

# AiFi Heretic

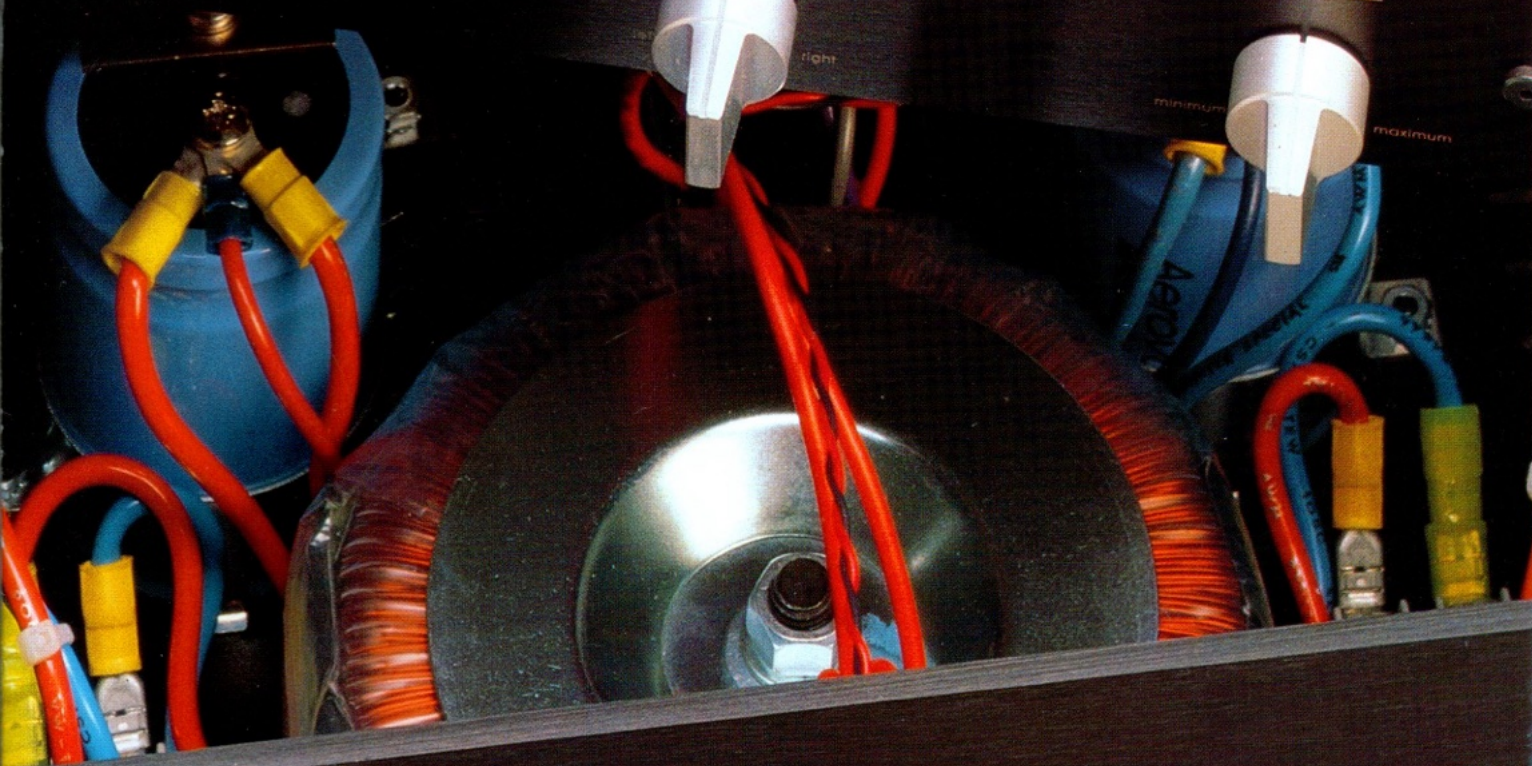
number eleven

summer 1989

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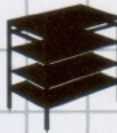
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**TT2 S**



**TT3**



**TT3 R**



**TT3 S**



**TT3 RR**



**TT4**



**TT5**



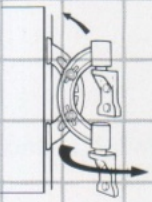
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**AIB**



**BT1**



**TAP 3**



**TAP 3A**



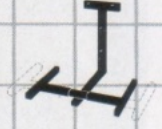
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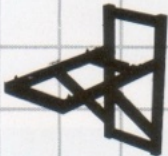
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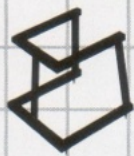
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**S6**



**S 29**



**S 35**



**S 41**



**S 51**



**S 61**



**S 69**



**HS 41**



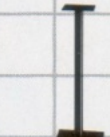
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**HS 61**



**HS 71**



**HS 30**



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**HJ51/T**



**HJ61/T**



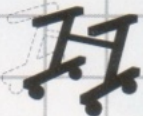
**HJ51/2**



**HJ38/3**



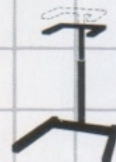
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**TAP 4**



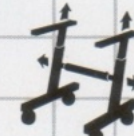
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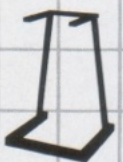
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# Hifi Heretic

number eleven

summer 1989

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Would you buy a used sitar from this man?

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## MUSIC FEATURES

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## INTRODUCTION

Well, we're getting there. *Hi-Fi Heretic* has steadily improved with each issue, and I think this latest edition is quite a step forward. That said, there are many, many changes yet to come. What *won't* change is my commitment to publishing an audio magazine that addresses the real-world concerns of music lovers. Neurotics and conspicuous consumers have several specialist (I refuse to use the term "High End" — I find it at once puerile and pretentious) audio

magazines from which to choose. Those of you who simply love music and are interested in purchasing reasonably-priced, well-made audio components that deliver *music* will find little of value or relevance in such publications. I firmly believe *Hi-Fi Heretic*, for all its flaws, does a better job of providing *useful* information to its readers than any other audio magazine published in America.

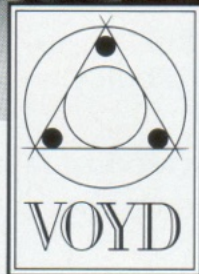
One of my most urgent goals is to greatly increase the amount of music reporting in future issues of *Hi-Fi Heretic*. Equipment reviews are of course the primary focus of the magazine, but as all sensible audiophiles know, an audio component is merely a means to the ultimate end of musical enjoyment in the home. Record reviews, feature articles, and interviews with music personalities will help keep the focus on music and not hardware worship.

There is an obvious lack of equipment photographs in this issue, a deficiency for which I must take responsibility. I was so preoccupied

with assembling this issue I forgot to engage in the usual nagging and imprecations necessary to get manufacturers to send photos of their products. I assure you this will not happen again. It may come to hiring a photographer to produce *Hi-Fi Heretic's* own equipment photos, though this seems exceptionally stupid given that most manufacturers have perfectly acceptable photos lying around their offices. Specialist audio manufacturers have a real knack for consistently blowing chances for free publicity. Another chapter from the wiggly world of audio.

