audiophile grocers; if you had to listen to Muzak underlaid with subliminal “Don’t Eat Those Ding Dongs And Then Shove The Empty Wrappers Behind Those Cans Of Cling Peaches” messages all day long, the last thing you’d want to hear at quitting time would be music.
fying, pulsing foundation.

Unfortunately, that’s about all I can enthuse about. Because while the bass was the best of the bunch (the opening sub-bass room noise at the very start of the Cowboy Junkies’ Trinity Session, courtesy of the mighty Muse subwoofer, made my kidneys hurt), the Denon was outclassed in virtually all other areas of performance. Even after a month of infinite-repeate Motôrhead, the Denon had a veiled, chalky midrange that seemed to persist no matter what cables I used with it. The high end, too, was off-putting: following a subdued presence range, the trebles were hard enough to make me not want to continue listening.

Lapis interconnect did much to reduce the glare, but the overall sound still lacked life. Joe Henderson’s tenor intro on track five of the Chesky Bros.’ McCoy Tyner disc (New York Reunion), a 3-D live-in-the-room track through the Theta DS Pro Basic, became less emotionally stirring, as if Joe were merely warming up instead of really blowing. Switching to the XLO cable did little to change things, the sound still lacking that essential harmonic righteousness that clues the brain to “Dig This.” And it doesn’t take a $2000 Theta to hear this quality, either; the $399 Audio Alchemy DDE has it, the similarly priced Rotel RCD-855 has it, even the lil’ $299 NAD 5425 a couple of pages down the river has it. Without that indefinable “rightness,” I find it extremely hard to pay attention to the music. Whenever I find myself trying to remember if there’s anything I forgot to take care of at work while I’m sitting there listening to music, I know something’s desperately wrong, and that’s just what I found myself doing with the Denon.

I won’t go much into areas like depth, soundstaging, and imaging, because the Denon was disappointing in these areas. Imaging featured inflated center-fill and next to no discrete image outline; on The Trinity Session’s first track, Margo Timmins’s vocal, usually very starkly defined, was vague and shapeless, changing position as her voice went up and down in range. I could go on, but it would be cruel; space, the Denon doesn’t do.

To say I was surprised by the relatively poor performance of the Denon DCD-2560 is putting it mildly; its litany of advanced technology and use of edge-of-the-art DACs suggested greater things, but in practice it sounded pretty mediocre. For nearly the same green, I got true high-end digital sound with the Audio Alchemy DAC/Rotel 855 transport combo.

JVC XL-Z1050: “The JVC gets the midrange right”; that was my first thought when I heard it, and it’s still the player’s most salient characteristic. Vocals seem to hang in midair with the 1050, which in this area almost rivals the Theta DS Pro Basic. Where the Theta edges the JVC is that last dollop of 3-D dimensionality it’s become so lauded for, but the JVC offers a very similar midrange presentation, one that’s totally unexpected from a mass-market Japanese CD player. With certain CDs like the amazing-sounding new Kenny Rankin Because Of You (Chesky JD63), the vocals are very nearly as finely rendered, as grainless, and as spatially distinct as the Theta, which is extraordinary performance for the money.

Low-level detail, too, is a strong point with the 1050; which almost seems to swagger, “Ya want fractals? I’ll give you fractals!” In what seems to be a trend for me and Stevie Ray Vaughan CDs, I caught a bit of extremely low-off-mike vocal scattering at 2:11 into the jazzy instrumental take of Kenny Burrell’s “Chitlins Con Carne” that I hadn’t noticed before with several of the other players reviewed here. Another example of the 1050’s clean low-level behavior was the track “My Romance” on New York Reunion; I was listening to it one day when suddenly I thought I heard my name being called from outside my house. “It’s those guys that beat the crap out of Dan Rather!” I gasped, maybe a little paranoid after watching David Duke stomp Buddy Roemer in Louisiana’s gubernatorial primary. But no, there it was at exactly ten seconds into the track; either the piano’s pedal is squeaking “oh-ee,” or David

4 Each of these players was broken-in for roughly a month before I sat down to listen. I fed them CDs, set ‘em for infinite repeat, and hooked their fixed outputs to a 10k load (you can make this by soldering a 10k resistor between the signal and ground of an RCA plug, or alternately, you can just hook the player up to an input on your preamp, turned all the way down), which ensured that signal would flow through the audio circuitry, output coupling caps, wire, etc. If you leave the output jacks unterminated there’s no signal flow, and all you accomplish is a ha’pennyorth’s higher electric bill. This is a good way to break in interconnects as well, although an FM tuner set for interstationhis puts less wear on your player.

5 One of the highlights of my trip to this past AES convention in New York was spending some time with Chesky’s Bob Katz in his listening-room/design-lair, listening to some of his latest work. In my opinion, Bob is one of the most talented recording engineers today, and the tracks that we heard were, to a one, uncanny. The Rankin CD may be the Bobkat’s best-sounding release to date, even if the music is a wee-bit white-bread for my unhallowed palate (although the bass-vocal duet on Monk’s “Round Midnight” is killer).

6 Am I the only one who thought former Klattmate Tom Metzger’s comment about Duke’s KK tenure in the November 18th Newsweek—“His flagrant womanizing was an embarrassment to the movement”—was the funniest thing ever in that magazine?
Chesky's trying to wrest control of my mind. This kind of hyper-detail is a trick at any price, much less the JVC's $800 retail tag.

Where does the dream end? The deepest bass doesn't have that balls-to-the-wall slam of the Theta, or even of the otherwise unremarkable Denon DCD-2560. It's fairly clean, but you don't get the ultimate extension and control of the more expensive processor. Even so, the JVC never failed to get my mojo working on material like The Commitments soundtrack, or especially disc 7 of the Stax/Volt box set, with its heaven- sent chronological medley of Otis & Carla's "Tramp," "Soul Finger" and "Knucklehead" by the Bar-Kays, Otis again on "Shake," Albert King's "Born Under A Bad Sign," and finally Sam & Dave's "Soothe Me." Unbelievable, heroic ART that makes a bunch of GIANT UMBRELLAS STUCK IN THE GROUND seem infinitely pointless by comparison.7

How does the JVC do it? The same way most inexpensive gear that aspires to high-end performance does it: by sinning mostly by omission. Where the JVC does this is at the frequency extremes; the bass isn't the deepest or strongest, and the high end is slightly rolled-off and forgiving. Not sweet, just forgiving. By avoiding the typical astringency in the high end of most players in this price range, the 1050 draws you into the presentation, where the clear-as-a-bell midrange and above-average depth/staging deliver the knockout punch. Whether you can pin it on JVC's proprietary K2 anti-jitter circuit or the enhanced power supply, the 1050 takes the same 5532s, electrolytic coupling caps, and mid- grade resistors as the Sony and Denon players, and delivers a sound that's on a whole other level entirely. In fact, I preferred the sound of the 1050 to the similarly priced Audio Alchemy/Rotel 855 combo, which I found to be more forward and slightly harder-sounding through the mids and highs. Add in the fact that the JVC player was also the best-sounding transport of the players that had coax outputs, and the 1050 looks like a winner.

For $800, I'm not sure you can do much better than the JVC XL-Z1050; it offers a musical sound, good looks, and can serve double-duty as a really fine transport if you decide to buy a separate processor down the road. Chris—this one's got your name on it.

Sonographe SD-22: Ah, the Sonographe. What a sweetie of a CD player, what a musical, easy on the ol' hammer-anvil-stirrup sound. If it had enough output to go with my gaminess preamp, I'd probably buy it outright; if your preamp's more typical—ie, has gain to lift the 10dB lower level of the SD-22 to drive your amplifier—this is where you should start shopping. The Sonographe is so good, so sonically pleasing, that I find myself smiling even as I two-finger this review out.

For starters, the SD-22 is LUSH. Oh man, it is lush! The high end is a bit rolled-off for sure, but god, man, who cares when it's this LUSH? I put on Coltrane's A Love Supreme one night, and by the end of the disc I was wearing an orange Nina Simone dashiki and eating peeled plums in the lotus position. I just couldn't focus on matters of image depth, soundstaging, tonal balance, etc. with the SD-22; with well-recorded CDs, I got lost in the music every time.

Even though it's all FET, the Sonographe is clearly a C-J design: it's got the warm romance of tubes in spades! Is it accurate in the absolute sense? Who GIVES a damn? The SD-22 is clearly not the most neutral, straight-line-with-DAC player available; in fact, I'm not even sure it was ever designed to be that "accurate" in the first place. But what it positively excels at is communica- tion of the real essence of the music, and I'm beginning to feel that THAT is the most impor- tant goal a piece of audio gear should strive for. Look, life is too damned short; the way I see it, you either: a) Lie on your deathbed with the whole family weeping around you, wheezing, "AHA! [cough cough] I finally achieved total, perfect accuracy in my hi-fi system! [gasp] It took 50 years and the kids' college money [gasp]... but I showed 'em! HAHAHAHAHA [UNGH]!... r-rosebud... [shmp]"; or b) Find gear like the SD-22, the Spica TC-50 speakers, the old Dynaco Mk.III tube amps; components that somehow, in the face of obvious deviations from that straight'n'narrow, allow the organic, emo- tional feeling of music to stir, enthral, and enrich your life.

Uhm... I choose B.

About the only areas I found lacking in the Sonographe were the final octave of bass and the ultimate dynamic ceiling, both of which I felt were somewhat restrained. But it was only on certain recordings I noticed these faults, like JA's Chopin recording on the Stereophile Test CD; when Anna Maria bashes on them 88s, the sound doesn't quite leap out at you like it does.

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7 Albert King never got uprooted by the wind and smashed some poor lady. I rest my case.
with the Theta, or even the Audio Alchemy, which really suffers in all other areas with the SD-22. The bass is good, but not spectacular; it's fairly tight and well-defined, but this is not a ballys-sounding player. Rather than bowl you over with the thunderous drum thrwacks on Reference Recordings' Fiendal disc, the Sonographe reproduces them as clearly defined images at the back of the Myerson. Nothing bowls you over about this player, except how good you feel while listening to it.

I listened to a lot of rock on the SD-22, and I think that music lovers who listen mainly to rock should give this player a very careful audition. I liked it with every recording I played on it, but while discs like the new Red Hot Chili Peppers' Blood Sugar Sex Magik (Warner Bros. 26681-2) certainly came across as gutsy, raw, and powerful, the SD-22's superior focus tends to mercilessly unravel multi-miked recordings, sometimes to the distraction of the music. The slightly rolled-off high end helps with harsh-sounding discs, though; in fact, the SD-22 sounds very much like it was "voiced" to complement good analog-based systems. If you've spent a lot of time optimizing your gear, cables, and speakers for digital, you may find the SD-22 too polite. But if you're still an analog stalwart and want to add CD without throwing your system out of whack, the SD-22 may be heaven-sent.

One strange bit: the review sample stopped abruptly at 9:43 into track 8 of the Chesky McCoy Tyner CD, every time; it would simply stop playing, as if the disc had ended. It didn't do this on any other disc I tried to repeat this with, nor did any of the other players stop at that point with the Tyner disc. Maybe C-J, like the Navajos, purposefully sewed a "flaw" into the SD-22, so, like the Navajos with their legendary blankets, they wouldn't be forced to mock their gods. Attention: I am kidding.

If this player had a coax digital output, this would be the one I'd recommend for Chris, but the boy's got that Theta Fever; you can see it in his eyes, in the way he holds his fork and knife. Sooner or later, he will get the Theta, so the SD-22's lack of a dig-out jack is, for him, a fatal flaw.

With the shortcomings noted, the Sonographe SD-22 is a highly musical player, offering an even more involving listening experience than many of the lauded megabuck processors I've heard. If it's accuray you strive for, look elsewhere. But if you're looking for a rich, emotionally stirring, always-satisfying CD player under a grand, the SD-22 is one you need to hear. Highly recommended for the peeled-plum eater in all of us.

Sony CDP-X555ES: Like the Denon 2560, but unlike the JVC XL-Z1050, the Sony player couples advanced technology and flawless build quality with mediocre sonics. And again like the Denon, its only real strength was its bass, which was lean, clean, and powerful. But good bass alone does not a CD player make.

The biggest problem with the 555ES is in its rendering of space; there isn't any. Faraway sounds are reproduced at the correct level, timbre, etc., but there is a distinct lack of ambient envelope that tends to sterilize all music played through it. Even JA's piano recording on the Stereophile Test CD was stripped of the ambient dome, the reverb tails that tell you this was recorded in a hall, not a black hole. This has the unfortunate effect of squashing depth, so that front-to-back distance is effectively neutered for all practical purposes. On the Cowboy Junkies disc, the drums sounded as if they were right behind the vocal, and you KNOW that ain't right!

Tolnally, the Sony is quite bright, with the glare and stridency typical of mass-market CD players in general. I really heard no improvement with the 555ES over many of the sub-$300 players, Sonys included, that make up the vast majority of units found in non-audiophile homes. Strangest of all, there seemed to be a very odd phasing anomaly in the midrange, which absolutely destroyed any kind of image integrity. Margo Timmins sounded decent if I held my head locked in one position, but if I moved even slightly to one side, her image collapsed, wandered, or otherwise changed timbre. Listening to the same track over the Theta, Sonographe, and Audio Alchemy, her image held up no matter where I moved my head. Subjectively, this quirk had the effect of forcing me to lock my head in a vise; hardly the kind of thing I want to come home and nuzzle up to at the end of a long day.

I found myself reacting to the Sony the same way as I had with the Denon: either agitation or boredom, and no combination of cables, plug polarity, or sticking a triangle of electret-foil between my cheeks made matters any better. Sony may build very reliable, solid CD players with a ton of features, but unfortunately in the case of the CDP-X555ES, good sound quality isn't one of them.

NAD 5425: The li'l NAD was, for me, the big-
gest surprise of the lot. NOT because it's a giant-killer like the now-discontinued Rotel RCD-855; it's not. NOT because it rivals the Sonograph in ease of emotional flow; it doesn't. And NOT because it really, really excels in one or two musically important areas; it don't. Then why was it such a surprise, you ask?

When you get a piece of gear like the Theta, the VTL 225 amps, the Lyra cartridges, you run these puppies through the WRINGER, because not only are they expensive, but they do so few things wrong that you have to get out the X-Ray Spex and really hunt for problems. For what you pay for these products, they'd better sound kick-ass!

But when you take something like the $299 NAD, all that critical hoo-ha evaporates; you can't POSSIBLY hold the lil' guy up to the same criteria as the typical high-end product! So you don't. You listen to it with almost zero expectations. And when you're all set to run from the room because you just KNOW that a player this cheap can't possibly sound good, the music starts. And you go, "Hey! That's not half-bad!"

Don't get me wrong; the NAD will not give you the bass impact of even the Audio Alchemy DDE, which I find a bit lacking in this area. Nor will it rival the bang-for-the-buck Rotel RCD-855. What it will do is not sound half-bad. And that's actually better than what the twice-as-expensive Denon and thrice-as-expensive Sony players were able to accomplish. You heard me right; I preferred the sound of the el-cheapo NAD 5425 to the $750 Denon and the $900 Sony.

I preferred the NAD for a number of reasons. First and foremost, it has little or none of the glare, the off-putting brightness of those players. The NAD's top end is most definitely downward-tilted, to the detriment of sparkily sounds like cymbals, castanets, and that sea-shells-on-a-string thingie they're always shaking on Ana Caram's CDs for that authentic South Seas flavor ("Those of you in the first five rows: you will get wet"). On the other hand, you never clap your hands to your ears the way you do with every single other sub-$300 CD player out there, the latest Magnavoci included. That alone is reason to recommend the 5425!

There's an overall ease to the NAD that's a new benchmark at this low a price. In fact, I kept the 5425 in my bedroom system the longest of any of the other players, even the Sonograph. Honestly, I was intrigued as hell that such a seemingly low-budget CD player could be so nice to listen to. Unfortunately, one of the reasons it sounded so nice was that I found the $400/meter AudioQuest silver Lapis to be almost a magical match with the NAD, the Straight Wire Maestro proving a much tougher load than the poor NAD could properly drive. In my experience, gear with beefier output stages usually sounds better with the Maestro, which is much higher in capacitance than the Lapis. Also, it's a fact that some output stages need to see a little inductance (the Maestro has extremely low inductance, while the Lapis does not) lest they become unstable, just as Naim amps depend on the high inductance of the spaced-pair Naim speaker cable to remain stable. Whatever the reason, the Lapis let the NAD sound its best, and I said "unfortunately" before because NOBODY is going to buy a $400 pair of interconnects for a $299 CD player! It's probably a safe bet, though, that AudioQuest's lower-priced cables would work well with the NAD, too.

The NAD 5425 is the new cheapest CD player that still sounds musical. Again, it's no giant-killer; hook it up to a high-end system and you will not be moved to tears. It's the player you buy for your bedroom, the one you recommend to your friends who want to buy "something good" but don't want to spend any money for that "something good." Know anybody like that? I do. Recommended, therefore, as the lowest-priced entry yet into good digital sound.

TJN ADDS SOME MEASUREMENTS

Denon DCD-2560: There was little or nothing to fault in the Denon's measured response. Its frequency response (fig.1) showed nothing worth commenting on except for a dip and rise above 6kHz (no more than ±0.2dB in any case). The channels are also well matched. The de-emphasis response (fig.2) is nearly ideal, indicating consistent playback of both pre-emphasized and non-pre-emphasized discs (the latter being in the great majority). The squarewave response (fig.3) is typical of the linear-phase digital filters common in Japanese-sourced equipment, with a very slight emphasis to its leading edge correlating with the slight peakiness at 20kHz noticeable in fig.1. The crosstalk (fig.4), while differing slightly between channels, is, in any event, so low as to be insignificant. (The top curve, referenced at 200Hz, indicates the crosstalk from right to left, the bottom curve the opposite.)

Fig.5 shows the spectral content of the Denon's output when decoding a dithered 1kHz sinewave.
at −90.31dB. Power-supply–related noise is absent, or at least buried in other low-level noise; there are no significant distortion artifacts; and linearity is excellent. The last is more completely shown in fig.6 (only the right channel is shown; the left was practically identical). Linearity stays within 1dB down to below −110dB, averaging out the low-level noise; some of this noise is from the player, some from low-level dither noise on the disc. Listening to the fade-to-noise with dither track from the CBS CD-1 test CD through headphones revealed a single birdie or whistle riding below the level of the signal shortly after the sweep began (estimated at between −60 and
-70dB). The whistle disappeared after a couple of seconds and the signal continued cleanly down to the noise floor. Fig.7 shows the noise spectrum of the player when reading a silent band on a test disc (or infinity-zero without emphasis, as it's commonly called on CD test discs). A minor amount of 60Hz noise is evident on the left channel, if hardly a problem at under -110dB, and the noise at high frequencies remains consistently low. Note that the Denon is the only multi-bit player under test in this group, a point I'll bring up again in discussing the same measurement on the other players.

In fig.8, a -90.31 undithered 1kHz sinewave gives a reasonably clear picture of the expected stairstep response from this signal, overlaid with the noise found in most players. And fig.9 indicates the player's output spectrum from an equal mix of 19+20kHz sinewaves with the combined waveform peaking at 0dB. While there is an excellent freedom from intermodulation products at 1kHz, 18kHz, and 21kHz, the aliasing products at 24.1kHz and 25.1kHz are a little higher than usual, indicating the particular filter chosen by Denon to have slightly less ultrasonic rejection than normal. This is probably inconsequential—the cursor position shows the 25.1kHz product to be almost 60dB down from the 19kHz tone or 0.1% of its level.

I measured zero DC offset from the outputs of both channels. The output was polarity-inverting, and the output voltage when decoding a 0dB sinewave measured 2.27V (left channel) and 2.24V (right), both around 1dB above the standard CD playback level. The output impedance from the fixed outputs was within 1 ohm of 147 ohms on both channels. The variable output had an output impedance of 146.5 ohms with the volume full-up, but increased to 2422 ohms at a setting of 12:00 (measured on the left channel), which will give some HF rolloff with very long or very capacitive leads between the player and preamplifier.

JVC XL-Z1050TN: For the JVC we could have probably reprinted (with one or two exceptions) the Denon's curves and said that the JVC was marginally but insignificantly better. Fig.10 indicates a virtually ruler-flat frequency response, while in fig.11 the de-emphasis response, like that of the Denon, indicates that no response-caused
aberrations will be experienced with pre-emphasized discs. The fine squarewave response (fig.12) again is typical of a player with a linear-phase digital filter, but with a slight overshoot on the leading edge. And in fig.13, only the measured crosstalk from left to right is shown; the right-to-left curve practically overlays it.