The special discount on subscriptions detailed elsewhere in this issue is just that — it *will* be discontinued before long. While virtually all magazines make their special discount subscription rates available to new subscribers only, *Hi-Fi Heretic* offers these same rates to current subscribers who wish to extend their existing subscriptions. I appreciate your continued support and loyalty, and offer these special rates to you as a way of saying thanks.

— Kent S. Bransford



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## THE SOUND OF MUSIC?

The "objective vs. subjective" debate continues to rage on, and I'm finding it all a bit boring, not to mention silly. I've seen numerous long-winded discussions on this topic, all of which manage to miss the point entirely.

The "objective" crowd would have you believe the performance of any audio component can be defined by a comprehensive set of technical measurements. Thus the sound of an amplifier can be ascertained by measuring its THD, TIM, S/N ratio, frequency response, etc. Any two amplifiers that measure the same must, by definition, sound the same. The measurement advocates believe this is a far superior scheme to that of actually auditioning the product, as listening tests are notoriously unreliable in their view.

Let's take a closer look at the "objective" point of view. Imagine we have discovered a new type of audio distortion. We'll call it "bleen", with a tip of the lid to George Carlin. Half a dozen amplifiers are gathered and measured, and we find some amps exhibit very low bleen, on the order of 0.005 percent bleen, while others measure several percent bleen.

What exactly can we conclude thus far? Absolutely nothing. We have no idea how the presence of bleen distortion affects the perceived sound quality of the amplifiers. There is only one way we can discover the effects of bleen distortion on sound quality, and thus give these measurements some relevance, and that way is to *listen*. A test set-up wherein the amount of bleen distortion in an amplifier can be precisely controlled would allow us to determine to what extent bleen affects perceived sound quality. *The relevance of any technical measurement rests in the degree to which it correlates with perceived sound quality, and that can only be determined by listening.*

In other words, to ascertain sound quality (A), rather than auditioning we look to technical measurements (B), which are only relevant to the extent they correlate with perceived sound quality (A). How do we determine that

correlation? By *listening*, which is precisely the practice abhorred by the "objectivists". Rather absurd, eh?

At this point the "subjective" approach begins to look more attractive. Here we are encouraged to actually listen to the *sound* of the components. One alternative magazine advocates the standard of "the absolute sound", the sound of live, unamplified music in real space, while another publication seeks "accuracy in sound reproduction". Surely the "subjectivists'" emphasis on *sound quality* makes far more sense than the "objectivists'" number-crunching?

Wrong. Both objectivists and subjectivists commit the same error — they don't understand the goal of any audio component is to reproduce *music*. The objective crowd presumes "better" measured performance correlates with improved *sound quality*, while the subjective group determines *sound quality* by critically evaluating such performance criteria as imaging, dynamics, transparency, etc. Though in vastly different ways, both camps make the critical mistake of concentrating on the *sound* and not the *music*.

Music is simply another form of language, and as such has meaning. Language without meaning is a contradiction in terms. To succeed, an audio component must be able to communicate music's *meaning*. It is not enough to convey the *sound* of a musical performance. Can you imagine going to a play and concentrating on the *sound* of the actors' and actresses' voices, without paying any attention to what they are saying? This is precisely what most audio reviewers, manufacturers, and dealers expect you to do when auditioning an audio component.

Of course, music's meaning can't easily be quantified, so the objectivists dismiss this line of reasoning as that of the audio fetishist. The alternative audio industry should know better, but is so wrapped up in sound effects ("By God, I'll get that soundstage six inches wider if it's the last thing I do.") that the substance and meaning of the musical performance are largely lost by the wayside.

## EDITORIAL

The audio industry seems to have a tremendous aversion to evaluating products on the basis of their *function*. Audiophiles desperately need to focus on numbers or arcane terminology when judging performance. Why not simply sit down and listen to the damn thing, and see if it plays *music*? When shopping for a new automobile, do you need to know spring rates, polar moments of inertia, caster and camber angles, anti-roll bar diameters, camshaft profiles, ignition timing, included valve angles, etc. Of course not. You simply drive the car and decide whether it corners and accelerates in a manner acceptable to you. You judge the car on its *function*.

Automotive reviewers understand this, and never let impressive technical specifications or test results blind them to the fundamental question of how the car performs in the real world of day-to-day driving. Thus autos with outstanding road test numbers may nevertheless be downrated (e.g., certain Chrysler products), while other cars with less impressive stats will be deemed preferable due to their superior real-world function (e.g., virtually all Hondas).

Audio manufacturers, dealers and magazines (including *Hi-Fi Heretic*) need to take a long, hard look at what the function of an audio component truly is. As things now stand, most audio components are doomed to mediocrity. There is little hope of coming up with the right answers if we are constantly asking the wrong questions.

— Kent S. Bransford

# LETTERS

## TO THE EDITOR

### Get Real

I love your magazine, especially your emphasis on the enjoyment of *music*. Most other magazines lose sight of the fact that music is performed by real people playing real instruments, and is something to be enjoyed, not just analyzed in a laboratory.

**Steven Kaufman**  
New York, NY

### Keep It Up

I'd like to offer my sincere thanks and appreciation to you for the excellent magazine you publish. Its dedication to the musicality and quality of components is exactly the information I find useful and enjoyable. Your emphasis on products that I may be able to purchase rather than fantasize about is a welcome departure from the snobbery exhibited by *Stereophile*. Keep it up.

P.S. Since purchasing Number Ten and circulating it among friends, I have heard only comments as positive as mine. You should be receiving about ten new subscriptions soon.

**Michael A. Sheldon**  
Hermosa Beach, CA

### Orgasm Addict

After a year and a half of reading your magazine I can truly say that of all the audio magazines I subscribe to (*Stereophile*, *TAS*, and *Audio*), *Hi-Fi Heretic* is the most informative and enjoyable to read. As a result of your informative reviews which relate equipment to reproducing music, I have purchased the Spica TC-50s,

Systemdek IIX, B&K ST-140, and Audio Technica AT-F3. The reviews of these products were accurate and worth another year's subscription (check enclosed). My system also includes a PS Audio 4.6 preamp, Sony 700ES tuner, Nakamichi BX-300 cassette deck, and no CD player (previous owner of six different units — analog is better, especially with the Systemdek/PT-5/AT-F3 combination).

Your review of the Thorens TD 316 turntable was so enthusiastically favorable I went out and purchased one. Unfortunately, I never achieved the level of satisfaction you received. I tried everything to get the Thorens to sound as you described but it always fell short of bringing satisfaction to my ears. I had this table modified by Chadwick Modifications, which helped it tremendously, but something was still missing. This unit was subsequently sold and replaced with the Systemdek IIX. The Systemdek is a head over the Thorens in reproducing the life in music. As you stated in your review, it gives you a taste of what the high end turntables are all about. I recently replaced the merely adequate Systemdek tonearm with an Audioquest PT-5 tonearm, and the level of enjoyment increased another tenfold. I would love to see a comparison between the Systemdek with Audioquest tonearm (or Rega RB300) against the Rega Planar 2 or 3 tables. I believe the Systemdek/Audioquest combination would win.