The JVC’s response due to a dithered, 1kHz -90.31 dB tone is shown in fig.14. Neither distortion artifacts nor power-supply noise are evident in this curve, and the minor (about 1dB) linearity error at -90.31 dB is likely due to a small error in the curve’s calibration. The latter is confirmed in fig.15, showing perfectly linear output down to -100dB, and an average deviation (minus the expected low-level noise) within 1dB down to below -110dB. Listening to the fade-to-noise with dither track from the CBS CD-1 test disc produced a clean fade to noise free of audible artifacts. The noise spectrum of a silent (infinity zero) test track is shown in fig.16. Note that in this 1-bit player there is a significant increase in noise at ultrasonic frequencies, though still below -95dB at 150kHz. Recall that the noise-shaping found in 1-bit machines shifts noise upward in frequency to above the audible range, where most of it is removed by additional, usually very gradual, analog filtration.

The -90.31 dB, 1kHz undithered tone in fig.17 presents a reasonably good approximation of the expected stairstep response to playback of this signal, with the typical addition of ultrasonic noise. And the intermodulation spectrum (fig.18) was excellent, with no distortion products visible above the analyzer noise floor.

The JVC had no DC offset on its outputs, and was non-inverting. Its output impedance measured 103 ohms within a fraction of an ohm on both channels at the fixed outputs. The variable output measured 503.9 ohms at full volume, 4254 ohms at one-half volume, which again will roll off the highs with suboptimal interconnect choices. The output of the JVC measured 2.18V on both channels in response to a 1kHz tone at 0dB, this 0.75dB above the standard level.

NAD 5425: Unlike those of the preceding two players, the NAD’s measurements give us something to talk about—but not much. In fig.19 the left channel (solid line) shows a very small HF rolloff—down about 0.4dB at 20kHz. The right
channel is a bit flatter, and there's a small (0.25dB) difference between the channels. Fig.20 plots a de-emphasis response which shows a slight rolloff at the top end (slightly more pronounced in the left channel, consistent with the overall top-end rolloff of the machine shown in fig.19). The squarewave response (fig.21) is virtually the same as those given by the other players here—again, the ubiquitous linear-phase digital filter. And the separation, while slightly different left to right (top curve in fig.22) and right to left (bottom), is outstanding, nonetheless.

The NAD's response to a -90.31dB, 1kHz dithered signal (fig.23) is nearly as impeccable as the best of the other machines here, with only a minor 180Hz left-channel blip, most likely due to
to very low-level power-supply noise. Linearity (fig.24) is also excellent. The noise spectrum analysis relative to an infinity-zero test disc signal (fig.25) again shows the small amount of power-supply noise at 180Hz—still below -120dB. And while the HF noise of this 1-bit machine begins to rise much like that of the other 1-bit players, that rise is abruptly tamed at 30kHz—possibly from more vigorous ultrasonic filtration than is used in the other players. Auditioning the fade-to-noise with dither track from the CBS CD-1 test disc at first seemed to indicate a high-frequency whistle riding with the signal. Rechecking the audible output by playing the blank (infinity-zero) track revealed that a high-frequency whistle, estimated at ca 10kHz, was consistently present. It was well down in level, however—it can be seen to lie at ~106dB in fig.25—and was inaudible with program material. Ignoring that artifact, the fade-to-noise test was audibly clean.

Fig.26, the waveform of a ~90.31dB, 1kHz undithered tone, while perhaps a bit noisier than some of the other players, still shows a recognizable stair-step response. And the 19+20kHz (at 0dB) intermodulation spectrum in fig.27 was as good as that of the JVC.

The NAD had a non-inverting output with zero DC offset in the left channel. 0.1mV in the right. Its output impedance was 112 ohms in both channels. Its output in response to a 0dB, 1kHz signal was 2.2V (left channel) and 2.25V (right), equivalent to 0.83dB and 1.02dB above the standard playback level.

Sonographe SD-22: The SD-22’s frequency response (fig.28) is flat over most of the range, though its definite high-frequency rolloff beginning about 6kHz would likely translate into some softness in the upper octaves. The ripples in the top two audio octaves are typical of the Philips digital filter used. In fig.29, the SD-22’s de-emphasized response tracks the HF rolloff of the player as a whole. The squarewave response in fig.29 is typical of the players in this group—a good rise-time combined with the moderate ripple indicating a linear-phase digital filter, though more overshoot than the other players. The crosstalk in fig.31 (only left to right is shown; right to left was virtually identical) was higher than that from the other players, though still unlikely to be audibly significant.

Fig.27 NAD 5425, HF intermodulation spectrum, 300Hz–30kHz, 19 + 20kHz at 0dBFS (linear frequency scale)

Fig.28 Sonographe SD-22, frequency response (right channel dashed, 0.5dB/vertical div.)

Fig.29 Sonographe SD-22, de-emphasis error (right channel dashed, 0.5dB/vertical div.)

Fig.30 Sonographe SD-22, 1kHz squarewave at 0dBFS

Fig.31 Sonographe SD-22, crosstalk (10dB/vertical div.)
The below linearity within this product is present, along with some (likely) power-supply-related noise at 60Hz and 180Hz—though these are well below -100dB. The bump in the trace at 7.5kHz is suspicious, however, perhaps indicating some idling tones. Linearity is shown in figs.33 (left channel) and 34 (right). The left-channel response is fair, within 2dB down to -110dB, but the disappointing right channel shows a quite high deviation below -90dB. Both channels show unusual non-linearity for a 1-bit player, most of which pass this test with flying colors. (I found this result so surprising that I ran it three times on three different days—with the same outcome each time.) The fade-to-noise with dither from the CBS CD-1 test disc did not produce a particularly clean result, with several whistles (below the signal level) popping up intermittently as the signal faded to noise. The SD-22’s noise spectrum (fig.35) shows the rising noise level above 20kHz typical of the other 1-bit machines, the minor power-supply noise artifacts at 60 and 180Hz, and little else of significance apart from the idling tone at 7.5kHz.

The SD-22’s waveform of a 1kHz, -90.31dB undithered tone is presented in fig.36. The player’s high noise floor makes this graphic’s interpretation a bit difficult, with little evidence of the desired stair-step response. The Philips digital filter has less stop-band rejection than most of the Japanese filter chips, as can be seen from the 19+20kHz (0dB) 1M spectrum (fig.37). The cursor shows the 24.1kHz aliasing product to be 55dB down, however, which is still good.

The Sonographe inverted polarity at its main outputs, with 0V DC offset from both channels.
As noted by CG in his review, its output was significantly lower than those of the other players here, producing 0.732V (left channel) and 0.733V (right) in response to a 1kHz tone at 0dB, these 8.7dB below the standard CD playback level of 2V RMS. Its output impedance measured 624 ohms (left channel) and 621 ohms (right).

Sony CDP-X555ES: The Sony joined the Denon and the JVC as one of the three best test-bench performers. Its frequency response (fig.38) is practically a straight line, as is its de-emphasis curve (fig.39). The Sony's 0dB squarewave response (fig.40) is similar to the others, with a bit more discernible clipping of the ripple typical of its linear-phase filter. (This clipping is merely due to a conscious design choice concerning operation of the filter.) The crosstalk graph (fig.41) requires no comment.

The spectrum of the Sony's response to a -90.31dB, 1kHz dithered signal (fig.42) shows a good linearity at the -90.31dB point and a small but largely irrelevant trace of power-supply noise at the 60Hz fundamental plus harmonics. The full low-level linearity test (fig.43, left channel only shown; the right was only marginally different) indicates a response which remains within 0.5dB of perfect linearity to below -100dB. Listening to the fade-to-noise with dither track produced a clean fade to the noise floor with no artifacts. And the noise spectrum in fig.44 shows the rising ultrasonic noise typical of noise-shaped 1-bit machines with no idling tones present.

In fig.45, the waveform of a 1kHz, -90.31dB undithered signal indicates a good staircase...
Most to connections Mondial Passive category. the noise level response 
Fig.46
-••••
Fig.45
-0.•••••
01010
-119.811
-111.16
70.811
MU»
Prue
30Hz-200kHz
Sony CDP-555ES, spectrum of silent track, 30Hz–200kHz (1/3-octave analysis)

Fig.45 Sony CDP-SSSES, undithered 1kHz waveform at –90.31dB (30kHz bandwidth)

Fig.46 Sony CDP-SSSES, HF intermodulation spectrum, 300Hz–30kHz, 19+20kHz at 0dBFS (linear frequency scale)

response (as it should) overlaid by a degree of noise typical of the better machines in this price category. And in fig.46, the intermodulation in response to a 19+20kHz, 0dB signal, shows a low level of distortion products. The cursor shows the 21kHz second-order product to lie a hair above –70dB with respect to the 19kHz level.

The Sony had a non-inverting output, with zero DC offset from either channel. Its output in response to a 0dB, 1kHz test disc signal was significantly higher than the standard 2V at 2.44V (left channel) and 2.42V (right). If not compensated for in an A/B comparison, this 1.7dB difference will make the Sony sound more dynamic, more exciting. Finally, the X555ES’s output impedance measured 197 and 199 ohms (left and right channels, respectively) from its fixed outputs, and 198 ohms from its variable output (left channel) set to full volume. At a 12:00 setting, however, the output impedance of the variable output (left channel) rose to 2407 ohms.

General Comments: Not unexpectedly, the measured results did not correlate well with the listening tests. In particular, measured low-level linearity, as it has a number of times in the past, did not follow the subjective results with any consistency. The two top-rated players in the subjective tests were the Sonographe and the JVC. The latter had excellent low-level linearity, while the former’s disappointing performance on this test showed a distinct difference between channels.

Care should be exercised when using the variable outputs of any of the three players provided with them (Sony, JVC, Denon). All three showed noticeable increases in output impedance at the mid-setting of the volume control. All might therefore be expected to show erratic performance quality when used from these outputs with long cables, cables with high capacitance, a low input impedance in the next stage in the system (either preamp or power amp), or combinations of the three. —Thomas J. Norton

Mondial Antenna Ground Isolation Circuit

Don Scott

Passive device designed to eliminate ground-induced hum/noise from cable TV or grounded outdoor antenna connections to audio/video systems without signal loss or degradation. Dimensions: 4" W by 1½” D by 17½” H including threaded 75 ohm F-type connectors. Price: $69.95. Approximate number of dealers: 150. Manufacturer: Mondial Designs Ltd., 2 Elm St., Ardsley, NY 10502. Tel: (914) 693-8008. Fax: (914) 693-7199.

Most audiophiles are familiar with hum and noise problems caused by multiple ground-paths to an electrical service entrance ground. Usually these problems can be solved by using a common AC outlet for all components, by isolating all or leaving one ground pin on one component
plugged into a common or several outlets, grounding only one end of an audio cable, or switching to a balanced interconnect system. However, in systems incorporating cable TV/FM or a grounded outside antenna, a new ground-loop gremlin enters the picture. Even if the cable shield is properly grounded to the house electrical system ground according to NEC code, a ground voltage differential most likely will exist because an A/V system is usually located an appreciable distance from the cable entry point. What’s the solution?

One can try using two 75–300 ohm matching transformers back to back, with the two 300 ohm sides connected together, as an isolation device. This scheme will only work if the balun transformers do not have one side of the primary and secondary windings tied together, or if the 75–300 ohm matching device is of the three-capacitor type (a capacitor isolating the shield, center conductor, and a third capacitor across the center conductor to shield—all easily checked with an ohm meter). While such a setup will work well in many cases because the loss involved may actually improve the S/N ratio from high-level, noisy cable signals, there are instances when the unshielded impedance lump may result in ghosts or intrusion by unwanted signals. For those instances where no signal degradation can be tolerated, Mondial has an alternate small black-box cure, the Magic.

Not really supernatural, the Magic is a clever, patented refinement of the three-capacitor 75–300 ohm matching approach. The Magic uses the printed-circuit microstrip technique rather than short lengths of cable inside the box to help maintain constant 75 ohm impedance. This technique, along with over 20 surface-mounted capacitors spaced to form a continuous ground-plane and distributive low Q, effectively rejects the absorption of other than the desired in/out signal. In addition to providing low loss, the Magic includes a gas-discharge shunt device with a 90V threshold to provide protection from high static charge buildup and some lightning protection. (I say “some” because lightning could certainly flash across the insulated washers under the F-type jacks. However, some is better than none.) An entry side ground connection is provided for this purpose. All hardware is gold-plated, the case is heavy metal, and a glass-epoxy circuit board is used.

**Results**

This is not a $69.95 item for everyone. But if you need it to solve a grounding problem, it works flawlessly. I could not detect any signal loss on FM, VHF, or UHF through the Magic, although the manufacturer claims a very small 0.3dB loss. I have two video systems in different rooms. When dubbing from the VCR in system 1 to the VCR in system 2, hum (ground-loop interference) produced undesirable rainbow bars at the top of the recorded picture. The Magic extracted this hum interference. Also, my local cable company translates a cable channel onto Channel 61 with a local 5MW UHF station on the same frequency. Anything but a straight street connection to a VCR or TV causes total wipeout of the translated station. With the Magic in the signal path, I noted no additional interference, testifying to the design’s validity. Recommended.
A MINI-SURVEY OF DIGITAL INTERCONNECTS

Jack English auditions digital interconnects from Kimber, SimplyPhysics, van den Hul, and XLO.

SimplyPhysics Byteline III digital interconnect. Approximate number of US dealers: 50. Price: $200/1m, $100 additional 0.5m. Manufacturer: SimplyPhysics, 13158 Veterans Memorial Parkway, Houston, TX 77014. Tel: (713) 537-5083. Fax: (713) 537-9618.


XLO Type 4 Reference Series digital interconnect. Approximate number of US dealers: 55. Price: $150/1m terminated, $50 additional 0.5m. Manufacturer: XLO Electric Company, Inc., 9860 Utica Street, Suite 612, Rancho Cucamonga, CA 91730. Tel: (714) 466-0382. Fax: (714) 466-3662.

Kimber Kable KCAG DigitalLink digital interconnect. Approximate number of US Silver Series dealers: 100. Price: $175/1m. Manufacturer: Kimber Kable, 2752 S. 1900 West, Ogden, UT 84401. Tel: (801) 621-5530. Fax: (801) 627-6980.

"...a rose is a rose is a rose"

—Gertrude Stein

A digital cable is a digital cable. After all, bits is bits. Or are they?

As Robert Harley pointed out in Vol.14 No.5, coaxial cables offer better performance than Toslink (plastic) optical ones. This seemingly heretical position has been generally supported by audiophiles who have taken the time to listen to alternative means of moving a digital data signal from a transport to a processor. RH has said that Toslink cables are "inadequate for high-end applications" (Vol.14 No.6). In fact, he has gone on to say that the best connection between a digital transport and a DAC is the AT&T glass fiber optical link. Unfortunately, very few transports or DACs are as yet equipped to handle the glass link.

These conclusions leave us with a dilemma. Plastic connections are inferior. Glass fiber interconnects, though best, are generally unavailable to us since our digital equipment can't use them. That leaves wire or cable as the only option for most of us. But what cable should we use?

I recently had the opportunity to update my system with the addition of the Theta Data CD/laserdisc transport (reviewed by RH in Vol.14 No.11). I also purchased the very modestly priced Audio Alchemy DAC (reviewed by RH in Vol.14 No.8 and Sam Tellig in Vol.14 No.10). I auditioned both units with my prior reference setup: an Esoteric P-2 (reviewed by RH in Vol.13 No.12 and Arnis Balgalvis in Vol.14 No.4) and Theta DS Pro Generation II. I took this opportunity to try out four digital interconnects. Three were specifically designed for just this purpose—the SimplyPhysics Byteline 111, XLO Type 4 Reference Series (RS) Digital, and the Kimber Kable KCAG DigitalLink. The van den Hul D-102 Mk.III is a standard interconnect widely used by audiophiles for data links.

CAVEATS

The results I am about to report are the result of intense comparative listening to various digital cables in one system. In spite of using multiple transports and processors, the fact remains that my results must be taken with a large dose of skepticism. The cables were auditioned only in my listening room with my system, my music, and my tastes. My results, therefore, may or may not be transportable.

From a reviewing perspective, the alternative is to do nothing about cables. If all reviewers opted for this noncontroversial approach, audi-
ophiles would be left to flounder about on their own. In fact, this is exactly what most of us have done with digital cables. With these alternatives firmly in mind, I sincerely believe something is better than nothing. In this case, the "something" is a modest comparison survey of a handful of digital cables in a single system with multiple transports and processors. I offer the following comments as "something," but hardly a definitive statement on the state of digital cables.

PART ONE
Basically, I used two test conditions. The first placed each of the four digital connectors between the very expensive and wonderful Esoteric P-2 and the extremely inexpensive Audio Alchemy Digital Decoding Engine. The results were fascinating; the cables did indeed sound very different from one another even through this modestly priced DAC. I had wrongly assumed the inexpensive processor would hide many potential differences between digital cables. The Audio Alchemy is a true Audio Cheapskate product which offers very good sonic performance for a very modest price.

The primary CDs used for this mini-survey included The Manhattan Transfer's _The Offbeat of Avenues_ (Columbia CK 47079); Rossini overtures with the Orpheus Chamber Orchestra (DG 415 363-2); _The Ghosts That Haunt Me_ by the Crash Test Dummies (Arista ARCD 8677); Danny Elfman's soundtrack for _Edward Scissorhands_ (MCA MCAD-10133); _Everybody's Boppin'_ by Lambert, Hendricks, and Ross (Columbia CK 45020); Chris Isaak's _Silvertone_ (Warner Bros. 25156-2); the _Glory_ soundtrack (Virgin 91329-2); Clark Terry's _Live at the Village Gate_ (Chesky JD49); Mozart's Clarinet Concerto with Anthony Pay on the basset horn (L'Oiseau-Lyre 414 339-2); and the first disc from the Led Zeppelin box set (Atlantic 82144-2).

_Simply Physics Byteline 111: $200/1m, $100 additional 0.5m:_ This heavy, impressive-looking interconnect with good RCA plugs made tight connections, was stiff but sufficiently flexible, and appeared to be of good build quality. It offered plenty of deep- and midbass power, was smooth and rich through the midrange (doing a very nice job on the full range, including the unique lower notes, of Anthony Pay's basset horn, for example), was adequately extended on top, nicely dynamic, and had no problem with loud, complex passages (such as many of the captivating portions of the _Edward Scissorhands_ soundtrack). The overall sound was generally big and bold.

There were also a number of negative characteristics. The bass, which was nicely presented in level, lacked adequate articulation. The Crash Test Dummies' uncluttered, easy-to-follow bass lines made this abundantly clear. The cost of the midrange richness and fullness was a loss of detail resolution which made it harder to follow the Manhattan Transfer's individual vocal lines. This same overall characteristic of loss of articulation/detail was present in the trebles, where more subtle information was simply not fully recreated. The Orpheus strings lacked harmonic overtones and richness, becoming more of a homogenized section than a tightly coordinated group of individual players. Overall, this consistent inability to fully resolve information was the Byte-line's most difficult fault.

To a lesser extent, there was some compression of crescendos, a mild foreshortening of depth, and a tendency toward hardness during peaks. Nonetheless, the 111 handled itself very well indeed with Led Zeppelin, the overall sound being big, bold, dynamic, tight, and in-your-face. Rhythms were effectively conveyed—more than my foot was tappin! The Byteline 111 admirably handled the overall power of this rock superstar group.

van den Hul D-102 Mk.III: $65/1m: The modestly priced D-102 has been a long-time favorite of audiophiles for its overall performance as a general-purpose audio interconnect. It has sufficiently impressed the people at TEAC to be included as standard with Esoteric equipment, where it performs admirably between the P-2
and D-2. It is well made and directional.

On the positive side, the 102 had good frequency extension at both extremes. It was even better in the midrange, where the performance tended to be rich, full, and mellow. On one hand, the 102 portrayed the rich lower notes of the bass horn while proving equally capable of providing some bite on trumpets and the delicate decays of cymbal crashes. Of particular note was the 102's dynamic capability, which handled both the quiet and loud passages with aplomb. This latter strength was particularly noteworthy on the Rossini and Glory discs.

Like the Byteline, but not to as great an extent, the van den Hul did not recreate all of the music's inner details. The bass lacked some definition, while the midrange was just a little too mellow, with inadequate harmonics. Oddly, the 102 did, on rare occasions, become bright, sharp, and hard. This was particularly apparent on the less than sonically optimal recording by Lambert, Hendricks, and Ross. The overall sense of air and spaciousness was good with the 102s.