The only problems I have with the magazine are the number of issues per year and the late delivery of your last two issues. You have to realize, as an avid audiophile receiving your

magazine is like having an orgasm. Waiting three to four months to have another is almost masochistic.

Thanks again for providing such a great product, and I look forward to receiving my next issue.

**Jon J. Aiken**  
Summerville, SC

*Reports from the field indicate the TD 316 still suffers from poor bearing adjustment in the tonearm. Improper adjustment seriously impairs the deck's sound, and unless corrected will prevent the user from obtaining the impressive performance described in the review. As such, Hi-Fi Heretic's recommendation of this product is withdrawn until Thorens eliminate this problem. — Ed.*

### Getting Better?

Glad to see you back in print! I enjoyed Number Ten immensely! I also like the new, smaller typestyle (more *Newsweek* than *My Weekly Reader*).

The reviews, as usual, were all of the Real World variety, instead of floating off into Lotus Land. I'm not sure if its just me, but are you actually getting better? I was deeply impressed with the first eight issues, but Numbers Nine and Ten have both left me with a renewed enthusiasm for audio, in addition to my passion for music.

And I hope *everybody* will keep using some rock 'n roll to audition equipment; it makes it easier for some of us to imagine how a piece of equipment will sound than with



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classical music at every turn.

The Heavy Metal history was fun. I used to listen to most of those bands, but grew weary of the same old riffs being recycled by the newer bands. I hope this can turn into a series of articles covering Rockabilly, Punk, New Romantic, Eurodance, etc.

Gary Noakes  
Landover, MD

### CD Associations

Wow! What a great magazine! A friend of mine, who happens to swear by digital, gave me Number Nine yesterday saying, "You'll like them. They hate CDs, too." I must say, it's wonderful to find some folks who aren't rushing out to throw some money at digital stuff. I'm still in the "waiting-for-them-to-get-their-shit-together" stage.

Again, thanks for being such a great magazine.

J. Clinton Pittman  
Birmingham, AL

### By Jingo

Number Ten was a disappointment to me because of the very heavy emphasis on British equipment. *Hi-Fi Heretic* had a much more reasonable balance between British and American equipment before Judy Davidson left. American manufacturers can offer better values since they do not have to pay tariffs, international transportation, and importer fees. I strongly disagree with Rob Doorack's comments on page 49 (of Number Ten), and I suggest that *Hi-Fi Heretic* review more American equipment from manufacturers that are "aligned with (your) magazine's philosophy". Equipment I would like to see tested are new models from American manufacturers that have tested out well in past issues of *Hi-Fi Heretic*, such as: Adcom, AVA (Jensens), B&K, Boston Acoustics, Counterpoint, Electron Kinetics, Fried, Hafler, Harman/Kardon Citation, Kindel, NAD, PS Audio, Spectrum, Spica, Sumo, Superphon, Thiel, and Vandersteen. To the list add Aragon, Bryston, Dahlquist, DCM, Forte, Grado, Lantana, Shahinian, and Snell. I'm sure I've left many other worthy American companies off this list.

Another disturbing trend in your magazine has been to review very expensive equipment such as the Linn Sondek LP12, Nova CPA-100A, Roksan Xerxes, and the Voyd. The fact that your magazine gives thoughtful reviews to affordable equipment has been what distinguishes it from other magazines.

I also hope you will take a more in-depth look at CD players. All of the major record companies are issuing new classical releases and classical reissues on CD only. The catalog of classical black vinyl discs is being deleted at a very fast rate. Many record stores and mail order companies carry CDs only. All of the classical performances in the last five years have been recorded digitally. Many of these performances are superb, and I would not want to live without them simply because they were digitally recorded. I am sure that you would agree that better sound will be heard from CD playback of a digital recording than from a black vinyl record cut from the digital master tape.

David Rich  
Woodmere, NY

*Hi-Fi Heretic reviews high-quality audio components. Their countries of origin are irrelevant. Your analysis of the economics favoring domestically-produced products is somewhat simplistic, but even if one concedes that American manufacturers do enjoy a theoretical cost advantage, that doesn't address the far more important question of whether U.S. companies put that theoretical edge to good use. To wit, where are the high-quality, affordable American integrated amplifiers? Where are the American budget turntables? Where are the well-engineered, entry-level American loudspeakers? You praise Hi-Fi Heretic for reviewing affordable equipment, yet damn it for covering too many British products. That's like criticizing Cycle magazine for reviewing too many Japanese motorcycles. If there is a paucity of budget American audio equipment (or American motorcycles), blame the manufacturers, not the press.*

*The Editor has always been solely responsible for selecting what equipment is reviewed in Hi-Fi Heretic. While Hi-Fi Heretic's primary*

*focus is on affordable products, this needn't be to the exclusion of more costly gear, particularly if the latter justifies its price with exceptional performance and build quality. While it is certainly more difficult for an expensive product to impress on value-for-money grounds, it is not impossible.*

*Hi-Fi Heretic's coverage of Compact Disc players and related products will continue. I do not agree that a digital recording will necessarily sound better on CD than on LP. — Ed.*

### Got That Right

Although I do not always agree with your comments on audio, I have enjoyed what limited exposure I have had to *Hi-Fi Heretic*. We readers appreciate the time, effort and thought you invest in what can't be a very lucrative field of publication.

William Mulrone  
Williamsburg, VA

### Men of Few Words Dept.

Wow! You guys sure have gotten elegant! The book is beautiful.

Thomas Taylor  
Columbia, SC

Number Ten is the best. Your magazine is perfect as it is. Thanks.

Fermin Aviles  
Brooklyn, NY

Thanks for a great magazine — how about a review of a SOTA turntable?

Neal Snidow  
Magalia, CA

Number Ten is the best yet! Please renew my subscription posthaste.

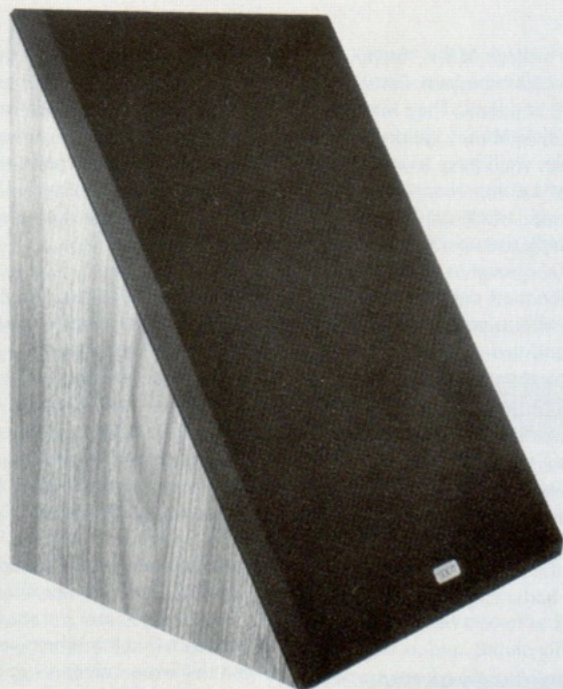
William E. Greene  
Newport News, VA

The magazine looks great. How about a thorough investigation on product reliability and follow-up support on various brands.