On balance, this is a forgiving interconnect, its weaknesses subtractive and inoffensive. Its general characteristics might be beneficial to a digital front end that needs a bit of taming.

XLO Type 4 RS Digital: $150/1m terminated, $50 additional 0.5m: Of the companies represented in this survey, XLO is the new kid on the block. The XLO cable looks exactly as it appears in those advertisements which seem to be everywhere. It is built around a clear, hollow tube like that found coming out of an aquarium pump. Two different-colored, multi-stranded, flat wire conductors are wrapped around the outside of the hollow tube. The supplied Mogami RCA plugs are nothing special, and the gold-colored writing on the cables looks like something that can wear off very easily. This could become important, as the cables are directional and the writing is the sole indicator of the proper orientation of the cables. Out of the box (er, make that bag in this case—a Faraday resalable, static-resistant one), the XLOs are not very impressive to look at.

On the downside, there really wasn't much to criticize. The tonal balance of the XLO cable was tilted slightly to favor the lower frequencies, presenting a very mild excess of bass in conjunction with barely attenuated trebles. Inner detail could have been resolved to a slightly greater degree, and there was a very mild compressionduring peaks.

The real surprising news with this dedicated digital cable was its remarkable soundstaging capabilities. It simply presented a more believable soundstage than I have heard with any transport-to-DAC connection. Of particular note was the resolution of layers upon layers of depth within the soundstage. The dimensionality of the stage was simply more realistic. Performers were precisely located within the stage, with more space and air between and around each. This capability was equally satisfying on the more naturally recorded Orpheus Chamber Orchestra or the multi-tracked Manhattan Transfer release.

The tonal balance was generally satisfying as well, building upon the clean, powerful bass, as more than amply demonstrated by Glory's sonic blockbuster elements. The midrange was full and natural on voices and woodwinds; the upper midrange was both mellow and rich with harmonics (listen to the violins on the Rossini overtures); and the trebles were realistically satisfying, from the delicacy of a triangle (Orpheus again) to the marvelous splash cymbal on Led Zeppelin's "Dazed and Confused" (the reviewer's anthem). Resolution of Inner detail was very good, falling just short of the marvelous Kimber in this regard. Everything from the drummer's brushes on the Clark Terry recording to
Anthony Pay's closely miked and noisy basset horn was portrayed. Overall dynamic performance was quite good.

Kimber Kable KCAG DigitalLink: $175/1m: The Kimber KCAG is an odd one. For starters, it's silver. Most audiophiles like to think that they know what silver cable sounds like. Based on my experience with a variety of silver cables, I don't believe there is any inherent sound which can be attributed to silver at all. The more significant issue with the KCAG is its lack of shielding. This can be problematic in many applications. You should definitely insist on trying this expensive interconnect before you purchase it to make sure you do not have a problem with RFI.

The KCAG was the only cable in this group that gave me problems with RFI. I was able to overcome these by insuring that the KCAG was as far away as possible from power cords, transformers, and other interconnects. The KCAG is neither directional nor purpose-built for digital. Based upon this circumstantial evidence, the KCAG doesn't look like a good choice for something you'd want to stick between your transport and DAC.

The key to the KCAG's sonic performance was twofold. First, everything was recreated; second, everything was all clean and clear. The KCAG was extremely revealing, but not what I'd call "ruthlessly" revealing. It simply presented more information than the other cables, from the deep bass through the topmost trebles. Honestly, I didn't expect to be able to hear as much information with the inexpensive (okay—cheap) DAC from Audio Alchemy. Hell, the KCAG is nearly as costly as the processor! The KCAG has been and continues to be the digital interconnect of choice for me, and the first part of this mini-survey did nothing to threaten its place of eminence in my system. However, the XLO's soundstage capabilities gave it a special place as my alternate interconnect of choice.

Nearly every comment in my notes on the Kimber's performance was positive. The voices of Manhattan Transfer were wonderful. The gravelly voice of Crash Test Dummy Brad Robert was rich and captivating. The budding superstar vocals of Chris Isaak were everything I could hope for from a CD. Orpheus's strings and woodwinds were enticing. But strings were also splendid with the XLO, which may have done an even better job here, being a bit warmer and fuller. The power of Glory was there in all its splendor. The subtle decays of triangle and cymbal were palpable (to abuse an already over-worn description). In short, the KCAG, while a touch thin, more than compensated with its general accuracy and remarkable resolution of detail.

At the conclusion of the first part of this mini-survey, the Kimber KCAG stood at the top of the hill due primarily to its ability to present more information. The XLO was hot on its heels, with an astounding ability to create a realistic soundstage. The van den Hul seemed best suited to specific systems that needed taming. To this point, the Byeline was having trouble. I began assigning my own names to each of the four cables—The Revealer, The Soundstager, The Gentleman, and The Rocky, respectively. On to the more demanding Part Two.

**PART TWO**

My expectations had already been exceeded in Part One. I simply had not expected to be able to hear as many differences with the little (it is little) Audio Alchemy. But now it was time to take off the gloves. For me, the Theta DS Pro Generation II has been—and still is—the King of DAC Hill. Just prior to this survey, I shipped mine back to Theta for fine tuning. I wanted to be certain that my Generation II was performing optimally. To complete the picture, my massive Theta Data was ready to enter the fray. For the remainder of the survey, both Theta pieces were used along with my just-updated Audio Research Classic 150 amplifiers with their 16 KT88s and the latest, sonically wonderful ARC LitzLine 2 speaker cables bi-wired into the ProAc Response Threes.

In every case, with every cable, the results in Part Two were significantly better than those in Part One. While the Audio Alchemy Digital
Decoding Engine is a wonderful piece for the money, it is hardly a state-of-the-art processor. With the two Theta pieces, each of the four cables proved a formidable performer—any one of them would make a fine choice. However, keeping in mind all the caveats offered above, their performances did differ in my listening setup.

SimplyPhysics Byteline 111 ("The Rocker"): Performance improved across the board with the two Theta units, but the Byteline 111's general characteristics remained constant. The Byteline's unique characteristic was its soundstage portrayal: always very big and wide, with a close-to-the-performers perspective. It also tended to be flatter, less deep. The net result was always an in-the-room performance. This soundstaging placed the Orpheus in my listening room. I was no longer sitting somewhere out in the hall looking in at the performers—they had come to me. With the splendidly recorded Clark Terry recording, my listening room became the Village Gate. With Led Zeppelin, I stood at the foot of the stage.

Tonally, the 111 had a very powerful midbass with a slight tendency toward boominess which was most apparent on the two soundtracks—Scissorhands and Glory. The midrange, in conjunction with the soundstaging, became immediate and up-close, its bold, stark character emphasizing the fundamentals at the expense of harmonic complexity and richness. Vocal sibilance was more prominent with the Byteline than the other cables (eg, Manhattan Transfer, Isaak, Crash Test Dummies). The lower trebles were generally good, with a mild intrusion of sharpness on things like cymbals. Once again, there was a lack of harmonic richness tending to homogenize sounds on even the best sonic recordings (eg, Clark Terry).

Detail resolution, while good, was not outstanding. For example, the snare drums on both Glory and the Clark Terry recordings were less "magical." There were fewer sounds of the actual performers themselves (eg, Orpheus). The 111 did a very good job with dynamics, although it didn't seem to get the softest passages right. This led to an impression of compression as the purposeful disparities between the loudest and softest passages were not as obvious. The Byteline cable had a unique character with few significant faults. Its in-the-room perspective, coupled with its midbass power, make it a good choice for certain types of music.

van den Hul D-102 Mk.III ("The Gentleman"): The van den Hul 102 is a solid, steady performer, if not an all-star. The vdH 102's primary feature is the way it handles music in the ever so critical midrange. Stated briefly, it is natural, tending toward mellow. If anything, the 102 lies somewhere between realistic and euphonic. It is far, far away from analytical or offensive. With virtually all of the CDs used for this survey, the midrange was nicely rich and full, easy to listen to. Words like "smooth," "mellow," "soft," and "round" abound in my listening notes. Detail resolution, while not up to the standards of the KCAG, was always good.

The relationship between performers and listener was slightly distant or mid-hall, a perspective I tend to prefer. I was once again seated in the hall when listening to Orpheus, and no longer stood at the foot of the stage to hear Led Zep. There was good depth and width as well as an ample sense of air and spaciousness against quiet backgrounds. More importantly, the 102 seemed to more accurately convey different depth perspectives from recording to recording, imparting less of its own signature. Dynamic contrasts were also nice, if not superlative.

The 102's performance at the frequency extremes was more unusual. While there was good extension at top and bottom, both extremes were ever so slightly softened or made less obvious by the strong midrange. In the bottom, the D-102 lacked the power of the Byteline but was still a capable performer. In the treble, there was again a mild softening (eg, the wonderful shimmering decay of cymbals on the Chesky Clark Terry CD). All in all, the 102 was mildly subtractive but ever faithful to the music.

XLO RS Digital ("The Soundstager"): The name I gave this cable in Part One says it all—the XLO presented the best soundstaging of any of the cables in this survey, period. Coupled with the superlative soundstaging capabilities of the Theta DS Pro Generation II, the XLO gave me the best soundstaging I'd yet heard from digital. Every recording was different, as it should have been. There were always clearly discernible layers of width and depth behind and around the speakers. This overall capability was aided significantly by the ProAcs' ability to simply disappear with the right material. Performers were placed with pinpoint precision within the stage, and everything stayed in place with no wander or vagueness. The XLO also yielded a very nice
sense of air and space.

Tonally, the XLO began with a strong and extended bass. It was lower in level and power than the Byteline, but more articulate and natural. On big works like Glory, the power and precision of the bass were very satisfying. With more intimate works such as the solo cello from "Superman's Song" (Crash Test Dummies), the midbass was nicely rich, full, and detailed. There was never any boom or loss of control. While other cables often gave more bass, none gave a better presentation of the bass in terms of both level and articulation. The XLO was slightly attenuated in the deep bass, but this was psycho-acoustically offset by a strong and well-defined midbass. The midrange was nicely rich, the trebles extended and, again, natural. In the upper midrange/lower treble region, there was an occasional trace of brightness (Manhattan Transfer) or glare (Isaak). This was a minor and infrequent coloration.

Detail resolution was very good, but not up to the level of the stunning KCAG. A particularly troublesome sound to reproduce is the fingering of a guitar on the Crash Test Dummies recording. The Audio Alchemy, with any cable or either transport, was never able to get this sound of fingers sliding over metal strings right. The XLO did a very good job with this peculiar sound. Dynamic performance was very good but slightly compressed on all of the recordings. Overall, the XLO was a very good to excellent cable in most respects, with stunning soundstaging capabilities.

Kimber Kable KCAG ("The Revealer"): Once again, the name says it all. The KCAG, my preferred digital cable for some time, was the undisputed king of the hill at retrieving information from all of those bits. There were simply more sounds to be heard through the KCAG than through the other cables. For example, I could hear more of the non-musical sounds of the Orpheus performers; the individual voices in the loud and complex portions of Glory; the harmonic string structures in the Mozart recording that create astringency, raspiness, or sweetness; etc. This ability to unravel inner detail let the KCAG produce many more gradations of volume level on pieces like the Rossini overtures and the soundtrack CDs. There was simply more to hear with the KCAG in the system.

The "more" there was to hear was also very pleasant to hear as well. The bass was extended and powerful, with nary a trace of boom or exaggeration. Midbass in particular was natural, from the acoustic cello of the Crash Test Dummies and Marcus McLaren's upright bass on the Clark Terry CD, to Rowland Salley's electric bass on the Chris Isaak release. This naturalness extended up into the midrange with full voices (eg, Manhattan Transfer) and harmonically rich instruments. The same natural quality extended into the trebles, where there was no grain or hardness, no attentuation or exaggeration. In fact, the KCAG exhibited the least amount of vocal sibilance and digital glare of any of these test cables.

When it came to soundstaging, the KCAG was clearly bested by the XLO. With the KCAG, the seat was again mid-hall. This was true of all the cables in this mini-survey, with the exception of the Byteline. While width and depth were both good, neither was as clearly defined as with the XLO. The placement of performers was good, but again not the equal of the XLO's pinpoint precision. In addition, the KCAG was not as spacious or open as the XLO, which further detracted from the realism of its overall soundstaging.

Oddly, the KCAG was the only cable that led me to write things in my notes about transient speed. It was fast, tight, clean, and controlled from top to bottom. The KCAG gave a wonderful realism to such percussive sounds as Kenny Washington's wonderful drum work on the Clark Terry recording. The KCAG just had a temporal rightness about it that wasn't as obvious (positively or negatively) with the other cables. On balance, the KCAG was a wonderful performer in virtually all regards, with a state-of-the-art ability to unravel and convey the music's subtle inner details.

CONCLUSION

I have one overriding concern as a result of this survey and my extensive auditioning of digital cables. I was consistently dissatisfied with the ability of any of my pieces of digital equipment to handle dynamics realistically. I do not mean the ability to play loudly, but the ability to cover all of the various volume levels of live music, from barely audible through lease-breaking. Live music does this. Analog does a pretty good job with the right source material. I do not find this same level of dynamic realism with digital. This is particularly problematic, as digital was promised to offer even greater realism in this regard. The digital medium has failed to deliver in this
way. As a consequence, all of my comments about dynamic capability are suspect. The cables may have little or nothing whatever to do with it, or I may have simply failed to use the right source material. I don't know where the fault lies, but I can't blame the cables due to the consistency of this negative result.

Each of the four digital cables included in this mini-survey acquitted itself quite well. However, with all due apologies to Gertrude Stein, each did exhibit a different sonic character. The Simply-Physics Byteline 111—"The Rocker"—yielded a big, bold, bass-driven, in-the-room sound that could be well suited to certain types of music or personal tastes. The van den Hul D-102 Mk.III was ever "The Gentleman." If anything, it tended to make the sound more smooth and mellow than was appropriate. It had a nice blend of strengths to meld nicely with any number of systems. The XLO and Kimber Kables stood out, albeit in very different ways. The XLO—"The Soundstager"—was simply the best digital cable I have yet heard in recreating a believable soundstage with layers upon layers of width and depth, ample ambience, and pinpoint localization of performers. And "The Revealer"—the KCAG—was unequaled in communicating the subtle inner details contained in the "bits." There were simply more sounds to hear with the Kimber than with the other cables.

F O L L O W - U P

Snell Type B loudspeaker
"It's difficult to make a loudspeaker that's room-proof," said Tom Norton, as we were discussing the Snell Acoustic Corporation's new Type B, four-way, 6-driver, full-range dynamic loudspeaker system introduced at the June 1991 Chicago Consumer Electronic Show. He and I were trying to make sense of conflicting listening reports about the Type B gathered from the magazine's writers over the preceding five months. What could have caused the wide variance in opinion? Might it be the result of the speaker's sensitivity to different rooms?

The Type B is the most innovative Snell loudspeaker to come along in years. Kevin Voecks, the company's main designer, used two active acoustic-suspension woofers positioned at different heights from the floor to reduce interaction effects and avoid exciting room modes. The front woofer operates up to 275Hz. The rear 10" woofer functions as a subwoofer, being driven with the front woofer up to 40Hz. The rear "subwoofer's" crossover is configured to make the driver operate over an extremely narrow range (about 25Hz), so that, in effect, it behaves like the port of a vented system. Ironically, it is the Type B's bass response that has become the focus of review criticism. JA has speculated that the narrow response bandwidth of the rear subwoofer may be to blame.

Two veteran audio reviewers, Peter W. Mitchell and Robert Harley, came to diametrically opposed positions on this product. PWM based his enthusiastic verdict upon listening sessions at CES, spending hours auditioning the Type Bs using recordings he had made. His conclusions were as positive as I have ever read from him: "I know of no more accurate, transparent, or musically satisfying dynamic speaker at any price" (Vol.14 No.9, September 1991, p.51). Furthermore, he had followed the Type B through its prototype stages at earlier CESes, in different environments, using similar source material, so this report was the equivalent of a very educated review. Earlier models were bigger (refrigerator-sized) and produced very powerful bass down to 16Hz. He was most impressed by the final production version, which he auditioned in June 1991 at the Chicago CES. Peter found that "The speaker is remarkable for its octave-to-octave balance, authentic timbre, spacious soundstaging, well-resolved detail, broad listening window, and freedom from both coloration and exaggeration...if I hadn't just purchased a pair of ATC SCM50 As, I would be strongly tempted to buy the Snell B" (Vol.14 No.9, p.51). PM suggested that the $5980/pair Type A/III Improved (see review in Vol.13 No.3), the company's flagship loudspeaker system, had been dethroned by a system some $1800 cheaper. Finally, it seemed that we might have a Class A dynamic loudspeaker system in our "Recommended Components" costing under $5000. Or do we?

Stop the Music: Robert Harley disagreed vigorously with PWM in his full-length review (Vol.14 No.12), finding that he could not recommend the Type B. All his listening tests were car-
ried out in a moderate sized, IEC-configured listening room in his Albuquerque, NM home. While praising the Snell's "excellent LF extension, smooth treble, high power handling and excellent dynamics," Harley criticized the Type B's "Achilles' Heel... its overbearing bass... which seemed sluggish and fat." In particular, kickdrum recordings in pop and rock "excited" a particular bass frequency that might not be noticed if one listened only to classical music. This bass peak colored the rest of the Type B's range in RH's listening sessions. In his room, the Type Bs played with a lack of transparency and were unable to create an impression of depth and image space. RH was unable to ignore or "listen around" these colorations. It's not surprising that he reported that the Type Bs refused to "disappear" into the listening room.

Voecks responded to the review with a lengthy "Manufacturer's Comment" in the same issue. He noted that the high output impedance of RH's VTL amplifiers (KV claimed 2.5 ohms, but the magazine measured only 1 ohm) could induce a 3dB response rise, centered around 30Hz, causing the Type B to "ring" at low frequencies, and prevent the speaker's "filter network from operating at its intended frequency and slope." Voecks also commented that RH's listening position might not allow him to hear the smoothest possible low-frequency response. Voecks went on to argue that the combination of high-output-impedance amplifier plus listening position could elevate the 30Hz response by 10dB. JA's calculations, using a figure of 1 ohm for the VTL's output impedance, suggests a milder 1.3dB boost. What's the reader to think?

A Gathering of Eagles: To further complicate things, the Snell Type B had been auditioned informally by most of the Stereophile reviewing staff. In late July, the magazine's contributing editors assembled in Santa Fe to attend the 1991 Stereophile Writers' Conference. The same Type Bs that would later go to RH had just arrived for review; TJN and I set them up in the Stereophile listening room. Listening was conducted in two two-hour sessions using either a Krell KSA-250 or a Threshold S/550e power amplifier. The group reacted negatively (they also criticized JA's Wilson Audio Watt/Puppy system, so the Snell was "in good company"). A lower-midrange "thickness" seemed to color the Type B's sound. I certainly heard this quality as I sat leaning against the listening room's rear wall. Even JGH heard a "nasality" in the midrange that was later picked up independently by RH (who did not participate in the July listening).

Can placement position explain it all? Kevin Voecks visited Santa Fe the following month, and found that the Type Bs and the listening positions were too close to the room boundaries. Referring to TJN's diagram of the Stereophile listening room (Vol.14 No.10, p.103), the Type Bs originally had been placed exactly where the loudspeakers are shown in the diagram, close to the Tube Traps (next to one of the extremely thick exterior walls found in Santa Fe buildings); the listener position was next to the rear-wall, 8" by 6" RPG Diffusor panels. Kevin moved the speakers and chairs several feet toward room center, and reported to me that much of the "midrange heaviness" disappeared.

Proper placement in a room is an important part of obtaining the best performance from a large speaker system. Correct positioning in an acoustical space can bring out a loudspeaker's transparency, imaging, and its ability to disappear, while the same system can sound mediocre in another acoustical setting. Anyone planning a sizeable investment in a loudspeaker system should audition the system at home and get the dealer's advice about optimal placement before deciding that the loudspeakers won't work. Hopefully, all this can be done before signing the check!

Reading all these reports, it's understandable that a reader would have trouble deciding if the Snell Type B is sensitive to room placement or just a flawed loudspeaker design. JA had the same question (Vol.14 No.12), wondering if our staff's divergent opinions might indicate a mismatch between moderate-sized rooms and the Type B's bass alignment. He suggested that I use my very large listening room to conduct a "Follow-Up" on the Snell Type B, examining its performance in a space that might favor its powerful low-frequency extension. I could also serve as a bridge: I'd heard the same Type B setup at the Chicago CES reported by PWM, and had been present at the Santa Fe listening sessions with the same pair of Type Bs reviewed by RH. (Unfortunately, I didn't hear them in his listening room.)

Listening setup: My listening room is considerably bigger than Stereophile's, RH's, and the June CES hotel listening rooms. It has dimensional ratios quite different from RH's room, and pro-
vides another type of room-mode distribution—my room is effectively much longer and narrower. Its true space occupies the entire first floor of my house, and is divided by a partial wall into a kitchen and a living room. The loudspeakers sit at one end of the living room, a 13' wide by 27' long space with a semi-cathedral ceiling 12' high at its peak. The side wall facing the outside of the house arches over to meet the other long wall, which rises vertically to the room's full 12' height. Unlike the thick, immovable walls in the Santa Fe listening room, my house is constructed with New York Sheetrock, a building material with considerable give. The room's outer wall has a three-section, 6' by 10' bay window. The long, opposite inner wall has a series of equipment shelves, a fireplace (the brick is completely covered by sheetrock, which removed the room's previous flutter echo), and a large, built-in TV cabinet. These three areas are divided by decorative curved dowels that reach from ceiling to floor and further disperse sound. The short wall that serves as the back reflecting surface for the speakers has three large framed watercolors, but these are placed well above the speakers. The room has a moderate amount of upholstery, including a 10' sectional sofa, an overstuffed reading chair, four small stuffed chairs, and two area rugs. One rug is a Baktiari Persian, 10.5' by 12.5', and the second is a circular area rug, 6' in diameter, that lies just in front of the loudspeakers. The three bay-window glass panels have lavolier cloths that are dropped into place during reviewing sessions.

The living room's space is effectively doubled by a connection with the kitchen. A large 10' by 8' opening to the kitchen provides access to an identical 13' by 26' room with 8' ceilings. This means that the sound can travel 52' from one back wall to the other! One of the long walls has a large open area for a stairway that goes both upstairs and downstairs.

JA visited during a trip to the 1991 AES meetings, and found this listening space very different from other Stereophile reviewers’ rooms. For example, it would be difficult to follow Kevin Voecks’s placement recommendations (one-third out from the rear wall), for it is hard to estimate where the “actual” one-third point might be. Adding the stairway and kitchen space, there must be over 5400ft³ of space. This is the sort of open quality found in New York City SoHo lofts; it can very much work against a small speaker. On the other hand, these large dimensions might benefit a loudspeaker like the Type B that had been developed using anechoic test procedures.

Detailed room setup instructions were not included with the Type Bs sent for review. As with any installation, only listening would reveal the speakers’ optimal room position relative to distance from side and rear walls and how the speakers should be rotated vis à vis the listener. Should the grilles directly face the listener or be toed-in? As Harley explained, the drivers are placed along what RH described as a “sheared-off” corner of one of the speaker’s long dimensions. Most listening in Santa Fe was done with these grilles turned in, so the loudspeaker’s back panel was parallel to the wall and perpendicular to a line running from the listener to the back wall.

Kevin Voecks indicated via phone that the Type Bs were meant to be used out in the room, far from the back wall. (This is very different from Snell’s Type A/IIs, designed by the late Peter Snell to hug the wall and not intrude into the room space; they depend on boundary effects to generate deep bass.) For most situations, the Type B grilles are meant to be aimed at the listener, or even aimed down the full length of the room. RH, in his review, stated that the speakers were toed-in so that he was on-axis, giving “the best balance between solid center imaging and a wide soundstage.” John Heron, Director of Sales and Manufacturing at Snell Acoustics, finds that a totally “open” stance (grille pointed down the long axis of the room) yields the widest, most spacious soundstage. Other listeners might face the Type Bs inward at 45° to a line running from the back wall to the listener to minimize side wall reflections. For my situation, however, Voecks recommended I point the grilles directly at my listening position. I agreed; I found that the Type Bs imaged best if the grille cloths faced directly at me. This meant that a corner of the loudspeaker enclosure was pointed at the back wall, rotating the rear subwoofers so they faced inward toward a center point between the speakers. They were thus directed away from the room corners, which could reinforce bass response.

Snell Acoustics provided me with copies of the CARA and LEO room analysis computer programs. These programs analyze room resonance mode distribution and suggest speaker/listener locations for each dimension of the listening room that minimizes bass nodes. Following one of LEO’s suggestions for a “better” location
("best" could not be easily estimated), the Type Bs were positioned with the rear-facing corner approximately 24" from the wall, and the front panel about 45" from the rear and 36" from each side wall. The speakers were toed-in slightly and were 84" apart. The seated position was 18' away from a center line between the speakers, and the seat placed my ears about 34" off the floor (about the level of the Type B's upper-midrange driver).

Like RH, I had to move the Muse Model 18 subwoofer out of the listening room for any serious auditioning of the Type Bs. I had discovered that the Model 18's 25" height scrambles the Type B's ability to generate a central image. Of course, the Type B has more than enough bass, so one would probably not think of augmenting its response! In addition, I adjusted the tweeter-level controls between 12 and 3 o'clock, and swept the loudspeakers with a Heathkit sine-wave generator before I began to listen to music.

Standing at the equipment shelf, I heard the bass increase markedly as I swept the frequency down past 42Hz, very near the crossover point between woofer and subwoofer. Voecks's design, and measurements carried out at the National Research Council in Canada, showed that both drivers should be lower in output at this frequency, not boosted. I left the sine-wave generator playing at 42Hz and walked around my room. Sure enough, there were great differences in perceived amplitude, depending upon my position. Moving over to my favorite listening position, some 18' away from the front of the loudspeakers (I did mention that my listening room is large and unconventional, didn't I?), I found that the 42Hz peak had gone. I had someone else move the dial on the sine-wave generator, and I could hear an even rolloff as the frequency moved down to 20Hz. The peak at 42Hz was a speaker-room interaction activated by the Type B's powerful bass response (but not so much by another bass wizard, the Muse Model 18; see below). I suppose I was becoming more convinced that the Type B, like other loudspeakers, could not be "room-proof." The room wouldn't "go away," but would always demonstrate nodes in positions where bass would be greatly emphasized. Fortunately, my listening position did not line up with such a node. But how would it sound on music?

Listening impressions: The Type B's appearance very much impressed me. The fit and finish of these black loudspeakers (the speaker is available in both black and walnut veneers) and their unusual geometry make them easily the most beautiful loudspeakers I've had in my listening room. Despite their size, the effect of flattening one of the long corners reduces their volume and creates a sense of visual space around them. Other tall loudspeakers, such as the late Fourier One and the Snell Type C/IVs, or shallow but wide panel speakers such as the Quad ESL-63 USA Monitor/Gradient SW-63 subwoofer combination, seem to take up too much space, crowding together the furniture and objects in the room. The Type Bs complement my living room's contemporary decor. It was very pleasant to use them as my primary loudspeaker for several months.

The Type Bs reviewed for this "Follow-Up" were the third pair I had auditioned, the first having been heard in Chicago, the second at the Writers' Conference. RH provided an excellent description of their construction, features, and design in his Vol.14 No.12 review. Associated equipment included such comparison loudspeakers as the Quad/Gradient subwoofer system and Snell A/III Improved. Amplifiers included a Mark Levinson No.27 (the USA Monitors were used exclusively with this amplifier), a Krell KSA-250, and the newest version of the Bryston 4B. The Quads and the Snell A/III's midrange/tweeter section were driven by the No.27 via 15' runs of Monster Cable. The Quad/Gradient subwoofer and the A/III's woofer section were driven by the Krell KSA-250 and the Bryston 4B via HF10C Levinson speaker cables. The Quad system was used with its own Gradient crossover unit and balanced interconnects; the Type A/III Improved speakers used a Snell-manufactured outboard electronic crossover with single-ended connectors. Vinyl discs were played on a Lingo-modified Linn LP-12 turntable with an Ittok tonearm and a Spectral Reference moving-coil cartridge, all finely tuned by Innovative Audio's Casey McKee. I played CDs on a Krell MD-1 CD turntable connected by standard interconnects to a Krell SBP-32X DA converter. Other sources included the Day-Sequrera FM Reference, Meridian 204, Pioneer F-93 Reference, and Quad FM-4 FM Stereo tuners. Phono preamplification was provided by a Mark Levinson ML-7 preamplifier with an Dunitech/Audio Standards MX-10 head amp, and by a Krell KBL preamplifier. Analog interconnects included AudioQuest LiveWire Topaz interconnect cables and Krell Cogelco balanced leads.
Music was selected to replicate RH’s finding: Would the Type Bs do well with classical music, but have more difficulty with pop/rock kickdrum? I pulled out my favorite classical recordings, including solo piano works such as Glenn Gould’s fabulous rendition of Bach’s Goldberg Variations (Sony Masterworks IM 37779). I also used another current favorite, Leopold Stokowski conducting the Chicago Symphony in Shostakovich’s Symphony 6 (LP, RCA Red Seal LSC-3133). For kickdrum, I turned to one of JA’s favorites, Jeff Beck and Terry Bozzio’s “Behind the Veil” (from Jeff Beck’s Guitar Shop, Epic EK 44313), as well as Richard Thompson’s “I Misunderstood,” from his great new album, Rumor and Sigh (Capitol CDP 7 957132).

The Type B had a definite emphasis in the bass, just as RH mentioned. I heard the kickdrum take a more powerful role in the music, this apparent immediately after I’d switched over from my reference Quad ESL-63/Gradient SW-63 system. The Type B’s kickdrum rendition was clear and strong, with much more “weight” and acoustic size than I’d noticed before. I had no difficulty following the bass line on “Behind the Veil,” but it didn’t seem as distinct as I’d heard with the Quad/Gradient’s free-standing woofers. Bass notes became murky and blurred when both bass guitar and kickdrum played together. On the other hand, I knew that if I set the Quad/SW-63 crossover’s bass-level control too high, the kickdrum on Richard Thompson’s “I Misunderstood” could turn to mush on the quad system. This very definitely did not happen with the Type Bs, which played this selection with more or less decent pitch definition.

During casual listening, while standing next to the Snells or near a room corner, the bass was overpowering; FM announcers’ voices became overly resonant and barrel-like. José Carreras’s wonderfully light, lyrical tenor developed a slight nasality at the beginning of the “Kyrie” on Ariel Ramirez’s Misa Criolla (Philips 420 955-2). Some tweaking was definitely in order. I set about to optimize the Type Bs’ room positions, my own listening position, amplifier selection, treble level control, and speaker cable wiring.

I used the kickdrum selections to “voice” the Type Bs. First, I found that amplifier selection played a critical role. The Mark Levinson No.27, which proved to be a magical combination with the ESL-63s, did not provide the optimal control of the Type B’s bass response. This was not because of a high output impedance, a problem that Kevin Voecks had raised about RH’s VTL tube amplifiers. The No.27’s output impedance registers only 0.08 ohms at 20Hz. Its inability to “wake up” the Type Bs in my room probably had more to do with the task of driving a complex, 6-driver, 4-way system with a 2.7 ohm impedance minima into a huge acoustical space.

Power to the rescue: The first change was to use a more powerful amplifier. Better stability and control, as well as a superior overall tonal balance, was found using the much more powerful Krell KSA-250 (its output impedance is no slouch either, being 0.13 ohms at 20Hz). Connected to this powerhouse, the Type Bs were smoother, less hard, more open, and totally effortless. This is no surprise—the KSA-250 can put out close to 1000Wpc into the speaker’s impedance minima of 2.7 ohms (tweeter-level control set to maximum). As JA had mentioned to me, the KSA-250 imposes an “iron grip” on the Type B’s drivers, making it an excellent choice for this loudspeaker in my listening barn—er, room. Second, a careful adjustment of the tweeter-level control greatly helped me adjust the tonal balance. I found that boosting the treble slightly by turning the level control from 12 to 2 o’clock allowed the speaker to “open up” without becoming shrill. Third, I changed the speaker’s position, moving them 1 foot farther out from the back wall. This move proved very important. Fourth, I found that the Type Bs produced the widest, deepest soundstage and best tonal balance when set up with bi-wired speaker cables.

Another powerhouse, the “newest” 250Wpc Bryston 4B, proved synergistic with the Type Bs. Most 4B amplifiers manufactured over the past 20 years have had a special knack for controlling woofers. For example, the 4B is the amplifier for driving the free-standing 12” dipole woofers in the Quad/Gradient SW-63 add-ons. A bi-wired set of loudspeaker cables provides the optimal arrangement for driving the Type Bs. I disconnected the jumpers between the Type Bs’ tweeter and woofer 5-way binding posts, ran Levinson HF10C to the woofer terminals, Monster Cable to the tweeter terminals, and connected the other ends of both cables to the Bryston 4B’s output binding posts. By then the Type Bs had been placed farther out into the room, with the loudspeaker front panel 54” from the wall. The bass became focused, developing a mild “snap” (the sonic fingerprint of all Bryston 4Bs), but did not lose any air or space. The soundstage widened.
and deepened, and the speakers totally disappeared. The instruments were spread out in a pleasing, authentic manner, depicting the placement and depth of the piano and drums on Dave Grusin's rendition of "Keep Your Eye on the Sparrow" (Discovered Again, Sheffield Lab 5).

Now this did not change the Type Bs' spectral profile, for their bass prominence remained. Ron Carter's string bass and Harvey Mason's kick-drum continued to be a little too prominent behind Grusin's keyboard. But the additional spaciousness and effortlessly afforded by the bi-wired Bryston 4B made the bass less overbearing in my large room. In addition, more information came through. For the first time, I realized that some of the bass beats were footstomps in the opening "Kynre" of the Missa Criollia.

Now I could more easily appreciate the Type B's strengths. The midrange and treble were exceptional, with a speed, transparency, and lack of distortion I acquaint with the Quad ESL-63. For most selections, the Type Bs disappeared acoustically; I was not aware the sound was emanating from them. There was an effortlessness, so that even the most dramatic fortissimo orchestral selections, or the loudest portions of "Behind the Veil," retained their sense of air and acoustical space. Richard Thompson's voice, clear and unarnished by the kickdram, floated between the Type Bs, well-defined and almost palpable. I found the Type Bs' transparency, lateral imaging, and depth of soundstage to be the best I have heard from any of the Snell loudspeaker line, including the flagship Type As.

Only expensive systems reveal the Type B's weaknesses. The Quad ESL-63/Muse Model 18 combination, currently retailing for $7000, played with less kickdram emphasis, more speed, greater transparency, and a wider soundstage. The $2500 Muse Model 18 subwoofer optimized the response below 50Hz, yielding the best overall rendition of deep bass. I focused on the deepest organ notes, which are played at the beginning of the cadenza of Saint-Saëns's "Organ Symphony" (E. Power Biggs, Eugene Ormandy, Columbia MS-6469, LP). Biggs holds individual notes for about two seconds each as he plays a descending scale. The Muse made each note sound as if it were a step on a staircase, with clean pitch and putting a "lock" on the room. The Type B/Bryston 4B combination played these notes, reaching the lowest, but with less definition. Switching to the $7500 (suggested retail) Quad ESL-63/SW-63 raised the transparency factor even higher, though this combination can't play the deepest bass that the Type B can with ease. The Stokowski/CSO album played over the Quad system with an enormous, seamless soundstage reaching almost beyond the walls of the listening room. This system was totally involving, particularly for classical music, but could not play as loudly or as effortlessly as the Type B.

What about the Snell flagship system, the $5890 Type A/III Improved loudspeaker? As set up in my listening room, the A/IIIi employs an external Snell crossover (add $400), a second amplifier (add $2000 minimum), plus additional speaker cables. Its advantages in my room were three: It could be moved next to the back wall, a real plus in my listening room; its bass had better pitch definition, but did not go as low as the Type B's; and it was the only loudspeaker system to show a dropping-off-a-cliff-like transient response, playing the beginning of Dorsey's "Ascent" (Time Warp, Erich Kunzel, Cincinnati Pops, Telarc CD-80106). I was startled by the explosive opening synthesizer chord. The Type B blurred the chord, while the Quads played it softly; no heart attacks with either of these speakers! Overall, the Type A/IIIi's shared the Type Bs' ability to play loud and their wall-to-wall soundstage, but were not quite as transparent as the Type Bs. In addition, the Type As did not develop the image depth heard with the Type Bs.

Conclusions: Is the Type B a large-room loudspeaker? What can the reader derive from this lengthy tale? Is the Snell Type B a great loudspeaker—dynamic, open, transparent, Class A sound at a reasonable $4200 price? Or is it flawed, beset with an overbearing bass, a 40Hz peak that interferes with the music?

I can't fully agree with either point of view. The evidence suggests that the current version of the Type B is sensitive to room size and placement. Midrange heaviness and overbearing bass were heard in two of the four listening rooms mentioned above. The 40Hz room-speaker interaction I heard (mostly eliminated in my large room) is not just a simple interaction involving a wide-range loudspeaker exciting room nodes not heard before. The Muse Model 18 subwoofer, a real foundation-cracker if there ever was one, has a well-defined deep-bass response praised by three reviewers in this magazine (RH, CG, and myself)—no disagreement on that product! No dynamic speaker-room interaction
peak stood out (by ear) when I swept the Model 18 down to 40Hz and below with the sinewave generator, even standing in its nearfield. Ironically, the Type B's innovative new bass-driver system may produce too much lower bass, particularly in small or moderate-sized rooms.

On the other hand, I didn't find that the Type B's bass is a "fatal flaw." It had the best treble and midrange response of any loudspeaker in the Snell product line, and, I might add, of any dynamic loudspeaker system I've auditioned in my listening room. I had to use a hybrid reference system, the Quad ESL-63/Gradient SW-63 combination, which costs almost twice as much, to better the Type Bs' imaging and transparency; and even then, not by much. So there's real value in the Snell Type B, particularly when the bass can be optimized.

Clearly, few products have involved our staff as have the Type Bs. Love them or hate them, many words have been written about the Type Bs in a brief period, and, I suspect, will be written in the pages of other publications in the future. This alone means that the Type B is one of the most important audio products of 1991.

What can be concluded? Like all audio components, the Type B has strengths and weaknesses. Its dynamic range, ability to play effortlessly, and midrange and treble transparency are real assets. I could easily live with these beautiful-looking loudspeakers for a long time. Unlike RH, I shall feel a keen sense of loss when this product goes back to Snell's Haverhill factory. As for the cons, RH correctly identified a troublesome frequency-response peak between 40 and 60Hz. Careful room placement and adjustment of the treble control can minimize (but not eliminate) this emphasis, but it still is a bit too easy for the Type Bs to overload that bass region in small rooms. Prospective purchasers should listen carefully, take along a good pop record with plenty of kickdrum, and, if possible, audition the Type Bs at home.

I believe the Type Bs will do their best in a large listening room. Like the Type A loudspeaker, now in its 19th year and fifth version, the Type B probably will continue to sell. High on my wish list for the Type B/II, should Kevin Voecks call it that, will be a diminished bass peak in the kickdrum region and a transient speed the equal of that of the Type As. At that point, I believe that the Type B may realize its full potential as one of the finest dynamic loudspeaker designs.

—Larry Greenhill

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Stereophile, Vol. 14, No. 11, November 1991

Stereophile, February 1992
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Stereophile, February 1992
James Levine conducts Verdi's Aida (p.197) and Wagner's Götterdämmerung (p.197) in new recordings, while Enya's new Shepherd Moons is the most beautiful New Age/folk/rock/jazz/whatever CD Richard Lehnert has ever heard (p.209).

**CLASSICAL**

**BEETHOVEN: Symphonies 7 & 8**
Frans Brüggen, Orchestra of the 18th Century
DDD. TT: 63:18

Brüggen (along with John Eliot Gardiner) is, perhaps, among the most musical of period-instrument conductors, as attested by these two impressive performances. The first movement of 7—after a powerfully sustained introduction marked by a blend of urgency, expectancy, and sharply defined harmonic motion—plunges into the vivace with a thrust that grows not so much from speed as from exceptional focus of detail and rhythmic profile. The Allegretto is neither distended nor rushed, the vibrato-free string tone lending its fugato an apt eeriness. The third movement crackles with energy, its Trio broadened just enough to honor Beethoven's assai modification of presto. Only in the finale, where Brüggen rushes to the point of impairing clarity, does the performance fall short of gaining an unqualified endorsement. Still, among period-instrument accounts, this one offers the most compelling blend of virtuosity, animation, and freedom from eccentricity.