Gary Zoratti  
San Francisco, CA



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# ENOUGH ROPE

## From The Trenches: The Basics of Troubleshooting

By Steve Nelson  
Superphon

Some months ago, while he was reviewing two of our products, *HFH* Editor Kent Bransford called me with questions. As we were talking, I climbed onto my favorite soap box and said, "Say, why doesn't somebody at one of the magazines write an article about troubleshooting minor problems? I talk to people all the time with minor set-up difficulties, hum, things like that, and I'm sure your readers would find some kind of guide to solving these things really useful."

Well, no good deed ever goes unpunished, and some time later KB called me up and asked me to write something. Evidently shooting my mouth off *can* cause serious injury to my foot! Time to put my money (what a pittance!) in that flapping mouth. We all, at one time or another, experience some minor (or major) problems with a component in the system. For some reason, it just seems inevitable. Far worse, the problem can be compounded by incorrectly selecting a working component as the problem in the first place. Here at Superphon, we see this quite regularly, as nearly half of the products returned to us have no discernible defects.

I'll try to develop a short guide to help you in pinpointing and solving some of the most common problems and mistakes, in the event you are

faced with an attack of the "Audio Gremlins" (I call mine Sam, Larry, John, Martin, and Paul. They infest my ancient, but delightful, Citation V.). Unfortunately, we'll have to stick with the basics, as a comprehensive and utterly thorough article on the subject would probably use up a full year's worth of *HFHs*, cover to cover. Let's begin with the most common problems I seem to encounter with consumers and their systems:

### ✓ Pinpointing the Problem Area

I talk to an enormous number of people who just don't seem able to do this. They know that they should reverse the interconnects, but then don't grasp the significance of the result. I just had a call from someone who seemed to have a hum on one channel of his phono, and as we were talking, I asked him if he had reversed the tonearm connects at the preamp phono input. "Of course I did," he replied. "The hum changed to the other channel. Can you fix my preamp?" It should be obvious that the problem was not with the preamp, but this otherwise sensible gentleman just didn't understand the results of his experiment, that the problem was somewhere upstream.

Pinpointing difficulties in the system is easy to do, if somewhat tedious, by either reversing the channels, which means reversing interconnects only at one input or output, or reversing the interconnects altogether. This is simply a process of replacing the right channel interconnect with the left, and vice versa. For this article, we'll use the terms "reversing channels" and "reversing interconnects" as I just defined them. I will also use the terms "upstream", which means tracing back from what seems to be the problem toward the preamp and the original sources, and "downstream" to mean toward the amp, speaker cables, and speakers.

Anytime I encounter a strange noise, dead channel, etc., I first attempt to determine if the problem is on all sources of the preamp, or only one. Just listening to the different selector positions on the preamp will tell you this. If the problem is only on one source, I then mute the preamp, or

turn the volume all the way down, and reverse channels at the source input on the preamp. If the problem changes channels, the difficulty is upstream of the preamp, and if the problem remains on the same channel, the problem is in the preamp input. Simple enough.

If you perform this test and find that the problem did change channels, you then need to determine if the problem is in the interconnects or with the source device itself. This can easily be done by *again* reversing channels at the source *output*, effectively reversing the interconnects altogether. After this, listen to the source and decide if the problem is still on the original channel, or has changed channels. If it changed channels, the problem is in the interconnect, and if it stayed on the same channel as when we first began this experiment, it's in the source device itself.

If the problem is on both channels of a particular source input, try unplugging the interconnects and plug them into another line source which works. If the problem is gone, there are probably two defective inputs for that source input on the preamp. If it's still there, the problem is in the source device or interconnects. Yes, rare I know, but I once helped a consumer who purchased a brand new, matching pair of defective interconnects. Replace the interconnects with a pair you know are working and then try the source device again to determine whether it operates correctly. With turntables, as most preamps have only one phono in, you will need to visit your dealer and check the turntable out on another preamp.

If the problem is one dead channel on all selections, there is either a defect on the preamp outputs, the interconnects, or the power amp. To check this, **shut the power amp off!!** I emphasize this because a remarkable number of people don't think of it and are scared spitless when the amp tells them it doesn't like having its interconnects removed. Live power amps are very vocal about this sort of thing, and you run the risk of damaging the input stage. *Always, always, always* shut the amp off and give it 10-15 minutes to charge down

# fi·del'ə·tī

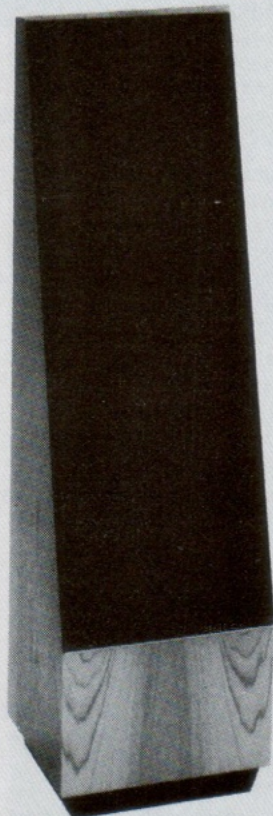
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preserve the time and phase information of music, providing more complete musical performance than conventional speakers. This time and phase accuracy along with cabinets designed to greatly reduce diffraction and enclosure resonances provide unsurpassed spatial fidelity. Instruments are correctly placed in their originally recorded positions; the sound stage is wide, extending even beyond the speakers, and remains stable in space regardless of listener position.

Accurate imaging, along with the extreme tonal accuracy provided by very uniform frequency response, and the exceptional clarity achieved by very rigid cabinets, sophisticated drivers and high quality electrical components together provide loudspeakers that deliver *complete* musical fidelity. We invite you to audition them with the music you love most.

### NEW CS 1.2

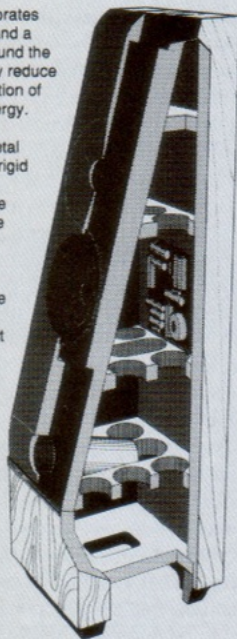


The grille incorporates rounded edges and a shallow flare around the tweeter to greatly reduce unwanted diffraction of the tweeter's energy.

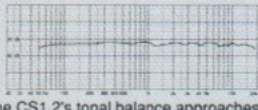
The tweeter's metal diaphragm is so rigid and light that resonances in the audible range are completely eliminated.

The sloping baffle positions the drivers for correct time alignment.

Heavy internal bracing and very thick cabinet walls greatly reduce unwanted vibrations.



This frequency response graph demonstrates how closely the CS1.2's tonal balance approaches the ideal of being uniform at all frequencies.



The step response of the CS1.2 demonstrates its very unusual ability to preserve all the time and phase relationships of the musical signal.



CS1.2 \$1090, CS2 \$1650, CS3.5 \$2450  
prices suggested retail per pair

**THIEL** 1042 Nandino Boulevard  
Lexington, KY 40511  
606-254-9427

"...the CS3.5 is the finest, most accurate loudspeaker I've had the pleasure of reviewing ...one amazing loudspeaker."  
—Bruce Bartlett, *High Performance Review* April 88

"...the Thiel (CS3.5) is a true standard for dynamic speakers...An extraordinarily musical speaker. My compliments and praise to Mr. Thiel."  
—Bebo Moroni, *Audio Review, Italy* April 87

"The (CS3.5's) overall treble performance is superb ... No electrostatic that I've heard comes close."  
—Anthony H. Cordesman, *Stereophile* Vol. 10 No. 1, January 87

"...the Thiel CS3.5 is a remarkable loudspeaker...(it) offered exceptional imaging, both laterally and in terms of depth."  
—*Audio Ideas, Canada* Summer 87

"The imaging on these speakers is nothing short of amazing ... The CS3 has quite remarkable detail."  
—Gordon Holt, *Stereophile* Vol.7 No.3, May 84

"The CS3 is simply a superb sounding loudspeaker with a remarkable natural tonal balance...And imaging is excellent."  
—*High Fidelity* Vol. 34 No. 6

"...the impulse response clearly verifies the CS3's claim of being a coherent-source loudspeaker."  
—Richard C. Heyser, *Audio* November 85

"... musically, the CS2 is outstanding ... The imaging and depth are coherent, tightly focused, and exceptional."  
—Anthony H. Cordesman, *Stereophile* Vol. 8 No. 6, October 85

"After the first couple of minutes, we had no doubt that (the CS2s) were exceptional speakers."  
—Julian Hirsch, *Stereo Review* January 86

"This is the speaker of choice for the music lover in search of a true rendition of timbres and dynamics."  
—*Revue Du Son, France* June 87

"...the Thiel CS1s are excellent portrayers of musical detail, and they faithfully and naturally reproduce all the timbres..."  
—*Hi Fi Heretic* number 7

"These (CS1) speakers do it all...Indeed, this is a highly musical system..."

—*Revue Du Son, France* November 86

before doing any interconnect or cable reverses with the amp. Look upon these precautions as a matter of heart attack prevention for yourself.

After the amp has been shut off and charged down, reverse channels at the preamp main output, turn the amp on, turn up the volume and listen to the system. If the dead channel just changed from one speaker to the other, the problem is upstream from the amp, in the interconnects or the preamp. However, if the same channel as before remains dead, the problem is in the amp/cables/speakers combination. If the problem is upstream, remember to finish reversing the interconnects, to determine whether it's in the preamp or the interconnects.

If the interconnects and preamp are eliminated as the problem source, shut the amp off, let it charge down and check the speaker fuses in the amp. One may have simply blown and replacement will solve the problem. Also, if the speakers themselves have fuses, these should be checked. Magnepons come to mind immediately, and I've seen several Maggie owners wrack their brains over a problem without ever checking the obvious. Fuses do get old, and can eventually pop for no other reason than old age.

Assuming that we didn't find any blown fuses, we should now reverse the speaker cables at the amp outputs to determine if the problem is with the amp, cables, or speakers. Nothing should be eliminated here, but I can tell you that I have only once encountered a defective speaker cable in the three-plus years that I have been involved in customer service, so a defective cable is not likely. All the same, reverse the cables at the outputs, and then complete their reversal at the speaker inputs to determine whether the problem is with the amp, cables or speakers. You can't be certain of the problem until you thoroughly check everything to pinpoint the problem.

Finally, after you have pinpointed the problem component, don't carry the pinpointing problem into the component's circuitry. From a manufacturer's standpoint I can assure you we're not kidding about the

warning "THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL ONLY." I don't want to be a spoilsport here, but you risk causing further damage in attempting to service a component yourself, and you will violate your product warranty. Keep that in mind, because part of the purchase price of the component was for that warranty, and you can throw your hard-earned money away when you lose this warranty. Contact your dealer or the manufacturer and arrange to have the defective component serviced by people trained to do the job.

#### ✓ Defective Interconnects

No fooling, this is a lot more common than most people realize. Interconnects take a lot of abuse in repeated handling and can, eventually, suffer from broken shielding and/or connections, internal shorts and the like. If the interconnect seems defective, contact your dealer and have it returned to the factory. They'll know what to do. On the other hand, prevention is the smartest course. Treat your interconnects with care, not like a leash for a St. Bernard, and you'll keep problems from occurring. Perhaps you should show your family the bill for the interconnects, just to prove your point.

You should also keep in mind that small nuances in an interconnect's perceived performance are not necessarily a defect. I have had a number of customers call and say, "It just doesn't sound as good as in the dealer's showroom!" Well, that's not surprising. What they heard on the showroom floor was a demo pair of interconnects that are well burned-in, whereas what they took home was a brand new pair of interconnects. They need to be burned in, thoroughly, before they will sound their very best.

If you move your interconnects or speaker cables from one position to another, you may also hear some differences in the sound. This is fairly common, and I occasionally receive a call from someone who thinks that movement has caused a defect. Not necessarily. George Cardas of Cardas Wire tells me that tensioning of the

conducting wires within the interconnects and cables is important to the sound. Remember that most commercial wire is multi-stranded, and any time that interconnects or cables are moved, the tensioning has been altered, changing the resonant qualities of the wire. This can cause some differences in the sonic qualities of the interconnects or cables, and they should be allowed to "settle" for a time, allowing the wire to return to its best sound.

Finally, before you assume that an interconnect is defective, you should inspect it to determine if it is directional in nature. People sometimes do purchase directional interconnects without realizing it, and if the interconnect isn't installed in the proper direction, it will sound very strange. Your only problems may be that the interconnect wasn't properly oriented when being connected.

#### ✓ Everything Plugged Into a Single Multi-Outlet Power Strip

Bad idea, but a very common problem. A single wall outlet delivers 120 volts, at whatever current level the household circuit breakers will allow. The combined power draw of a power amp, preamp, CD player, tuner, turntable, and tape deck on a single wall outlet can exceed what the line can deliver, and either cause problems with the circuit breaker, or more commonly, not provide sufficient power for everything on the multi-strip. Turntables will run slow, CD players will sound weak or hum, preamps will hum like a son-of-a-gun (unless you own a Superphon Revelation II, which will automatically mute like crazy, or continuously until hell freezes over!), and things just generally run poorly.

Don't overtax the multi-strip's capabilities. Plug your power amp directly into a wall outlet, allowing it to draw what it needs without starving any other components for power. The amp is the most power-hungry component in your system, and removing it from the strip will reduce total power draw by 1/3-1/2, allowing the other components to draw what they need. And if you are concerned about spike or surge suppression,



# The Ten Best Buys in Audio

## Art Dudley & Kent Bransford on the Linn Sondek LP12

". . . What, are we nuts? A \$1200 turntable as one of the ten great values? Or is this just one more manifestation of our strident pro-Linn bias? Neither. Just listen to me for a second: The lesson to be kept in mind here is that the turntable is the most important, influential component in a record-playing hi-fi system, period. (The fact that this is the product that taught us that lesson, though noteworthy, isn't necessarily relevant here.) And, in terms of reaching a higher level of musical performance - getting the notes right, getting the rhythms right, letting the emotion of the performance come through - the LP12 truly can transform the sound of any hi-fi . . .