Brüggen's 8 is almost as good. Tempos in outer movements are fleet, but not at the expense of articulation. The conductor may miss some of the music's explosive brusqueness in his occasional underplaying of accents, but he conveys its tart humor and clarifies its rich color. Indeed, in both works details often veiled in "modern"-orchestra accounts are starkly exposed. Ironically,
though, the Trio of the third movement of 8, which boasts one of Beethoven’s most inspired strokes of orchestration, lacks the timbral pi-
quancy of many conventional performances, and
some may find Brüggen’s pacing of the move-
ment a bit too fast for Beethoven’s specification of Tempo di minuetto. Still, for those favoring
period instruments, this is a CD to pursue. The
in-concert recording has great clarity and pres-
ence, with just enough distance to suggest dimen-
sion and depth.

—Mortimer H. Frank

BRAHMS: Violin Concerto, Academic Festival Overture
Thomas Zehetmair, violin; Christoph von Dohnányi, Cleve-
land Orchestra
Teldec 2292-44944-2 (CD only). Michael Brammman, eng.;
Martin Fouqué, prod. DDD. TT: 47:12

This is not so much a violinist’s as a musician’s account of this glorious concerto. More specifi-
cally, Zehetmair’s tone is not always ingratiating:
slightly edgy and occasionally thin, it is also col-
ored by a vibrato that some may find too wide
and too slow. But the soloist has a clear sense of
what this work is about, integrating its contrasted
moods of gentle lyricism and bold assertiveness
into a tautly organized whole that serves as a
reminder of how strongly Brahms adhered to
Classical models. The first movement’s double
stops are tossed off with an apoly tough aggres-
siveness, and its more cantabile sections are spun
out with tender sweetness. The same traits exist
in the two concluding movements, the finale
having a welcome brashness that underscores its
Hungarian character. Interestingly, too, Zehet-
mair plays the first movement’s familiar Joachim
cadenza with a freedom that lends it a rarely en-
countered expressivity. Throughout, Dohnányi
offers superb (and superbly recorded) support,
the Cleveland winds lending the performance
considerable profile; particularly noteworthy in
this regard is the return of the orchestra at the
conclusion of the first movement’s cadenza.

Among available editions of this warhorse, none
that I know is completely successful on musical,
virtuosic, and sonic grounds. Purely as an in-
terpretation, the Szegedi/Harty account (Pearl)
stands alone for its coherence, musicality, and
expressivity, but its 1928 sound, remarkably fine
for the time, shows its age today. Among modern
versions of merit, my favorites remain Heifetz
(RCA) for matchless virtuosity; Grumiaux (Philips)
for poised Classicism; Kreibers (Philips) for tonal
richness and beautiful shaping from the concert-
master of the Concertgebouw Orchestra; Szery-
ing (RCA) for singing tone supported by superb
conducting from Monteux; and Ugi (RCA) for
its overall stylishness and musicality.

The overture filling out this Teldec CD receives
a rousing, thrustful reading, Dohnányi giving
uncommon prominence to the often veiled per-
cussion. In sum, a flawed but distinguished re-
lease that is well worth hearing.

—Mortimer H. Frank

HANDEL: La Resurrezione
Lisa Saffer, Judith Nelson, sopranos; Patricia Spence, mezzo;
Jeffrey Thomas, tenor; Michael George, bass; Philharmon-
ia Baroque Orchestra, Nicholas McGegan
Harmonia Mundi: HMU 90727.28 (2 CDs only). Bobina G.
Young, prod.; Tony Faulkner, eng. DDD. TT: 106:50
HANDEL: La Resurrezione
Barbara Schlick, Nancy Argenta, sopranos; Guillemette Lau-
rens, mezzo; Guy de May, tenor; Klaus Mertens, bass;
Amsterdam Baroque Orchestra, Ton Koopman
Erato 2292-45617-2 (2 CDs only). Adrian Verstijnen, eng.
DDD. TT: 116:11

This early (1708) Handel work is labeled an orato-
torio, but this is due only to the fact that opera
was banned in Rome at the time by the pope; in
reality, La Resurrezione is a little chamber opera.
Its premiere, on Easter Sunday, 1708, was a huge
success—composer Archangelo Corelli con-
ducted and played first violin! A woman sang
the role of Mary Magdalene; this was not permit-
ted to continue, the pope insisting that she be
replaced by a castrato. Morality is a tough thing
to pin down.

The work—opera or oratorio—lacks drama.
I doubt whether Handel, years later, would have
allowed Lucifer, the most interesting character,
to be banished without a bitter, vengeful aria; as
it stands here, a few lines of recitative and we’re
left villain-free. Furthermore, and more drasti-
cally, the “action,” as it were, manages to avoid
both the Crucifixion and the Resurrection—
perhaps Handel was saving his inspiration for
Messiah. What we do get is some really neat music,
especially for Lucifer (bass), the Angel (first sop-
ранo), and orchestra. Handel calls for a full com-
plement of strings, oboes, trumpets, bassoon,
tympani, and basso continuo, this last consisting
of flutes, recorders, organ, harpsichord, lute and,
if you believe Koopman, trombone. It’s appar-
ently open to debate about the validity of the
bassoon, but it sounds nicely doom-laden to
me, and Koopman uses it only with Lucifer.

Speaking of Koopman: He, in general, leads
the perker, more piquant performance. It isn’t
just the trombone, it’s his whole approach, and
I think he’s right. This work was performed in
1708 on a stage with scenery—it’s meant to dazz-
le, and Koopman and his band (and engineers)
have made it racy and colorful, highlighting
individual instruments and occasionally exag-
gerating attacks. The scenery gets chewed, and
it needs to be. Lines are embellished; the work
is brought to life.

McGegan isn’t as spicy, but his sobriety
doesn’t imply stuffiness either. His band’s playing
is lovely. And his soloists are better, in general,
with particular praise going to Michael George’s

Stereophile, February 1992
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Lucifer. McGegan treats the work with slightly more respect than it needs; something tells me that the audience at the premiere thought much of it was a hoot. McGegan’s engineers have given us the warmth which Koopman lacks, in keeping with the overview. For my money, I prefer Koopman. Both recordings are excellent, but Koopman’s is simply more entertaining, and so it has the edge. But if it’s more seriousness you want, get McGegan. La Resurrezione is good stuff, if a bit insubstantial; hear for yourself.—Robert Levine

HINDEMITH: Complete Brass Works
Sonatas with Piano for Trumpet, Horn, Alto Horn, Trombone, & Tuba; Sonata for Four Horns; Morning Music; Concert Music for Piano, Brass, & Two Harps
Concerto for Piano, Trumpet, Horn, Alto Horn, Trombone, & Tuba; Sonata for Four Horns; Morning Music; Concert Music for Piano, Brass, & Two Harps
Summit Brass: Raymond Mase, trumpet; Gail Williams, horn; Larry Strieby, alto horn; Mark Lawrence, trombone; Gene Pokorny, tuba. Theodor Lichtmann, piano; Carl Topilow, conductor
Summit DCD 11502 (2 CDs only). Sonny Ausman, eng.; Mark Lawrence, Theodor Lichtmann, Raymond Mase, Gene Pokorny, Larry Strieby, Gail Williams, prod. DDD. TF: 110:12

Every work in this collection has been recorded several times by various artists, but this is the first occasion in which all of Hindemith’s brass music has been presented in a single, integral recording project. The nearest precedent occurred in 1976 when Columbia Masterworks combined the efforts of Glenn Gould with members of the Philadelphia Brass Ensemble (actually principals of the Philadelphia Orchestra) in a recording of the sonatas with piano. This long-out-of-print 2-LP set has not yet made it to CD.

Summit Brass draws its players from some half-dozen US orchestras. Following a couple of recordings on Pro Arte, Summit has formed its own record company in order to assume full artistic responsibility and control.

A project such as Hindemith’s complete brass works is one which most record companies could be expected to shrink from. Brass repertoire of this type is rarely performed away from college campuses and conservatories. Mainstream concert audiences have become accustomed to brass ensembles as vehicles of crossover entertainment as provided by the Canadian and Empire Brasses.

Aside from the very difficult piano parts, Hindemith’s brass sonatas aren’t considered hard enough to impress mainstream listeners. The challenges in these works lie in the areas of stylistic interpretation, phrasing, ensemble with the piano, and whatever the players can find beneath these still but deep waters. It goes without saying that to make any of these pieces attractive to non-specialists requires brass players of the highest artistic level, and a pianist with technique to burn, nerves of steel, and an imaginative concept to delve beyond Hindemith’s busy note structures.

The set is a mixed bag. Pianist Theodor Lichtmann, Professor of Music and Chairman of the Piano Department of the Lamont School of Music of the University of Denver, appears to have adequate technique, though not enough to burn; it’s difficult to tell about his nerves, but he seems to lack imagination. He’s going up against the highly imaginative, even eccentric Glenn Gould, who was the dominant factor in the CBS set. Here, with rare exception, one has the feeling that people are avoiding the upsetting of egos, or the stepping-on of toes.

Raymond Mase, a member of the American Brass Quintet, is a broadbased New York freelancer whose affiliations include the Orpheus Chamber and the American Composers Orchestras. He has it in him to have defined Hindemith’s Trumpet Sonata, but he sounds uncharacteristically stiff and ill at ease in this recording. Mark Lawrence, principal trombonist with the San Francisco Symphony, sounds comfortable enough, but appears to have fallen into the current low-brass fad: biggest is best, and it must continue to get bigger and darker with each advancing symphony season. By comparison, Philadelphia’s Henry Smith appeared to be playing a pea-shooter on the Gould set, but with a finely balanced concept of weight and edge, the better to command a range of nuance that seems of little concern for Lawrence in his quest for sheer size. Associate principal horn with the Chicago Symphony, Gail Williams, along with Larry Strieby, assistant principal horn with the St. Louis Symphony, fare much better in their sonatas, as does CSO principal tubist Gene Pokorny. Williams and Strieby each outclass Philadelphia’s celebrated former principal hornist Mason Jones, who gave extremely pedestrian performances of both sonatas on the Gould set. The Alto Horn Sonata, played by Strieby, contains a spoken verse response between the hornist and the pianist, written by the composer, related to nostalgia and the calling of horns. Strieby sounds very much at home with his recitation, while Lichtmann seems totally out of his element. Gould made the most of his opportunity to recite.

Gene Pokorny makes the most of what Hindemith offers him in the deceptively simple Tuba Sonata. Many players are intimidated by the work’s stark structure, but Pokorny is one of that small number who realize it’s okay to give this piece a personal interpretation, which he does to great effect.

A personnel list is provided for the ensemble works, but contains, in certain instances, more names than the works call for. In the Sonata for Four Horns, Williams and Strieby are joined by L.A. freelancer Thomas Bacon and SFSO co-principal David Krehbiai, but we are left to guess who plays which parts. Morning Music, in four-part writing with optional instrumentation, is
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performed here as a quartet by paired trumpets and trombones, but by which two of the four or three respectively listed? Likewise Concert Music for Piano, Brass, and Two Harps: which three of the four trumpets, and which three of the four horns?

Morning Music is given what could only be characterized as a committee’s non-interpretation. But at least no toes were stepped on, until now perhaps. Concert Music gets its first true lease on life on CD, the prior one being by the Wallace Collection on Nimbus, with impossibly slow tempos, and inept piano playing by Radoslav Kvapil. At least Lichtmann is ept, and conductor Carl Topilow keeps the lines flowing. The liner notes should have given us bios on Topilow and the two harpsists. I hope their checks are in the mail.

No information is given as to recording site, but since the Kawai concert grand piano was provided by the Kawai Music Center of Denver, Denver would be the likely venue. The sonatas sound as though they took place in the typical university recital hall: intimate, and very live.

Despite my reservations, this can be a valuable set for brass players who need to hear these pieces. For the bigger, wider world, I’d like Telarc to record these same works with the Empire Brass and whatever kickass pianist the Empire themselves would come up with. Or how about Maurizio Pollini on DG with either CSO brass or NYP brass, Claudio Abbado conducting Concertmusiti? The repertoire deserves it.

—Richard Schneider

KOECHLIN: Music for Flute
Fenwick Smith, Leone Buyse, flutes; Jayne West, soprano; Martin Amlin, piano
Hyperion CD466414 (CD only). Joel Gordon, eng.; James Donohue, prod. DDD. TT: 66:10

The French composer Charles Koechlin, who died just 40 years ago, was taught by both Fauré and Massenet, but his music was a strange mix of influences from medieval procedures, polyphony, the Second Viennesse School, and the more cryptic elements of such composers as Satie and Stravinsky. Yet it is typically French in its poetry and eloquence.

Although the titles of his orchestral pieces often admitted to colorful extramusical inspiration, such as Kipling’s Jungle Book, his chamber music tended to be more conventional in both name and form. However, this delightful disc not only includes the 14 pieces Op.157b, the Sonata Op.52, and the Morceau de lecture pour la flûte Op.218, all for flute and piano, and the Sonata for Two Flutes Op.75, but also, in deference to the London-born film star Lilian Harvey, the Album de Lilian, première série Op.139, and four pieces from the deuxième série Op.149 for flute, soprano, and piano. If Koechlin’s obsession over Lilian’s beauty (“Keep that schoolgirl complexion / Palmolive soap will preserve it / Palmolive soap is made from palm oil and olive oil / One could use it on salad,” etc. brings a blush to your cheeks, you can enjoy the images that the delicate flute miniatures of Op.157b conjure up in the privacy of your own mind!

The American instrumentalists performing here, not to mention soprano Jayne West, are excellent, and the recording is warm and intimate — just what Koechlin would have ordered under the circumstances.

—Barbara Jahn

MOZART: Symphonies 38 & 39
John Eliot Gardiner, English Baroque Soloists
Philips 426 283-2 (CD only). Onno Scholtze, eng.; Wilhelm Hellweg, prod. DDD. TT: 66:27

Even those uncomfortable with period instruments should find these performances attractive. Here are exceptionally musical, dramatic, and stylish readings, virtues that have their root in clarity of texture and voicing, stark contrasts in dynamics and timbre, and an apt suggestion of grandeur and power all too rare in Mozart recordings. Especially impressive is 38, its introductory chords delivered with slashing accents and a demonic edge redolent of the most hellish moments in Don Giovanni. And the ensuing Allegro has a sharp delineation of motivic profile that italicizes how — more than any other work — this one suggests the way in which Mozart might have developed had he lived longer. Then, too, the finale, without being rushed, has a chiseled clarity that brings its implicit nervous agitation to the fore. The only drawback to this reading is an inclusion of the second repeat (development and recapitulation) in the first movement, which stretches its length to an unwieldy 18 minutes. Still, for bite, tension, and raw force, this performance is not to be missed.

No.39 is every bit as good. Rarely will one hear the contrasting lyricism and heroic thrust of the first movement, the harmonic motion of the second, and the subtle timbral contrasts of the third so closely defined. Indeed, Gardiner makes portions of the score sound like Mozart’s “Eroica,” and, with a slightly broader than usual finale, brings out the music’s playful perpetual-motion character without undermining its stark harshness. And the inclusion of a second repeat in this (comparatively brief) movement is most welcome for the witty surprise it generates. Complementing these many strengths is sound that is well-focused, free of harshness, and beautifully (and musically) balanced. In short, as period-instrument readings, these performances may well be unchallenged.

— Mortimer H. Frank

RAMEAU: Suite, Castor et Pollux
PURCELL: Three Fantasies

Stereophile, February 1992 195
I have nothing but admiration for Frans Brüggen's decision to make all his recordings live, and for the amazing job his engineers make of this hazardous process. He proves once again that to capture a concert performance—this one given in Utrecht in June 1989—is to provide a disc of fresh, committed music-making that exudes the spontaneity and inspiration of the moment. This may not always mean that the performance can bear repetition, but, in this instance, I think we have the best of all worlds.

Brüggen gives here an instrumental suite from the 1754 version of Rameau's second tragédie en musique, Castor et Pollux, this providing the first recording of some of the new pieces written for the revival of the 1737 original. It proves a charming blend of boisterous dance movements, some with tambour de basque, and dramatic program music. It would have been interesting as well as informative had the booklet given a brief synopsis and some indication of where in the plot each extract had been taken from, but brevity seems to have been the watchword here, particularly when the length of the disc is considered.

The scintillating treble sounds of Brüggen's period instruments in the Purcell are the perfect foil for the music's dark gravity—the famous Chaconne is played really quite beautifully, with incisive rhythms and subtle dynamics. Would that there was more...

—Barbara Jahn

ROSSINI: La gazza ladra
Katia Ricciarelli, Ninetta; William Matteuzzi, Giannetto; Samuel Ramey, Il Podesta; Bernadette Manca di Nissa, Pippo; Ferruccio Furlanetto, Fernando; others; Coro Filarmónico di Praga, Orchestra Sinfonica di Torino della R.A.I., Gianluigi Gelmetti
Sony SK 45850 (3 CDs only). David Motley, prod.; Michael Shady, eng. DDD. TT: 3:13:32

This live performance of a Rossini masterwork was recorded at the Pesaro Festival in August 1989. Luckily the opera house is an intimate one and the stage action was not too wild for the microphones and producer David Motley to capture handsomely. The performance is by no means perfect, but any sensible Rossinian will want this valuable release.

La gazza ladra ("The Thieving Magpie") is a melodrama, an opera neither seria nor buffa: Ninetta, lustred after by the local mayor (Podesta), has been turning him down—in addition to other reasons, she loves Giannetto, a soldier. Then things almost turn tragic: Ninetta is wrongly accused of stealing some silver and the Mayor has her tried. She is convicted and sentenced to death. As she's being led to the scaffold it's discovered that the silver was actually purloined by a "thiev-

ing magpie," and all is forgiven, including Ninetta's father, Fernando, a fugitive from the army. While it's easy to see why Stendahl, in his Vie de Rossini, refers to the plot as a "disgusting little anecdote," the music certainly can't be dismissed, and frankly, neither can the emotions played out throughout this very long opera. Besides that, what's wrong with a tragedy with a non-tragic ending? We are, after all, discussing entertainment.

Premiered in Milan in 1817, the opera was an immediate success; it was a hit throughout Europe until the 1850s, after which it dropped dead. It was revived in New York (in concert) in 1954 and in Wexford in 1959, and I own a "private" recording, in abominable sound, of a live 1973 performance from Rome. And now this—welcome back, I say.

Katia Ricciarelli is a strong Ninetta, not a helpless serving girl. She's indignant with the Mayor but also manages to convey Ninetta's innocence in her showpiece aria. But as usual (since the early '80s), when the voice must go either high or loud, we pay for it, and there's nothing to revel in. Still, I bought her interpretation. William Matteuzzi, as Giannetto, sings Rossini's fast, high-flying music in a pretty, easy, tenorino voice, and he, too, is likeable. Bass Ferruccio Furlanetto finds in Fernando, Ninetta's soldier-father, a very comfy part, and we understand his plight.

But bass Samuel Ramey walks away with the opera. His Podesta is not comic—this is a vicious, petty tyrant, and Ramey's singing is amazingly fluent and accurate. Second only to Ramey is Gianluigi Gelmetti, who keeps the three-hour-plus score moving and vibrant; indeed, he treats it emotionally like verismo while keeping the quality of sound positively bel canto—no easy task. The rest of the cast is excellent.

As mentioned above, Sony's sound is excellent, although their decision to fade out the applause is disconcerting. A full libretto in many languages, with essays and photos, is provided. This one matters; it may take a while to warm up to, but it's a splendid work well served.

—Robert Levine

STRAVINSKY: Le Sacre du Printemps, Symphony in 3 Movements
Esa-Pekka Salonen, Philharmonia Orchestra
Sony SK 45796 (CD only). Michael Seaday, eng.; David Motley, prod. DDD. TT: 53:25

STRAVINSKY: Works for Piano & Orchestra
Concerto for Piano & Wind Instruments, Capriccio for Piano & Orchestra, Movements for Piano & Orchestra, Symphonies of Wind Instruments
Paul Crossley, piano; Esa-Pekka Salonen, London Sinfonietta
Sony SK 45797 (CD only). Tony Faulkner, eng.; David Motley, prod. DDD. TT: 54:01

Salonen's recorded Rite of Spring had the benefit of impressive concert performance behind it and thus proves a sleek production, smacking of
complete knowledge and mastery of the score and a confidence based on excellent rehearsal. Salonen is at home with this kind of music: its crisp rhythms and urgency are very much in his blood, but so too is an intuitive method of sustaining the utmost contrast while drawing together the threads of what could ultimately appear a piece of patchwork. So his fortissimos are furious, his pianissimos delicately suspended, and the contrast between fast and slow completely fearless. The frenetic pulsing that underlies the work is gutsy and primitive in its insistence and clarity; he thus captures something of the work's initial shockiness.

The coupled Symphony is quite warm by contrast, yet Salonen still gives you the essence of the music without fleshing out its bones in the way so many other conductors are wont to do. While I prefer Simon Rattle's accounts for Angel of both these works (the Rite coupled with Apollo, CDC 7 49636-2, the Symphony with Petrushka, CDC 7 49053-2), Salonen's uncomplicated approach is a refreshing tonic.

His disc of works predominantly for piano, with Paul Crossley, illustrates again the ease with which he is able to converse in both the sleek instrumentation and economical language of many of the pieces (and revisions) of the '40s and '50s, and those works of happier proportions. In all, there is evidence of supreme virtuosity from pianist and individual members of the London Sinfonietta alike. I particularly admire the confidence that the orchestra is able to inspire in Paul Crossley, allowing him a relaxed, and thus improvisatory-sounding, approach to the elegant sophistication of Capriccio and the stark severity of Movements—again, a perfectly executed lesson in the pointing of contrast. Only in the Finale of the Concerto does this laid-back approach tip the balance too far.

The 1947 revision of Symphonies of Wind Instruments completes this excellent program in excellent sound, Tony Faulkner blending warmth and clarity to superb result from The Maltings, Snape. This is a disc to be experienced.

—Barbara Jahn

VERDI: Aïda
April Millo, Aida; Plácido Domingo, Radames; Dolora Zajick, Amneris; James Morris, Amonasro; Samuel Ramey, Ramphis; others; Metropolitan Opera Orchestra & Chorus, James Levine
Sony SSK 45973 (3 CDs only). Michael Glez, prod.; Christian Constantinov, eng. DDD. TT: 2:25:40

In an arena which already holds 15 or so complete recordings of Aïda, was another needed? Especially one with Domingo as Radames—his fourth recording of the role? The answer is decidedly “no,” but seeing as how shelf space and the demands of the public don't count, we seem to have a new one anyway!

That said, there's nothing wrong with this new Sony set, and one can actually find much to enjoy. The main draw is Millo's Aïda. The young Brooklyn-born soprano is, indeed, the real ticket: a true Verdi soprano, with a full, rich tone from C to shining C, and plenty of temperament. She phrases intelligently and tellingly, pays heed to dynamics, and her sound is appealing. In short, she's a real asset. Dolora Zajick, the other relative unknown, turns in a slightly more troublesome performance as Amneris. Her mezzo is bright, secure, and powerful, and she gets a nice snarl into her words when she has to, but I couldn't for the life of me remember a moment of her portrayal the moment it was over.

Domingo is reliable—who else do we have in this role, anyway? The voice is still handsome and burnished, and if he sounds marginally fresher and easier in earlier recordings, well, that's to be expected. He takes the "Foscamini" ending to "Celeste Aïda," which is to say, he belts out the high B-flat and then repeats the phrase piano an octave lower. This is hardly objectionable, and his fans won't be disappointed. James Morris, a terrific bass, here sings a baritone role and sounds troubled. He does well enough, but his vocal discomfort gets in the way of his dramatic creativity. Ramey is a strong Ramphis, but the rest of the cast is weak. James Levine leads a taut reading, full of fire, and the Met forces do him proud.

The engineers have decided to record soft moments too softly and loud moments too loudly; the constant getting up and down to adjust volume may annoy some.2 Otherwise the recording is vivid and true, the mysteries of the Nile and the splendor of the Triumphant Scene given equally fine atmosphere.

Should you buy it? Well, Millo is fascinating, and Levine has something to add to the opera, to be sure. But don't get rid of your other favorite recordings of Aïda; listen before you buy. It's quite good; it just isn't crucial. —Robert Levine

WAGNER: Götterdämmerung
Hildegard Behrens, Brünnhilde; Reiner Goldberg, Siegfried; Matti Salminen, Hagen; Bernd Weikl, Gunther; Cheryl Studer, Elisabeth
Deutsche Grammophon. Michael Tilson Thomas, cond. DDD. TT: 5:53:40

1 The record industry's insistence on emphasizing the new over the old, even the less-than-a-year-old, was explained to me thusly: a) there is a constant public demand for the "standard" classical works; b) every recording has a natural sales profile that is sawtooth-shaped when plotted against time (with the leading edge being much sharper than the trailing edge); c) a new recording is more effectively marketed than a re-release; d) there has been a shift of emphasis in record retailing from specialists who stock the catalog in depth to chain/mall stores who stock catalog width without depth; and e) the chain stores do centralized buying and therefore tend to display only the last six months' worth of new releases. All of which leads the record industry to concentrate on duplicating recordings of standard works at regular intervals in order to keep the overall sales of that work constant. —JA

2 Thus are recording engineers encouraged by critics to compromise the original sound's dynamics, to the detriment of musical realism. —JA
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The story of Wagner's scripting—in-reverse of the first three Ring operas—Siegfried as prologue to Götterdämmerung, Die Walküre as prologue to Siegfried, and Das Rheingold as prologue to all three, the music then composed from front to back—is common operatic lore. But Siegfried's Death—the original title of Götterdämmerung, or The Twilight of the Gods—remained the story Wagner always most wanted to tell. By the time Wagner began composing Götterdämmerung, he'd been consciously preparing for that moment for over 20 years. Götterdämmerung is the single part of Der Ring des Nibelungen that we know, without a doubt, Wagner wanted to write all along.

This certainty, Wagner's all-consuming appetite for the task, can be heard everywhere in the music. There's an inevitable urgency to Götterdämmerung that the three other Ring operas lack, a headlong surrender to passion, fate, death, and transformation that never flags, from the very first chord to the final diminuendo 4 1/2 hours later. Those fortunate enough to have experienced an entire Ring cycle in the theater know the special feeling of sitting down for the Prologue and first act of Götterdämmerung: it's a quiet, ineluctable excitement, a certainty that, at least for this evening, everything is going to be hashed out, accounts settled, scores evened, slates wiped clean—almost regardless of the level of performance skills about to be revealed. This feeling is, in my experience, unique in the world of art, and constitutes Wagner's special triumph. He wished more than anything to transcend the jaded ennui of just another evening at the opera; and despite the best and worst intentions of musicians, critics, and audiences alike, performances of Götterdämmerung succeed in just this way far more often than not.

As do recordings. Of the 13 complete recordings of Götterdämmerung on my shelves, none are actually bad. I can't say the same for the Siegfrieds, certainly not for the Rheingolds. Partly this is because performances—let alone recordings—of Götterdämmerung are not undertaken lightly. The illusion is that the work "conducts itself" with far less effort than the fast-forward exposition of Rheingold, the hammering-out of a musical/dramatic language in Walküre (whose composition gave Wagner the most trouble), and the fitful, stop-start, eventually abandoned orchestral busy-work of Siegfried's first two acts. The reality, of course, is that only a fool would attempt to stage or record this most powerful (some might say overpowering) of operas without a great deal of experience, knowledge, insight, musical wisdom, and money. Even the closest we've come to such a recording, Marek Janowski's on Eurodisc, doesn't actually do anything wrong; it simply does so little right.

After James Levine's phlegmatic, turgid, dispasionate, seemingly endless recordings of Walküre and Rheingold (reviewed in Vol.12 No.7 and Vol.13 No.9, respectively), I looked forward to Götterdämmerung with what can only be described as a sense of grim duty, ready to shut my eyes, grit my teeth, and think of Bayreuth.

Well, what a surprise. If Götterdämmerung is the real story, the single music-drama for which Wagner was preparing himself—and his audience—all along, then it seems that Götterdämmerung is, so far, the only installment of the Ring that Levine ever truly wanted to conduct, or in which he had anything to say.

Levine does almost everything right here, and keeps on doing it until the final chord. Everything I missed in his two previous Ring installments can be found on these four well-packed CDs in opulent bounty: passion; expansive savoring of the score; the undeniable thrust of a never-flags dramatic through-line; what seems a full and deeply felt understanding of the leading motives and their roles as soloists in the Greek chorus that is the Wagner orchestra; and revelation after revelation of previously hidden treasures. From a score I've listened to and studied all of my life, Levine has ferreted out wonderful things: here, a caressing ppp cymbal roll I'd never heard before; there, a dramatically etched string figure; and perhaps most important—and something that virtually all conductors of this work gloss over—Brünnhilde's final entrance in Act III, the theme of The Twilight of the Gods falling from the high strings as if to drape her shoulders in a waterfall of light. Levine takes all the time in the world for this moment, in which Wagner tells us musically that this once-demigoddess, so recently all-too-human, has now taken upon herself a responsibility and a power that transcend that of even the gods themselves. Here, with less than 30 minutes of the Ring's 15 hours to go, and in a mere two bars, Wagner does the seemingly impossible: he raises everything to a level of significance, portent, and spiritual inevitability higher than anything that has gone before. This is one of the most powerful moment in all of opera, and almost no one knows it exists. James Levine does.

Siegfried's funeral music is grand and noble, and following Brünnhilde's leap onto his pyre, Levine's and Wagner's scene-painting of the dénouement—the Rhine-flood, the destruction of the Gibichung Hall, the firing of Valhalla, and the Rhinemaidens' recapitulation and purification of the Ring—all unfolded before my mind's eye as it hasn't since I was a lonely, terminally romantic teenager just newly introduced to things darkly Northern. Wonderful work; the theme of Redemption Through Love truly redeems here.
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Stereophile, February 1992
So, yes, already this recording is highly recommended, and I haven't even talked about the singing. Just as well, as there's not much of it. The principals are simply awful: Our Siegfried, Reiner Goldberg, sings as if he's learned the part phonetically in a foreign language—and he's a native German speaker. I've never heard a less emotionally involved, less intelligently sung, more wooden performance. You know you're in trouble when Siegfried is routinely upstaged by the usually mousy Gutrune—not to mention the far stronger characters of Gunther, Hagen, and Brünnhilde. Siegfried winds up as a disinterested bystander to his own story. For those who've read Stephen Fay's account of the 1982–83 Georg Solti/Peter Hall Bayreuth Ring—for which a stubbornly unteachable Goldberg sulked through months of painstaking coaching for his first-ever Siegfried, only to be dropped from the cast by a despairing Solti after the first dress rehearsal—this may come as no surprise. But even the voice itself is much deteriorated; Goldberg squalls and bleats, and his vibrato needs a chokechain. I'd hoped this recording might mark the merciful end of a short, misguided career, until I thought of Levine's final installment—next Fall's Siegfried. God help us.

On the other hand, Hildegard Behrens's Brünnhilde has all the heart you'd ever want—this is one passionate woman. Trouble is, her voice is so far past its prime she should probably never sing the role again: watery, wobbly, out of control, gasping, with a disturbing amount of truly ugly tone. Her justifiably respected acting talents cut little ice in the recording studio—histrionic swoops and dives can cover only so much. What Behrens does have going for her—rare in a Brünnhilde—is remarkably even tonal color from the very top to the very bottom of her range; there seem to be no "breaks" in the voice, no "register shifts" to remind the listener that he's listening to a goddamned opera singer. But it's just not enough.

As Hagen, Matti Salminen has matured remarkably since his embarrassing outing for Janowski ten years ago. He still has a (much-tamed) tendency to hoot and strain, but otherwise lets fly with all the darkly intelligent power of a Gottlob Frick. Bernrd Weikl is a standard-issue Gunther, properly uptight and confused, but never gets inside Gunther as he should. (Since Fischer-Dieskau, who has?) Still, the Act II Revenge Trio works a treat. I don't think I've heard this passage sung or conducted this clearly before—three individuals lost in three separate worlds converging at one bloody focus: the point of Hagen's spear entering Siegfried's unguarded back. Hanna Schwarz's Waltraute is perfectly serviceable, but I couldn't stop thinking of Christa Ludwig. And as Gutrune, Cheryl Studer is as fine a singer as this thankless role has ever had. Period. She does the impossible, making Gutrune a strong, interesting woman. How? She sings the role as if Gutrune actually cares about her own life; almost inevitably, it can't help but matter to us as well. Another bit of excellence from this fine, fine young singer.

The Rhinemaidens are the same lush trio that graced Rheingold. Their voices are unimpeachably sleek and sweet, but their Act III music is the only time that Levine's pulse falters, lacking the requisite sensuousness, fluidity, and fun. Not so for the Norns' Prologue scene, where these three strong singers, counting among them women who have sung, on record, Isolde for Karajan (Dernesch) and principal Strauss roles for Böhm (Troyanos), hold forth with the stately grandeur that this scene has always required but so seldom receives. (I admit it: I'm in that tiny minority whose two favorite Ring scenes are Wotan's Narration in Act II of Walküre and this same Norn scene.)

The Metropolitan Opera Orchestra remains the absolute miracle it was revealed to be in Rheingold and Walküre. They are now a first-rate, world-class orchestra with powerful brass and disciplined strings. And the Met Chorus, invariably a pack of happily hammy but sloppily singing supernumeraries when I heard them often a quarter century ago, now channel their gusto through throats disciplined and strengthened by the same magic that has resurrected their brothers and sisters in the pit. They turn in one of the most rousing "Calling of the Vassals" scenes I've ever heard.

The orchestra is still miked just a tad distantly for me, but the sound is considerably less frigid than the other two operas so far released (though I doubt the Manhattan Center will ever be a "warm" venue until they unroll the rug.) Soundstaging is remarkably convincing for the number of mikes I'm sure DG used, and I was happy to hear real thunder at Waltraute's approach in Act I.

I've gone on at Wagnerian length as usual, but Levine's Götterdämmerung demands praise as strongly as his Rheingold and Walküre deserved pans—it's that much better a story that much better told. With the Solti and Böhm recordings, and singing notwithstanding, definitely one of the top three to consider. —Richard Lehnhrt

Jazz

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TODD COCHRAN, piano, vocal; James Leary, bass; Clayton Cameron, drums; Michael O'Neill, acoustic guitar; Munyungo Jackson, percussion
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Jazz fans who also happen to be audiophiles will want to listen to these records, produced and engineered by David Manley of VTL. Vital Records seems to be pretty much a one-person show—in addition to engineering and producing, Manley also designed the room in which the recording was made. As he says, "The heart and soul of any recorded sound must surely be the acoustical properties of the room or hall itself, and the microphones being used within that acoustic. I designed the acoustics of the VTL studio in Chino, California, for 'purist' recording techniques only, with all the music being played 'live' and captured straight on to 2 stereo tracks."

I expected the results to be spectacular. They were something better. Manley has captured the sound of these two very different groups—Todd Cochran is a pianist mostly playing here with a trio, Munyungo Jackson a drummer with a large group of percussionists—in what sounds like a real space. The imaging on Munyungo is precise; the sounds of the various instruments as they appear can be almost startling in their clarity and projection. Manley faced up to the problem of deciding how to record a piano trio. Rather than isolate each instrument, he allows some natural overlap, explaining: "There is some loss of holography in this technique with a trio, but a major gain in the overall presentation of the music, which is, and must remain, the most important thing." Manley has issued his recordings on vinyl—each package comes with two LPs—and CD, and, though he made simultaneous analog and digital master tapes, he ended up using the analog masters for both formats. Despite an infinitesimal amount of tape hiss, when listening to Todd I instinctively preferred the LPs. Cochran introduces Freddie Hubbard's waltz, "Up Jumped Spring," with a swirling figure—comparing the two formats of that introduction, I found that there were some highs on the LP that didn't quite make it to the CD. But I never would have noticed the flaw had I listened only to the CD.

Now, as Manley might say, to the music. Todd Cochran is an experienced jazz pianist—I remember hearing him with Roland Kirk, but he's also performed with Dizzy Gillespie and recorded with an amazing variety of musicians, from Freddie Hubbard to Neil Diamond. He's an appealing musician. He does a vivid version of Billy Strayhorn's "Chelsea Bridge," and a vigorous Monk tune, "Brilliant Corners." His "Up Jumped Spring" is both firm and lyrical. Somewhat in the manner of Keith Jarrett, Cochran likes to indulge in rhythmic patterns over which he solos. Also like Jarrett, he's a romantic, as we hear in his "Alanna's Song," which begins musingly and then quickly becomes dramatic and rhapsodic. Regrettably, his own compositions frequently lack the extraordinary character of those of Monk and Strayhorn with which we inevitably compare them. On several numbers he's joined by an excellent acoustic guitarist, Michael O'Neill. James Leary is his bassist, Clayton Cameron his drummer. On "People in the Night" they're joined by percussionist Munyungo Jackson.

We hear a good deal more of Jackson on his own album, Munyungo. This is a remarkable recording, musically and in terms of sound. Jackson, who has performed with Miles Davis, Stevie Wonder, and George Duke, is a percussionist with a background in piano. He's joined here by seven other percussionists, a drummer, a man playing steel pans, two pianists, a bassist, flute, and guitar. Given the preponderance of percussionists, one might expect a bottom-heavy recording of complex rhythms. The complex rhythms are there, but so also are uplifting melodies in what sound like a variety of Latin American and Afro-pop styles. "So Happy," whose melody is played by Trinidadian Robert Greenidge on steel pans, could be the subtitle of the whole recording, which includes a unique version of the standard "On Green Dolphin Street," a melody improvised on African bells ("Peter's Bells"), and a lovely piece by Jackson, "Trees," dedicated to the trees of the world. This last features the breathy, half-sung flute playing of Pedro Eustacio. The sound is remarkable throughout this album, which ends with a Brazilian samba, "Oye Samba." I highly recommend this unusual recording.

—Michael Ullman

KEITH JARRETT TRIO: The Cure
Keith Jarrett, piano; Gary Peacock, bass; Jack DeJohnette, drums
ECM 1440 (849 650-2, CD only). Manfred Eicher, prod.; Jan Erik Kongshaug, eng. DDD. TT: 77:36

It's almost impossible to believe that this trio could have gotten any more tight, loose, funky, or trusting of each other—in a word, better—than they were on last summer's Tribute (reviewed in Vol. 14 No.8, August 1991), but when it comes to Keith Jarrett's "Standards" Trio, I've learned to expect miracles.

Here, in seven more standards and one Jarrett original, is yet more evidence that Jarrett, Peacock, and DeJohnette are farther than they ever were from exhausting the capabilities of the acoustic piano trio, not to mention the harmonic and emotional languages of American standards. If you haven't yet heard The Cure, I envy you. Here are just a few of the moments I'd love to be able
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to hear again for the first time:

1) The ever-ascending, unfurling tail of Jarrett's solo on "Old Folks"—I'm not sure I've ever heard a more relaxed, more inevitable, longer line: perfectly lazy, funny, Risky, sweet, sexy—what more could you want?

2) The long solo odyssey that is Jarrett's intro to "Body and Soul." No matter how often you've heard this song, you won't have heard it like this. Jarrett never wastes a note; nothing is ever flip-pant, glib, or throwaway, nothing ever serves merely as a bridge to get from one interesting riff to another; ever restless traveling, Jarrett never arriving in the now of each musical moment. I know of no jazz musician—except perhaps for Miles, whose only-the-notes-that-count spirit moves through this entire disc—who has been so relentlessly present.

3) The heartbreak of all of "Blame It On My Youth."

4) And the entirety of "Golden Earrings," a bluesy little tune here raised so far above its origins that it's entirely transformed. Jarrett is nowhere else in the world but inside this song, every gesture, classic or new, so fully followed through that the listener never questions that the finest way of spending the next 8 minutes and 31 seconds of his/her life is to listen to this song. The few seconds at the end of Peacock's bass solo, as he tumbles toward the tonic from an unexpected height, reaching it just as DeJohnette stumps kickdrum and highhat in a percussive "Yeah!," "Right!," "Of course!" and "Period!" constitute the coming together that's what jazz, art, life, love, sex, and music are always and ever only about. This is whole-body music.

The title cut is the single original, a more or less typical Jarrett off-the-cuff group improvisa-

Ezra Pound once said that "Nothing counts save the quality of the affection" (Cantos LXXVII). The affection these three men have for this music, this sound, these songs, and each other counts high and deep. They're still relatively young, and there are literally hundreds of standards out there that they haven't recorded—I get white knuckles just thinking about it. Once again, their best yet; this time, by a long shot. —Richard Lehnert

BRANFORD MARSALIS: The Beautiful Ones Are Not Yet Born

Branford Marsalis, tenor & soprano sax; Wynton Marsalis, trumpet; Courtney Pine, tenor sax; Robert Hurst, bass; Jeff "Tain" Watts, drums
Columbia C/CK 46990 (LP/CD). Delfeayo Marsalis, prod.; Patrick Smith, eng. DDD. TF: 78:30

Branford Marsalis takes the title for this intelli-
gently conceived, well-played trio album from a uniquely depressing novel by the Ghanaian writer Ayi Kwei Arinna. The title, The Beautiful Ones Are Not Yet Born, is the most cheerful thing about this book, which begins with depression and ends in despair. Marsalis's composition is appropriately moody and impassive, unfolding over an elastic beat established by his rhythm section, bassist Robert Hurst and drummer Jeff "Tain" Watts.