Combine this level of capability with the fact that Linn's Stateside distributor has aggressively worked to keep US prices as low as possible, on a par with its cost in the UK, and with the upgradeability of this ever evolving product, and you will perhaps come to the conclusion that we have: To someone who really cares about records, this effective and extremely durable device truly is a bargain . . . "

**Reprinted from *Hi-Fi Heretic*, Issue #10**

Although CD, cassette and tuner are convenient sources, when **performance** is the criterion, a good turntable system outclasses them all. In literally thousands of demonstrations it has been shown that a Linn turntable provides **clearly superior performance** over all other sources of music in the home; and that an investment in upgrading your turntable system will make a bigger improvement in your hi-fi than any amount spent on magic cable, bigger amplifiers, or any other "down-stream" components.

The Linn Sondek LP12 was the only turntable selected by the *Hi-Fi Heretic* as one of *The Ten Best Buys in Audio*. While four other turntables (including the Linn Axis) were listed as runners up, no CD, tuner, or home cassette deck even made the list.

Visit a Linn dealer and hear a Linn Turntable for yourself. Because there are times when you want convenience, and then there are times *for the sheer love of music*.

For additional information on Linn Hi-Fi and the name of the dealer nearest you contact:

Audiophile Systems, Ltd., 8709 Castle Park Dr., Indianapolis, IN 46256 (317) 849-7103  
Aldburn Electronics, 127 Portland Street, Toronto, Ontario, Canada M5V 2N4 (416) 863-0915

single outlet suppressors are available, and inexpensive, from any number of electronics stores and electrical outlets.

#### ✓ Grounding Problems With Turntables

This subject reminds me distinctly of Pandora's Box, and I'm not certain I want to know what's under the lid. Truthfully, the rest of the article could be devoted exclusively to this subject, thus defeating the purpose. We'll treat this somewhat superficially, because over half the people who call me with phono hum problems eliminate or reduce them by grounding the turntable to the earth ground point on the wall socket. This isn't guaranteed to solve the problem, but it can get you on the right track.

I have found that a call to your dealer is generally more useful than anything else, if you have a turntable problem. Dealers are pretty knowledgeable about their products, and extremely knowledgeable about the products with strange little quirks. And turntables have a corner on the market for strange quirks! Ask for help from the people you bought it from, and do it before you start messing around with possible solutions. Very often the dealer will solve the problem with the very first suggestion, and this beats the hell out of wasting your weekend on numerous possibilities and probabilities.

On the other hand, if you must waste your entire weekend on this, experiment with grounding combinations. Ground to the preamp (many people forget to do this) and if this doesn't work, ground the turntable independently to the earth ground point on the wall outlet. Or to a different earth ground, like a cold water pipe. Do not, however, ground both the turntable and the preamp to the outlet or external ground point. You will alter the preamp's own grounding reference, which is just about guaranteed to introduce all sorts of bizarre sonic anomalies to the preamp's performance. I had a fellow call me from Alaska once, who had grounded both turntable and preamp to a cold water pipe, and he told me quite seriously that the Russians were

jamming his stereo system! Ground the table independently, and let the preamp take care of itself.

#### ✓ Components Too Close Together

I see this one all the time. Generally, a preamp right next to the television, or preamp stacked on top of the power amp. I just had a call from someone who stacked a TV on top of his power amp and the preamp on the TV. Wanted to know if there was some reason for all the white noise he was hearing (not to mention the fuzzy picture!). Conflict in magnetic fields from transformers will set up all kinds of problems and, short of lead shielding, avoidance is the only solution. Keep components away from one another! The space doesn't necessarily need to be more than 6-12 inches, but don't ever stack them on top of one another. And try to avoid running interconnects and speaker cables over power supply boxes, power amps, etc. You're bound to get some strange interactions.

#### ✓ Overheating Power Amps

This is either a defective power amp or inadequate ventilation. If the power amp is enclosed inside a narrow shelf, put in another shelf with more top-to-bottom room. Pull it up to the front half of the shelf so it has plenty of room to "breathe". If need be, drill a few holes in the rear wall of the cabinet for better venting. If you have your power amp inside a cabinet with glass or wooden doors, open them. Let air flow freely through the cabinet and help the amp dissipate heat more adequately.

Another common problem is an amp set into deep plush carpet. What happens here is that the carpet is so deep that air cannot be drawn through the fins of the heat sink. Remember that air is drawn at the bottom of the sink and rises rapidly between the fins as the air becomes warmer, a flue effect. Get the amp out of the carpet. Place it on a pair of wooden blocks, or put it on a shelf or table top and give it room to ventilate itself.

With tube amps, you will want to either place the amp in a place where

it is better ventilated, or you may need to check bias. Biasing does need to be checked from time to time, and you should refer to the owner's manual or check with your dealer about this. But don't assume a servicing difficulty without checking out the obvious.

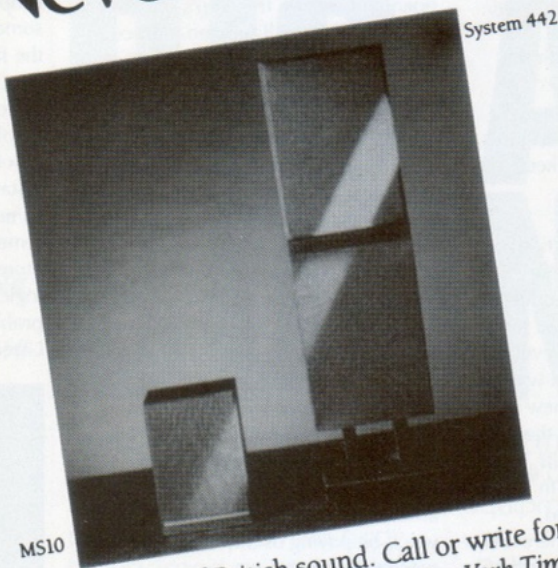
#### ✓ Everything Hums Loudly

Two solutions here. Either the transformer is defective (inadequately lacquered at the factory and will become progressively louder — a rare problem), or the amp or preamp has been placed on a hardwood shelf in a recessed cabinet. The echo of normal transformer noise is magnified by the cabinet. Poly foam packed into the back of the shelf generally eliminates this problem. Additionally, the same sort of problem can be encountered by people who keep their systems in a closet, and you should consider this before you call the factory for servicing. The most minimal amount of transformer hum can be magnified to problem proportions when the components are placed in the right (wrong!) spot.