Elsewhere Marsalis is more exuberant. His models seem to include the trio recordings of Sonny Rollins (Way Out West) and Joe Henderson (The State of the Tenor), and the early recordings by the Ornette Coleman quartet—on the keen-
ing ballad, puckishly entitled "Gilligan's Island," Marsalis even quotes the melody of Coleman's "Peace" in his first chorus.

This is an adventurous recording for Marsalis. It's also a successful one. He writes several attractive, oddly shaped tunes such as "Beat's Remark," includes a piece with no preset chord changes ("Xavier's Lair"), and even when he follows the standard 32-bar form, as in "Roused About," he and his rhythm section defeat the regularity of the structure by breaking up their phrases and rhythms into unexpected groupings.

Marsalis sounds more patient here than ever before, as if he's listening harder to his partners. His improvisations develop gradually, and on the slow numbers he leaves space for the rhythm to unfold. He exploits different techniques on different tunes: on the generally fast "Xavier's Lair," he changes tempos, pulling Hurst and Watts along with him; he solos musingly over a walking bass on "Beat's Remark." On the boppish up-tempo "Cain and Abel," he's joined by younger brother Wynton in a piece that emphasizes contrapuntal textures as the two siblings pursue parallel melodic lines. They've had practice—when they were in high school, Delfeayo Marsalis explains in his notes, Branford and Wynton used to sing Bach
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chorales, Wynton taking the melody, Branford the bass line. On “Dewey Baby,” a simple tune based on a Dewey Redman riff, Branford stages a tenor battle with guest saxophonist Courtney Pine—Delfeayo calls the competition a “burnout.” It’s a Coleman-like piece, with an insistently repeated riff forming one section, followed by a more flowing second section that functions as a kind of bridge returning us to the original riff.

Most of The Beautiful Ones was recorded in England last May, with additional recording in June in New York. The sound is pleasing enough—we hear the drummer through the left channel, and usually the bass on the right, with Branford coming from the middle. (On several cuts, for no reason I can identify, Branford and Hurst switch places.) The mixing is close—I don’t get the sense of the room in which they are playing. But the instrumental sound is accurate. We’re given several mini-commentaries on the engineering. First, Delfeayo’s usual disclaimer: “To obtain more wood sound from the bass, this album was recorded without usage of the dreaded bass-direct.” That sounds responsible enough, but engineer Smith seems less than dead serious when he comments: “For the purist, this disk was recorded with two microphones direct to 2-track analog, with no mixing, editing or overdubbing. For the audiophile, this disk was recorded to digital multitrack tape, edited and mixed several times. For the listener and music lover, it really doesn’t matter!” If it doesn’t matter, it’s because the engineers, including those who mixed the tapes (if indeed they did mix them), did their job competently.

—Michael Ullman

**ROCK**

**ERIC CLAPTON:** 24 Nights
Warner/Reprise 9-26420-2 (2 CDs only). Russ Titelman, prod. DDD. TT: 104:83

It was only several years ago that I finally stopped sticking it to Eric Clapton for not tearing it up like he used to, and started enjoying his playing again on different terms. Let’s face it, Clapton is never going to cut anything like he did on the first Bluesbreakers album ever again: you get to be 20, cocky, and full of Young Man’s Energy for a very short period of your life, and then you go eat acid in the Himalayas with George Harrison, steal his wife, lose his wife, wish you were J.J. Cale, mess up, clean up, plug into Dr. Meg’s electrobot to kick heroin, dress like a male model, get a rad ‘do, and start anew. Clapton may not be God anymore, but he’s come through the wringer as, at the very least, the pope.

These live recordings from last year’s 24-night stand at London’s Royal Albert Hall offer the listener several versions of Eric The Great: there’s the four-piece touring band of EC, drummer Steve Ferrone, bassist Nathan East, and keyboardist Greg Phillinganes updating the early Cream classics “Badge,” “Sunshine of Your Love,” and a surprisingly potent reading of “White Room,” with Eric handling the vocals originally sung by Jack Bruce; the nine-piece extended band to essay his latest songs like Journeyman’s “Old Love,” “Bad Love,” and “Old Bad Love”; the blues band, featuring Robert Cray, Buddy Guy, Albert Collins, Jimmie Vaughan, and pianist Johnnie Johnson; and the Slowharmonic Orchestra, with Eric fronting the National Philharmonic Orchestra conducted by Michael Kamen.

24 Nights is an interesting, enjoyable set. While the nine-piece band and the current hits are pretty forgettable (except for the 13-minute “Old Love,” which has some barely contained raging guitar), it’s great to hear Eric blaze his way through “White Room” and “Sunshine,” even if his classic Les Paul/Marshall stack tone is replaced by his more generic ’90s rackmount sound. And the cuts with the blues band are some of the best playing Eric’s put on record in years; it makes the promise of his forthcoming blues album all the more tantalizing. About the only complaint I had with the four-piece band was with bassist Nathan East’s consistently busy playing and near-avoidance of anything that resembled Holding Down The Bottom; unfortunately, this seems to be a hallmark of today’s Pepsi Generation of Berklee School of Music (Chops U) bassists. Popular music would sound better virtually overnight if these kids, instead of spending two years studying under whoever’s holding down the bass chair in Chick’s Elektrik Band, were given the Stax/Volt Singles box set and told to learn Duck Dunn’s parts. [Amen.—Ed.]

The strangest stuff here is with the orchestra. Plopping Eric Clapton’s Stratocaster on top of orchestral swell may sound like an interesting concept, but it doesn’t really work here. “Bell Bottom Blues” becomes a regal-sounding failed experiment, like a cross between Derek & The Dominoes and ELO. Also, I can’t figure out why Eric chose to do Ray Charles’s “Hard Times” with the orchestra instead of the blues band; the woodwinds try, but they just aren’t the Memphis Horns. And weirdest of all is the bit of British TV soundtrack, “Edge Of Darkness,” a prior project of Clapton’s and composer Kamen’s; all it is Clapton playing the same lonely melody over and over against a suspense-filled orchestral background, the kind of stuff you hear after the eye-patch-wearing bad guy stroking the pussy in his lap hisses to his henchman, “Follow Meestah Bond; see that some harrrrrr comes to him.” It’s a long way from “Layla,” and the weakest part of the set.

The sound on 24 Nights is clean multi-miked live rock, nicely done but hardly audiophilic.
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It's dynamic, but the bass should've been raised in the mix; the overall sound is a little lightweight, especially for a live concert.

If you're a big-time Clapton fan (yo, Laura A.!), you'll definitely want to own 24 Nights; if you're looking for something new from EC, come wait with me in the pumpkin patch for the Great Blues Album. —Corey Greenberg

STEVE EARLE & THE DUDES: Shut Up and Die Like an Aviator
MCA MCAD-10315 (CD only). Steve Earle, prod.; Ron St. Germain, eng. DDD. TT: 76:59

It's only fitting that right before I sat down to write this review, the new country band McBride & The Ride came on "Austin City Limits"; with their country-technically—correct Busch beer commercial western wear and Nashville Network good looks, the Ride two-stepped through the same state-of-the-art Cleanboy Country-Rock that fellow genre-mates Alan Jackson, Garth Brooks, Ricky Van Shelton, and Clint Black have turned into popular music's latest commercial infatuation. These boys is from the heartland, son; sangin' 'bout thangs Lakh Suthern wimmens, honest pay fer 'n honest day, and just how gold-darn fahn yew look Darlin' when the sweet mornin' sun comes peekin' in through them K-Mart venetian blinds lord GOD Ah'll never letchew go. Ah mean, how kin yew say emmyhin' bad 'bout these clean-shaven, white Stetson'n'Wrangler-wearin' Southern Christian muthers' sons?

Well, let's try. For starters, Cleanboy Country-Rock has about as much in common with Hank Sr. and the Carter family as halvah and egg-cremes. CCR is a carefully calculated, painstakingly produced music with the narrowest stylistic envelope on today's AM/FM playlists, a house-broken facsimile that's easy to control and fronted with whatever good-lookin' feller what can imitate Randy Travis MCA chooses from their room fulla demos. That's why the very idea of a Steve Earle scares country radio and MCA clean down to their silver boot-tips.

I mean, what would you do if you had a fat ugly white-trash sumbitch with a mean stubby face and a bad attitude who also wrote and recorded some of the clearest, most direct, and brutally honest country music of the past 20 years? You've got a stable of Cleanboy Country-Rock aw-shuckers, good ol' boys that behaves them-selves dang-nab-it, and here's this surly biker-lookin' creep who can cut 'em all without even half tryin', and he don't even need outside songwritin' help, neither! You know what you'd do: Flush him like a dead goldfish. Only problem is, you went and released a couple of his albums already, and the crazy sumbitch got him a good-sized audience of loyal record-buyers; too small to threaten your Cleanboys, but too big to let him go to another label.

You know exactly what you'd do. You'd keep that boy making records, but give him just enough self-destructive rope to keep him out of the mainstream, where ever-thang is jes' FAHN, thank yew. Wanna cut another record, boy? Sure thang; why don'tcha go out'n cut you a live album, which in light of your well-known recreational proclivities will be a strangled, blurred mess, an' we'll put it out with zero push so country radio don't have to worry their purty lil' hairds about yew exposin' the whole dang game. Sounds like a winner to me, hoss!

Listening to Shut Up and Die Like an Aviator is like watching an immensely talented artist drink himself to death with record-company rootgut. No, it is that. Comprised of live shows in London and Canada, SUADLAA is a bleary, hazy approximation of the hard-edged country Steve Earle does better than anyone else on the planet; the whole album's got this weird, depressing vibe to it that's nothing if not excruciatingly sad. I say sad because it seems like Earle is riding his outlaw-biker hellbent sinner image into the soil beneath his boots with MCA's enthusiastic approval. His voice, always a little rough anyway, is extremely ragged and hoarse throughout, with a sense of desperation and partial realization that's hard to take. When Earle & the Dukes pull a droning, rote cover of "She's About A Mover," it sounds like he's being propped up by a couple of roadies, fulfilling someone else's agenda with dead eyes and a spirit cracking at the foundations. Shut Up and Die Like an Aviator is a depressing record. Before the final cut, a shit—kickin' take on the Stones' "Dead Flowers," Earle warns the audience, "Just 'cause you ain't paranoid don't mean they ain't out to get ya."

Musician, heed thyself. —Corey Greenberg

3 The first half of the show was Los Texas Tornadoes, and it was one of the most perfunctory, paint-by-numbers, embarrassing sets I've ever seen. I love these guys on record, but they must have been half-cocked or something. At one point I looked up from the book I'd tuned to, after hearing what sounded like an absolute beginner take a guitar solo in the middle of "She's About A Mover"; to my abject horror, it was Freddy Fender. Every band has their share of bad gigs; it's just a drag that the Tornadoes had to have theirs on "Austin City Limits."

4 A.P., Sarah, and Maybelle, not Jimmy, Rosalyn, and Amy, for all you readers on the East Coast.

ENYA: Shepherd Moons

Except for one or two Mark Isham releases, I'd never heard an album marketed as "New Age" that I'd liked. The entire genre seems misnamed: almost invariably, the music sounds like the least interesting aspects of "Old Age," with virtually no musical content. Besides, I quickly tire of exclusively electronic sound, of which so much New Age is built. And when New Age pianist
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and Windham Hill founder George Winston stated that he was attempting to create a music "without conflict" (I think it's impossible; for starters, there's always the conflict between sound and silence), I stopped paying what little attention I'd given the field. Besides, I had another trouble with the "New Age" handle: it seemed to imply a level of spiritual correctness that stuck in my craw; as if any other sort of music was insufficiently advanced to enter whatever this "New Age" was supposed to be.

Too harsh? I'm afraid so. Musicians can't be held accountable for the sins of their marketing and promotional people. Besides, 95% of any human endeavor—especially in the arts, and especially pop music—is invariably crap.

So, three and a half years ago, an idiot with all his prejudices firmly in place, I let slip through my fingers, unplayed, the promo copy of Enya's last album: the 1988 runaway monster worldwide hit, Watermark (4,000,000 copies sold), "New Age 'music' my third eye!" I snorted.

I didn't think about Enya again until almost three years later, when I saw, within weeks of each another, the films L. A. Story and Green Card, in whose soundtracks music from Watermark and Enya prominently figured. I waited impatiently for the final credits, ready to memorize the name of this inspired new film composer. "Who wrote that incredible music?" The credits rolled. "Enya." Oh.

Though I kept the fact under wraps for a while (after all, I had my reputation to think of), Enya and Watermark quickly became the most-played discs in my collection. Well, I'm out of the closet now: Eithne Ní Bhraonáin (her full Gaelic name) has now released Shepherd Moons. It comprises probably the most beautiful dozen tunes ever released as a pop, folk, new age—yes, it is an album. And I mean ever. I'm seduced, smitten, overwhelmed, enchanted, and take back every broad stroke I ever tarred New Age music with. There's true magic here.

For you who've never heard Enya's music—both of you—hear ye: She writes true, striking, original melodies, one after another. They're at once lush and simple, chromatic and diatonic, timeless and unique. Her highly electronic realizations are sumptuously produced, with infinite taste. (For such an electronic album, the sound is anything but, and the deep-focus mix goes on forever.) Her choices of sound and instrument are inevitably just right. Her own voice is that of a Victorian maiden shyly singing to her first love. If Enya, her first solo album, established her musical language, and Watermark was a triumphant first novel in that tongue, Shepherd Moons does the impossible: it far surpasses them both.

The opening title track is a bittersweet melody that you know you've heard before. You haven't. Its lush, many-layered textures unfold with delicacy. But most important is Enya's lingering teasing of the beat, far more sophisticated than anything you'll hear in any pop album, or in most jazz or classical releases. It's subtle, gorgeous, absolutely musical.

But every track is gorgeous, from the irresistible waltz swing of "Caribbean Blue" (which promises to be an even bigger hit than "Orinoco Flow"), to the African-like chant (with Gaelic lyrics) of "Ebudae," to Enya's settings of the two songs she didn't compose herself: the old Shaker tune "How Can I Keep From Singing?"—which sounds like her own life's song—to the old Victorian parlor ballad, "Marble Halls." Amid all the synthesizers and floating choral clouds—with as many as 200 vocal overdubs on a single track—are perfectly grounding acoustic touches: a solo clarinet here, a cordon there, and, on the closing "Smaointe," Uillean pipes. There's so much clear beauty here: the counterpointed choir in "Afer Ventus," "Evacuee"'s poignant heartbreak; and "Angeles," an outright hymn.

But they're all hymns, every one; though Enya is no longer marketed as "New Age" music (the label was plastered all over her first album), for once all the obnoxious implications are absolutely justified: Shepherd Moons is sacred music, pure and simple.

I wondered why I wept each time I played this disc. Most of us know the experience of hearing or seeing something so beautiful it makes us weep. But why do tears seem so right? Listening to Shepherd Moons and thinking of the mess we humans have made of the world, it seems we hardly deserve such beauty. Then again, if all were visited according to their desserts, none would 'scape whipping. By any fair and reasonable system of justice, we don't deserve such beauty, such manifested grace; the fact that we're given it anyway unnams, unwoms us. Any new parent knows that we receive our greatest gifts regardless of whether we deserve them or not. And that is far more humbling than the stiffest punishment. When art is the gift, the fact that the experience of being graced, even forgiven, is an aesthetic event makes the emotion no less poignant or powerful. So art replaces God in a secular age.

Shepherd Moons is the most unrelentingly beautiful album I've heard in many years. It wins my own private sweepstakes—in advance—for Best Album of the '90s in virtually all genres: folk, jazz, rock, classical—yes, even New Age. After hearing this record, I've never been able to listen to anything but silence. And for Enya I'll even break two of the Reviewer's Commandments: 1) Never Call Anything "Beautiful," and 2) Never Quote the Record Label's Bio Sheet. But some anonymous flack in the Warner Bros. publicity warren has said it better than I ever could: "Shep-
herd Months is an album that reminds us how music, heartfelt and hearth-warmed, really can make the world, and our lives in it, better, more beautiful and, for at least the moment, at peace.”
Amen.
—Richard Lehner

RICKIE LEE JONES: Pop Pop
Geffen 244426 (CD only). Greg Penny, John Eden, Jon Ingoldsby, engs.; David Was, prod. A.D. TT: 50:09

If, like me, you keep your audiophile recordings on a shelf separate from your “real music,” then you might have a problem figuring out where to file this one. Pop Pop is one of the best-bounding “music” records I own. And the music rivals any audiophile recording I’ve heard. But Holt’s Law being what it is, that’s not exactly an unqualified rave.

What do you call it when Rickie Lee Jones (or Carly Simon, or Linda Ronstadt) runs out of material? “An album of pop standards.” Like Pop Pop. But unlike Ronstadt’s Lust Life, which tried to out-Riddle Frank Sinatra, RLJ and producer David Was adopt a minimalist approach. Remember Rickie’s two cuts on Rob Wasser’s Duets (Vol. 12 No.4)? That’s the general idea. It’s just Rickie Lee, a microphone—a tube mike, no less —and a couple of sidemen. And, oh, what sidemen: Charlie Haden on bass, Robben Ford on guitar, Joe Henderson on sax, Bob Sheppard on clarinet and tenor. And their restrained playing fits in with the prime directive: No pyrotechnics here, just clean ensemble jazz.

Still, Rickie Lee is betting an awful lot on her ability as an interpretive singer, and Ella Fitzgerald she ain’t. Rickie seems a little intimidated by real hard-core classics like “My One and Only Love,” “I’ll Be Seeing You,” and “The Second Time Around.” Her solution to that problem is... to... sing... very... very... slow-w-w-w-l-y... as though the words were old and fragile and she didn’t want to break them by singing them too fast. Or too roughly. So she kind of rounds off the edges in a Tom Waitsy kind of way, and we learn that love is “jus’ as wondafow wid bo feed on da grouw.” Rickie Lee may think it’s jazzy, but I think it’s sloppy. Then again, maybe I’ve been listening to too much Megadeth lately.3

RLJ fares a lot better on the lighter material, when she picks up the pace and takes a few vocal chances. “I Won’t Grow Up,” from Peter Pan, is delightful, and “Dat Dere,” complete with background giggles from her little girl, is de same. And if you decide to serve Pop Pop at a party — a very quiet party — you can stump your guests with a game of “Find the Jimi Hendrix song.” You’ve gotta stop snapping your fingers and listen to the lyrics before you’ll pick “Up From the Skies” out of this lineup. These cuts remind me of one of my all-time RLJ faves, her cover of “Under the Boardwalk” from A Girl At Her Volcano, the 1983 10" EP. The one true clunker on Pop Pop is “Comin’ Back To Me,” by Marty Balin of Jefferson Airplane. The best you can say for it is that it brings the total time up to a digitally permissible 50 minutes. In the days before CD, this one would’ve stayed in the can where it belongs.

Now that you’ve got an idea whether Pop Pop is your cup of musical tea, here comes the unqualified rave. This is the best-sounding commercial release I’ve reviewed in full for Stereophile.6 This record’s got the reach-out-and-touch-it quality of an Estes painting. What sets Pop Pop apart, to use a Lew Lipnick yardstick, is the way it conveys the physical effort that goes into making the music. Listen to the first cut and you can hear the mechanical breathing of Dino Saluzzi’s bandoneon, get a feel for its size and shape, and even catch a sniffle from Dino himself. You can hear Charlie Haden as well as his bass, and you don’t need the liner notes to tell you that Robben Ford’s playing a nylon-string guitar. All this detail is presented on a human scale, the way you’d hope to hear it live. Call it inner detail, call it palpable presence, call it magic, but whatever you call it, it’s damn hard to capture on record and Pop Pop’s got it in spades. Surprisingly, this good work was done by no less than three different engineers: Greg Penny, John Eden, and Jon Ingoldsby. They’re identified by track, but I can’t find much to pick and choose between them. A mixed message for you analog die-hards: the recording and mastering are both analog but it’s not available on LP. You can bet that this one’s going to turn up in a lot of digital transports at the next CES.

If you’ve visited more than three high-end dealers in your life, you already know whether or not you like Rickie Lee Jones. Either you find her “head-cold” vocalizing endearing, or you wish she’d just get some Contac. But if you can stomach her at all, her latest has some truly fantastic sound that didn’t come from the used record bin or that pile of Sheffields, References, and Cheskeys. But don’t ask me which shelf to put it on when you’re through. —Allen St. John

RAW YOUTH: Hot Diggity
Giant 24405-1 (LP), —2 (CD). Jay Healy & various, engs.; Michael Beinhorn, Dave Dale, prods. DDD. TT: 43:59

The bio says they’re the toast of late-’80s CBGB New Yawk hipness, but I dunno, whoever they are, they’re not way cool, man. They didn’t play this summer’s barometer of hip, the Lollapalooza mud-fest in Jersey, and the creatures of the night in my Manhattan office never heard of ’em.

5 In Rickie Lee’s defense, let it be noted that these cuts are unedited, so what she sang is what you get.

6 Note that this lets me out of comparing it with audiophile records or anything on my “Records to Die For” list.

7 It’s a small Argentinean button accordion, used in tango music.
On the other hand, my creatures of the night do have it bad for Axl, the 17-year-old soul scorcher lensed for Alan Parker’s *The Commitments,* and anything heavily machine-shop out of Chicago. Groove-driven stuff like The Red Hot Chili Peppers are a little too, well, coltje, for the denizens. Since the Chilis’ own Michael Beinhorn handled production, my guess is *Hot Diggity* is highly literate, funkified New York-in-your-face for provincial frat dances, where Chilis Anthony and Flea puttin’ on The Sock is clapped for exurban homage to Robert Mapplethorpe.

I mean, my God, the lead (chick) singer’s name is “Myoshin,” the band name is cribbed from Dostoievsky (sorry, Thurston and everyone at SST), Chrissie Hynde and Howard Jones cameo in the “Tame Yourself” video (“Oink, cluck, oink oink moo / A man’s gotta do what a man’s gotta do”) dedicated to People for Ethical Treatment of Animals, and the main writer and guitarist is either named “Setdy Smith” or “Kolasa.” If debut LP *Hot Diggity’s* main man was indeed Kolasa and Mr. Smith is a new recruit, Raw Youth could be in trouble: his guitar work is splendid, the composition ditto.

So let’s say it’s a joke. Despite the fact it’s hard to tell the second (of three) female vocalists, Angela Gallombardo, from my goodhearted Bronx-born hairdresser, or the band’s whole vibe from one of those cheerful, ambitious, and sadder-but-wiser indie film outings like Susan Savoca’s *True Love, Hot Diggity* sounds so good I think the players must all be session musicians. Changes are crisp, lyrics are ambiguous and self-consciously tough in print but work like one of those lovely moebius strips of a madrigal overlay in your ear, and the drummer is right on the money.

In fact, the drummer really is the cox of *Hot Diggity*—the vocals swoop and soar and the other instrumental work plunders the sewing box of everything from Jimi Hendrix through Talking Heads, but the rhythm section keeps these pros in line. Beinhorn’s lent a little Chili Pepper work-it-out funkifying, plus, no doubt, the homage to K.C. and the Sunshine band (the break in “Beautiful Thing”), but the mix is just plain studio. It’s not bad, but it’s the old close-miked now-let’s-do-the-overdubs kind of stuff. A lyrical track like “Green,” for instance, which features acoustic instruments, could have opened out like the prairie had it been taken live in a nice, open room. It’s not that it’s bad here, it’s just predictable, digital, and a little squeezed.

On balance, this is a fine debut: lots of groove, lots of tricky vocal work, and an unusual sound developing from interchanging female leads and backing which form an integral part of the musical texture—kind of more like Joan Jett and the Blackhearts—a real working band—than a soprano novelty act like Heart, or a chick-singer-plus-backup configuration like The Pointer Sisters. Here there’s enthusiasm, lyrical sophistication, and a sensibility that’s been around the block instead of Michael Musto night at Danceteria. If Big Money doesn’t go to Raw Youth’s head, we may be looking at what would have happened had David Byrne drafted Bootsy Collins. Best of all, there’s not even a hint of a hit single. “Lucky Me” is the shortest track at 3:31, but it folds in a choral treatment of “Donna Nobis Pacem,” so that means no air-play apart from WUNI. Follow the drinking gourd to the digital underground. Stay tuned.

—Beth Jacques
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VTL AGAIN
Editor:
No, sorry, no "baldfaced contradiction" at all—but I do see how readers (Messrs. Yin and Chua) could misinterpret what I tersely said—an effort toward brevity:

First, as regards the 70/70, I specifically italicized the words "intended for photography only." In other words, these were untested early prototypes of a brand-new product rushed into a carton to meet an advertising photography deadline. THEY WERE NOT MEANT TO BE USED/LISTENED TO BY ANYBODY—reviewer, storekeeper, whoever. We were not even told they'd been allowed out of the photographer's/dealer's hands, and would have had a fit if we'd dreamed they were to be used for anything other than visual "modeling." That's what I meant when I said, "we were not a party...to the review" as regards the 70/70.

And again with the 225s: "we were not a party, etc." ONLY AFTER we had received Stereophile's customary pre-publication print (and a wonderful courtesy gesture it is, too) did we seek and find out that Sam had "fallen in love and firmly purchased" a pair of 225s nearly one year before the publication of his article. Apparently, as is his wont, he fell out of love again in a couple weeks and returned them.

Yes, we were pissed that Sam's article was centered around a year-old memory of a brief listening period. We were more pissed that he chose to refer to ONE EL34 tube shorting/collapsing in a VTL "Chernobyl," whereas several times in his article he mentions failures of KT88s (Quicksilver) and other tubes quite calmly in the spirit of just plain bad luck or misfortune and nothing much to get excited about.

We have supplied hundreds of pairs of 225s and we're very proud of them. Robert Harley has used a pair for some two years with no problem—the same goes for all the other purchasers. Indeed, the amplifiers that Sam apparently had were never returned to us for repair or any other reason, so they are "out there" working and being enjoyed by somebody.

Sam simply could have got a new tube from the dealer who supplied his 225s and listened on regardless...and written an intelligent review. But that is not his way. David Manley
Vacuum Tube Logic of America, Inc.

ASC STUDIO TRAPS
Editor:
We are pleased to have the Studio Trap reviewed here. Jack English's tracking and explanation of the technical features of this unit are accurate and complete. I would like to take a moment to address his observation of a loss in the distant and spacious aspects of dipole speakers that have been set up with Studio Traps to intercept the back wave.

As mentioned in the review, Tube Traps have midrange sound-scattering panels just beneath the surface. Our work with dipoles is consistent with the reviewer's observations as to the drying-up of spaciousness when the absorptive side of the Studio Trap faces the back wave of the dipole. We have found the following setup to be preferred behind the dipole.

The Trap is centered not exactly at the focal point, but moved to the outside of the focal point by about 5°. The Trap is then rotated on axis until the midrange panel faces inward.

With this arrangement the bass Trap benefits are still realized, while the midrange back wave glances off the diffuser panels into a lateral cross-fire. Stage depth and spacious aspects of playback are well developed.

The alignment of diffuser panels is always an important detail of alignment. The only Tube Traps ever made without diffuser panels were the very first pre-production run. These were auditioned by Jon Dahlquist, who promptly returned them. He said they controlled the bass well but dried up the ambience too much. We inserted diffuser panels and it worked. Diffuser panels are located opposite the sewn cover fabric seam; their position is noted on our label as well. With every Tube Trap setup, you must remember to rotate the Traps to dial in the ambience quality desired.

Arthur M. Noxon
Designer & President, Acoustic Sciences Corp.

Stereophile, February 1992

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### In-House Test Lab • 30th Year of Tube Sales

#### POWER TUBES

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**WORLD WIDE SHIPPING**
NAD 5425 CD PLAYER

Editor:
First let me thank Mr. Greenberg for his amusing, if controversial, discourse on how 15-year-old boys should spend their time and money. If nothing else, I hope you get a few letters from 15-year-old girls expressing their views on the subject.

More importantly, I totally agree with what I take to be his conclusion. Namely: Many readers of magazines such as Stereophile draw the false inference that in order to achieve an acceptable level of audio performance you must necessarily spend many thousands of dollars on your setup.

NAD has built formidable reputation for exposing that fallacy again and again. We started down that road with the 3020 amplifier back in the 1970s and have continued ever since.

It is particularly gratifying to find that a product conceived and developed in the UK has so precisely achieved its objectives under the intense scrutiny of a Stereophile review. With an NAD product we aim to give the customer the very best sound quality that he can buy for a modest outlay. To this end we shun fancy chassis, flashing lights, and seldom- or never-used facilities. We use a "teeny-tiny" power transformer when the money to install a larger one would prevent much more important refinements and gain—very little. We use inexpensive output jacks and coupling capacitors when similar parts will be used in the following equipment—probably three or four more coupling capacitors.

Where we put our time (and a little money) is into the heart of the product. The MASH chip is powered from carefully laid-out and isolated supplies. In particular, the analog supplies to the MASH chip (which are very sensitive) are fed from two separate series-shunt regulators which provide well over 100dB of isolation (very difficult to measure!). Apart from the passive filtering directly after the DAC (which Mr. Greenberg notes), the five-pole active filter was specifically developed by NAD for use with 1-bit converters. Unlike virtually all other configurations, the filter remains "active" up into the MHz region and so prevents potentially harmful (to sound quality) levels of RF from entering the rest of the system.

It is by virtue of careful attention to design details such as these, rather than "macho" multiple power supplies, that it is possible to make a CD player at $299 that evokes such comments as: "I preferred the sound of the el-cheapo NAD 5425 to the $750 Denon and the $900 Sony"; "There's an overall ease to the NAD that's a new benchmark at this low a price"; and "Recommended, therefore, as the lowest-priced entry yet into good digital sound."

Stand by for other new NAD products that don't sound "half-bad" but cost a fraction of the price of your normal recommended components.

CHRIS EVANS
Director of Engineering
NAD Electronics Ltd.

P.S. There is little to note regarding the measurements section, which is up to the usual high Stereophile standard.

XLO TYPE 4 REFERENCE SERIES
DIGITAL INTERCONNECT

Editor:
Our thanks to Stereophile and Jack English for a fine and well-thought-out review.

As may be expected, we agree with Jack that our Type 4 digital interconnect offers "the best soundstaging...yet heard from digital," and that it images with "pinpoint precision."

There are, though, a couple of points where we'd like to add some more information; a thing or two that Jack has written that has us baffled; and at least one issue where we have to side with what Jack describes as "most audiophiles," and (respectfully) disagree with him completely.

In physically describing our digital cable, Jack refers to it as using "flat wire conductors" and being built around a hollow tube "like that found coming out of an aquarium pump." Although it's difficult to tell just from visual inspection, the "flat wires" are really groups of discrete, individually Teflon-insulated solid-core conductors of "6-Nines" laboratory-grade copper, and the "aquarium tubing" is, likewise, 100% Teflon. In fact, Teflon is the only insulating material we use on or in any of the cables we make—even for the outer jackets! Other than our polyolefin end-shrinks, if it's plastic, it's Teflon.

Jack also describes our Mogami 7550 GB RCA connectors as "nothing special." In the looks department, we have to agree, but the fact is that, despite our cables' distinctive appearance, the sound is always our first consideration. We did direct sonic comparisons of more than two dozen brands and models of connectors, and the Mogami simply sounded better than any of the others. That's why we use it.

The thing that baffled us was this: In describing the Type 4's bass performance, Jack calls it "strong and extended." At one point he even speaks of "a very mild excess of bass." Then he says that it "was slightly attenuated in the deep bass." We don't understand.

Where we have to agree with "most audiophiles" and oppose Jack's stated opinion is that we do believe that we know what silver cable sounds like. That's why all of our cables are made of copper: We don't want our cables to have any sound of their own at all.

As usual, Jack has done his homework and
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VAN DEN HUL D-102 Mk.III
INTERCONNECT
Editor:
With some surprise I come to the conclusion that the reviewers of Stereophile don't read the articles in their own magazine. Otherwise the test procedure would have been different and products designed for digital use would have been used for this test. Why?

In your May 1990 issue, Mr. Peter van Willenswaard, a well-respected reviewer in the Netherlands, made very clear with explanations, measurements, and drawings that it is vital to have a correct impedance match between the CD player and the CD converter. The standard impedance for this type of connection is 75 ohms. So electrically any type of 75 ohm cable can produce respectable sonic results. Assuming that all the players and converters used for this test are 75 ohm units, and depending on the conductor material, the insulation, and the layout, as long as the impedance is still 75 ohms the unit will work, with better or worse results. But, as you can read in your May 1990 issue, many things can go wrong digitally.

There is no information given by your reviewer about the output and input impedances of the players and converters used in this test. The TEAC units work very well with the D-102 Mk.III because there is optimal impedance match. Then the quality of the 102 III is directly recognized.

When your reviewer starts using cables never built for a specific 75 ohm connection and never sold as a 75 ohm digital interlink, when the 102 III is sold in pairs (as stated at the top of your review) and digital links are standalones, we have a serious problem. It is of the same nature as using an 8 ohm output impedance amplifier directly connected to a 100V PA system, or using an MC cartridge built for a load impedance of 40 ohms and connecting this unit to an MM input of 47k ohms. It will work, but something is wrong.

Lastly, there is the complaint about the performance. A serious reviewer will not comment on products used incorrectly—or perhaps we should try petrol in a car built for diesel fuel!

Therefore, any subjective test results, however good or bad, have no other value than just in this combination of equipment tested. I may expect from a serious magazine that these mistakes are not made. The technical level of the reviewer should be such that he knows better. Our company has several products for digital links in the program. When you are interested, we can support you with our digital products.

A.J. VAN DEN HUL
President, A.J. van den Hul, B.V.

JE made it clear in his review that the van den Hul was not specifically intended for 75 ohm S/PDIF purposes. On the other hand, as manufacturers of digital transports and processors are not necessarily conscientious in arranging for their input and output impedances to conform to the 75 ohm standard at all frequencies of interest—see Paul Miller's measurements in the December 1991 issue of the UK magazine Hi-Fi Choice—the anecdotal observations offered by JE will be found useful by readers.

–JA

CONRAD-JOHNSON PV11
PREAMPLIFIER
Editor:
Robert Deutsch's excellent review of the Conrad-Johnson PV11, appearing in the December 1991 issue of Stereophile, was marred by an inconsistent and unconventional presentation of measurement data. Specifically, the frequency-response curves (line and RIAA) for the PV11 are presented with an expanded vertical scale of 0.2dB per division, compared to the 0.5dB per division scale employed by Stereophile for virtually all other amplifiers and preamplifiers, including the

Fig. 1 Conrad-Johnson PV11, RIAA error (top curve above 80Hz) and line-stage frequency response (0.5dB/vertical div., right channel dashed)

Fig. 2 Threshold FET Nine/e, RIAA error (top curves) and line-stage frequency response (0.5dB/vertical div., right channel dashed)

Stereophile, February 1992
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Threshold Fet Nine/e with which the PV11 was being compared. This scaling exaggerates by a factor of 2.5 the apparent RIAA deviations of the PV11 (which measured an excellent +0.2dB from 20Hz–20kHz). This, combined with a somewhat careless textual description of the measurement results, is likely to mislead the reader to the conclusion that the PV11 suffered from a less accurate RIAA than the Fet Nine/e, when in fact the two units were quite comparable and both excellent. This can readily be seen in the accompanying graphs, which present these data on the same scale for the two products.

My thanks to John Atkinson for assisting us by rescaling these graphs and the allocation of space to correct any misinterpretation which may have resulted from the original presentation.

Lew Johnson
Conrad-Johnson Design, Inc.

Spendor S100 Loudspeaker
Editor:
First, I would like to thank Stereophile for the excellent review you gave our Spendor S100 loudspeaker in your December 1991 issue. Second, we realize the importance of an excellent stand for an outstanding loudspeaker like the S100, and although the Chicago Speaker Stand units are adequate, we also know that it is possible to provide a much better-sounding unit. We are therefore working on several alternative models which will provide much better sound characteristics (ie, better imaging and much better bass definition). As soon as we complete our tests and decide on a model we will make it available to all our dealers. This new stand (because of its price) will be offered in addition to the Chicago unit currently available. We feel these speakers warrant and deserve a much better stand and that there are sufficient numbers of people out there who will agree, especially after hearing the difference it makes in an already excellent loudspeaker.

Lastly, although we are all saddened by the passing of Richard Schaus, we would like to assure you, and your readers, that Spendors will in fact continue to be imported by RCS Audio International, albeit in a different location. The offices and warehousing have been moved to N3119 Lazy Point Road, Fall River, WI 53932, with the sales office located at 3881 Timber Lane in Verona, WI 53593.

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Stereophile
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Sept. 1991

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Stereophile, February 1992
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THE QUALITY DEFICIT

I grew up with a healthy disrespect—almost a dislike—for rich people. Though my home town, Winchester, Mass., is one of Boston's wealthier suburbs, and my father and grandfather were officers in a Boston-area company, my father grew up on a farm and I seemed to inherit his farm-grown distrust for those who have money.

It's ironic, then, that I've spent most of my professional life working for customers most of whom come from the upper third of society, economically—and a good deal are in the top couple of percent, as our recent subscriber survey shows. (My first 16 working years were spent as an auto mechanic, with a specialty in Mercedes-Benz, BMW, and Porsche; for the last ten I've published this magazine.)

In spite of my prejudice, I've come to admire the taste of well-to-do people. If you have to charge more for a superior product or service, wealthy people will buy it. Not-so-wealthy people will also scrimp and save to have the best even though it means much more sacrifice than it does for the wealthy. The not-so-wealthy frequently have better taste because the sacrifice is commensurately greater than for the wealthy.

These thoughts were my reaction to a discussion on "Sunday Morning With David Brinkley" this January 5th. The subject was President Bush's visit to the Far East, in which he lobbied the Japanese to buy more American cars. No matter your political philosophy, this was a foolish objective; taking along a herd of Detroit auto executives underscored the foolishness.

The thorny subject of our enormous trade deficit with Japan has many ins and outs, but some of the things being said on the "pro-American" side are downright nuts. The representatives of the US auto industry particularly are acting as if Japan has had a huge head start in making quality goods, and the poor old US should be given a chance to catch up. They seem to forget that people like me (and them, even more) grew up in an America where "Made in Japan" was a stigma. Japan came out of World War II stone broke and got where they are through tremendous hard work and sacrifice—sort of like the US during the first part of this century.

When Toyota was launched in the US they had nothing like an automatic toehold. In fact, the cars weren't that great: not nearly as reliable as they are now, and not particularly well suited to Americans' needs. So what did those sneaky Japanese auto executives do? They changed the cars to better appeal to the customers! And they adopted a fanatical attitude toward automotive reliability that had never been tried by anyone—not (especially) the English, not the French, not the Americans, certainly not the Italians, and not the Germans, either. The Japanese auto industry has accomplished a modern industrial miracle. It's damned hard to make cars that don't break at all for sixty or seventy thousand miles; for all the different companies of an entire country to have virtually the same standard is amazing. Say what you want about cheap capital, government-organized industry, and cartel buying arrangements; Japanese cars sell so well in Japan and the US because they're good cars and they don't break. The reason that US cars hardly sell in Japan, and sell with increasing difficulty in their own domestic market, is that they're not so good, and they break much more often.

What's this got to do with high-end audio? Well, American high-end audio sells with no difficulty in Japan, closed markets or no. In fact, the stuff to own in Japan, and most of the Far East, is American, with significant popularity also enjoyed by British, French, Italian, and German designs. Followed closely by the Swiss, Germans, Italians, and French, the Japanese are now the rich people of the world, and will be for the foreseeable future. And like the rich people whose cars I fixed, the Japanese appreciate quality when they see it. The US auto executives wasted their time going to Japan; they should be looking at the kinds of inspired and energetic people who run businesses like Audio Research, Martin-Logan, Krell, Vandersteen, Madrigal, Thiel, Jeff Rowland Design, Apogee, B&K, Classé, Mondial, Hales, Magnepan, and AudioQuest if they want some lessons on how to sell to the Japanese. It would help them more than President Bush will be able to.

Larry Archibald

Stereophile, February 1992
Since its introduction in 1988, the Wadia 2000 Decoding Computer has been acknowledged as the standard which other digital converters strive to emulate.

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