#### ✓ I Plugged It In and Nothing Happens

This is an amazing occurrence, and happens to every audiophile at least once in his or her life. And don't you let anyone tell you different! You'll connect your brand new CD player to the preamp and find that *nothing* happens. The most common solutions are: a) the interconnects went to Video and the selector switch is on CD; b) we forgot to plug the new CD player into the power outlet; c) we, in our great haste, forgot to switch the preamp from mute to play, or forgot to turn the volume up; d) we put the disc into the CD player upside down; and, e) something may actually be wrong with the new CD player. Not to pick on CD players, it was just a convenient example. You'll definitely want to check all of these possibilities before calling 1) your dealer, 2) the manufacturer, 3) the preamp manufacturer (I don't know why people call me on this — we don't build CD players!), and 4) your seven closest audiophile buddies. A lot of long distance expense could be saved here. Nonetheless, we manufacturers always

# The British Invasion Was Never This Quiet.



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like hearing from you, and we will point out the obvious. I hope that doesn't sound snotty, because it certainly isn't meant to. It's just that this happens so very often, and the phone conversation invariably ends with the consumer saying, "Now why the hell didn't I think of that?"

**✓ We Keep Blowing Speaker Fuses in The Amp**

Before you freak out and call the list of people you called in the last example, consider the obvious. Speaker fuses are installed in a power amp to protect it, and the speakers, from harm. If the fuses keep blowing, they are trying to tell you that something just ain't kosher with this picture. Don't run down to the electronics store and replace your blown 5 amp fuses with 20 amp fuses, find out why the 5 amp fuses keep blowing.

Did we check all the connections? Did one of those *wonderful* little banana plugs slip out of its connecting socket, thus allowing positive to touch negative? (If I had a nickel for every time this has shown up while I was on the phone, I could have two new sets of KT 66s for my Citations!) Is there a blown fuse in the speaker itself? There might be something wrong with your amp (if you keep replacing and blowing fuses long enough, there *will* be — especially if you use larger-than-recommended fuses), but more often than not something has gone gunnybag with the speakers or the connections, and your amp is only trying to tell you something.

**✓ It Sounds Like It's In Mono...**

It probably is. Did you check the mono/stereo switch on your preamp and/or amp? This is an easy thing to forget. Very often it's not even forgotten. While changing interconnects, you may have accidentally bumped the switch. Or perhaps your loving wife (finally tired of the 2 1/2 year accumulation of dust on the power amp, and in thoughtfully cleaning it for you) accidentally did the dirty deed. Whatever, if it sounds flat, dull and lifeless, something is probably in mono.

This last one really isn't a common problem, but it will make you think:

**X Your Cat Just Pissed in Your Amp**

Yes, this really does occur. More commonly with computers than audio components, but we've had it happen four times. Cats just love to lie upon warm, vibrating surfaces, which includes power amps on the floor. And their human caretakers (see it from the cat's point of view) always find this endlessly cute. Unfortunately, cats can, and do, urinate in their sleep, and if this occurs closely enough to the opening vents on the amp's top cover, exciting things will happen. Particularly for the cat.

To save yourself from expensive non-warranty service (that's right, parts and labor do not include acts of God, much less cats!), never allow your pets to sleep on any of your stereo components. I know this sounds dumb, but over the past few years, cats have accounted for four Superphon power amps. And Superphon amps have blasted a few cats, all of whom were lucky enough to live through the experience. I also know, from my dealers, that cats have accounted for a number of turntable and tonearm repairs. Don't allow your pets to play around your stereo components, or you'll be paying us *and* the vet to patch things up.

Fortunately for us, after the first time this happened, we made arrangements with the Marine Corps Reserve Center for the loan of NBC (nuclear, biological, and chemical) capable filter masks for our service technicians. After cooking away in a live power amp and then being bounced around in UPS for 7-12 days, amps that have suffered from this unique service problem tend to smell rather ripe upon arrival at the factory.

One additional problem I have encountered with pets and my systems is that they tend to be critics. This sounds a bit far-fetched, but it's true. Our regular four-pawed visitor guest at my house is Keike, a normally warm and friendly dog. Keike has proven to be quite a serious listener, which my roommates and I find terribly amusing.

The problem arises when we are all listening to something which Keike doesn't care for. He's really more a jazz and classics fan than anything else, and when one roommate wants to listen to Frank Zappa (do people really listen to this stuff?), he is informed in a less than subtle manner that Keike, 95 lbs. and all Rottweiler, would much prefer to listen to *Moscow Sessions*. The moral is, you may wind up listening to whatever the big dog wants. What Keike wants, Keike gets.

Well, this certainly isn't a long article on service problems and solving the simple ones, but I hope it helps you somewhat. Your dealer and the folks at the factory always enjoy hearing from you, and are happy to assist you, but as you can see, some problems involve the obvious. Hopefully this article will save you a hefty long distance bill if you should run into some of the difficulties listed. Just remember that the solution is usually more obvious than not, and simple logic will help you find both the problem and the answer. Good Listening to you all! ■

**Attention  
Manufacturers  
and Dealers:**

**"Enough Rope" is your forum. Music lovers are interested in hearing your views on a variety of topics related to audio. If you would like to contribute material for this column, please contact the Editor.**

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ACOUSTICS: -

REVOLVER: -

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the American  
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integrated amplifier capable of  
beautiful sound."  
-Neil Levenson,  
Fanfare Magazine.

*ES14 Loudspeakers.*

"Epos ES14s...among the most  
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-Art Dudley, Sounds Like...

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"Revolver Rebel:  
A breakthrough product.  
The best buy in turntables  
today."  
-Neil Levenson,  
Fanfare Magazine.

*Integrated Amplifiers,  
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# FLOTSAM

# JETSAM

*from the stream of commerce*

● **Thiel Audio** unveiled their new flagship loudspeaker, the **CS5**, at the Summer Consumer Electronics Show in Chicago. A five-way dynamic system, the CS5 utilizes a sloping baffle and electronic correction to achieve proper time alignment and an unusual synthesized first order acoustic crossover system that provides perfect phase, amplitude, and power response.

The CS5 incorporates several distinctive design features. The front baffle is a three-dimensional marble/polymer composite casting that provides extremely rigid mounting of the drivers and is shaped to

nearly eliminate unwanted cabinet edge diffraction. The complex electrical ("crossover") network is implemented with 116 high quality components including polystyrene and polypropylene capacitors and high purity copper wiring. Driver diaphragms are made of either aluminum, Kevlar® or Kevlar®/foam sandwich to drastically reduce "cone breakup". Bass response is provided by three very long throw 8" drivers which feature, along with the 5" mid frequency driver, special distortion reducing magnet systems.

Specifications include -3dB bandwidth of 20Hz-22KHz, frequency response of plus

or minus 1 dB from 25Hz to 20KHz, and a sensitivity of 87dB/1 watt/1 meter. The speaker is 64" tall, 13" wide, and 17" deep. Available finishes include teak, gloss black laminate, rosewood, walnut, and oak.

Projected retail price is \$9700 per pair. Contact Thiel Audio, 1042 Nandino Blvd., Lexington, KY 40511. (606) 254-9427.

● **Arcam** introduced its new **Delta 170** CD transport at the Summer CES. The Delta 170 is an audiophile CD player without DACs (digital-to-analog converters). It provides the best possible digital output signals for use with high quality external D

to A processors.

Arcam has found the performance of converters to be limited by the CD transport source. To minimize vibration and clock jitter, the Delta 170 employs a fully floating die-cast single beam laser mechanism, mounted on a damped sandwich-construction aluminum chassis. Full 64K adaptive error correction is used. The master oscillator, which must be jitter-free for good D to A conversion linearity, has a separate dedicated transformer and power supply and is optically isolated from the servo and microprocessor circuitry.

The Delta 170 comes with a full function remote control. Retail price is \$1295.

Contact Audio Influx Corp., P.O. Box 381, Highland Lakes, NJ 07422. (201) 764-8958.

● **Tannoy** debuted their "90's Series" loudspeakers at the SCES. Utilizing the patented Differential Material Technology (DMT™), Tannoy's "90's Series" loudspeakers provide accurate, full dynamic range performance from compact cabinets. The series is available in either Dual Concentric or Discrete driver designs, offering a variety of choices to the discerning audio enthusiast.

The high frequency drivers used in the series utilize an aluminum diaphragm

suspended by a polyamide surround. This DMT construction yields very linear, piston-like high frequency characteristics with high power handling, while avoiding the undesirable eddy current coupling effects common to one-piece metal designs. Extensive research led to the polyamide plastics material, chosen for its excellent self-damping and freedom from temperature variations.

The bass drivers are constructed with rigid frames using oversize magnets, thus ensuring high sensitivity and good low frequency control. The cone material is polyolefin co-polymer, selected for its high rigidity, low mass, and high internal damping. The cone is precision formed with a flare optimized for the most neutral and natural midrange reproduction.

All crossovers in the "90's Series" utilize the highest quality components, and are hard wired. The latter provides a cleaner, more detailed sound by keeping unnecessary resistance and impedance to the absolute minimum. High-grade polyester capacitors and iron-dust core inductors were selected for their superior sonic performance and are laid out to minimize inter-component coupling and are positioned well away from the magnetic fields of the drive units. Connecting the "90's

Series" loudspeakers to a bi-amplified system is a simple matter, as all the models provide additional rear panel connectors for this purpose. Besides separating the signals for both low and high frequency drivers, this also separates the ground paths, which reduces driver interaction, leading to a cleaner sound with full natural dynamics.

Price range of the "90's Series" runs from \$425/pair to \$1800/pair. Contact Tannoy North America, 300 Gage Ave., Unit 1, Kitchener, Ontario, Canada N2M 2C8. (519) 745-1158.

● **Lazarus** announced the availability of the **Balanced Classic** and **Balanced Deluxe** preamplifiers. Both models are two-chassis, separate power supply units. Designed to capitalize on the advantages of modern balanced or differential circuit design, they allow for a new threshold of musical realization commensurate with Lazarus' dual-monoblock, fully-differential amplifiers.

The **Balanced Classic** is intended for use with medium to high output phono cartridges, while the **Balanced Deluxe** features an internal FET head amp for flexibility with all cartridges.

Prices unavailable at press time. Contact Lazarus Electronics, 8130 Coldwater Canyon, North Hollywood, CA 91605. (818) 982-6477. ■

# GRAND

# ILLUSION

A thousand dollars isn't what it used to be, especially in the field of specialist audio. Reviewers routinely refer to \$1700 preamps as "budget" models, and the introduction of several \$5000-plus units has effectively converted \$3000 gear to the "mid-price" range.

This is, of course, utter madness. Only a fraction of America's audiophiles can afford such equipment, and indeed it consistently amazes me how much press coverage such products receive, despite the fact they are largely irrelevant to the vast major-

ity of us.

On test here are six products (three preamplifiers, three power amplifiers) that most music lovers could actually afford to buy. Two of the preamps came from companies known for offering superb value for money, B&K Components and PS Audio. Forté is a newer company, with ties to the esteemed Nelson Pass of Threshold fame.

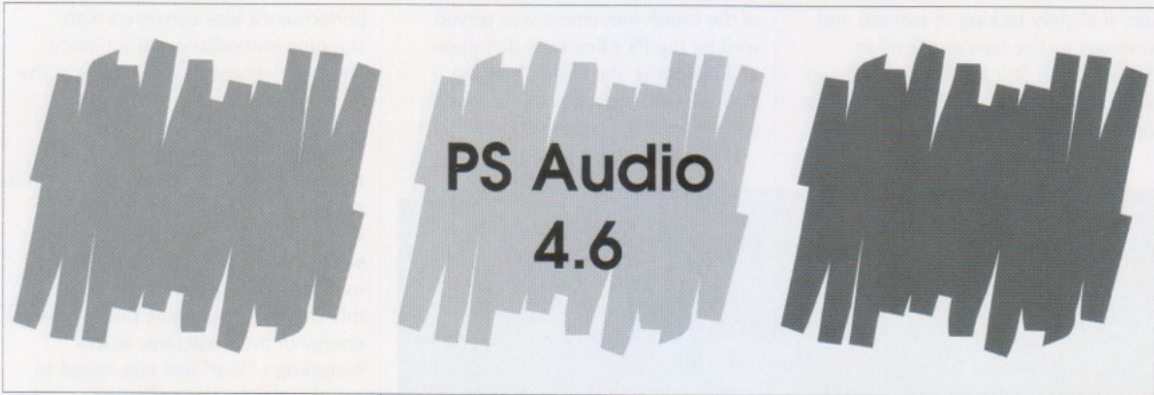
The three power amps on test include the highly-regarded Adcom GFA-555, the Forté Model 3, and the Belles 150. Belles Research is not well-known in specialist

audio circles, but on the basis of the superb performance turned in by their power amplifier, that should soon change.

Reviews in Issue Twelve will include the Belles 450, Hafler XL280, and B&K M200 monoblock power amplifiers, as well as preamplifiers from Lazarus, Audible Illusions, MFA, Counterpoint, and others.







## PS Audio 4.6

PS Audio's 4.6 is, at first blush, a classic example of the minimalist preamplifier. The front panel carries volume and balance controls, "listen" and "record" program selectors, and an output selector switch. Simplicity itself. Closer inspection, however, reveals an interesting option available through that output selector. PS Audio's well-known "straightwire" configuration completely bypasses the line amplifier, effectively taking line-level (e.g., CD player) input signals directly to the volume control and thence directly on to the power amplifier. By eliminating a stage of amplification, the "straightwire" mode can theoretically offer cleaner, less distorted sound.

Of course, the operative word is "theoretically", as the straightwire arrangement places greater demands on the source components. They must have sufficiently low output impedance and sufficiently high output voltage to drive the power amplifier directly. Even then, there is no guarantee that the sound will be preferable to that obtained through the PS's "high level" output setting. Depending on the sonic characteristics of the source component, the added coloration of the preamp's line stage may actually complement the source component's weaknesses, and thus offer more pleasing sound than that obtained through straightwire operation. There is no hard and fast rule regarding use of the straightwire mode — the results must be judged on a case by case basis. The beauty of the 4.6's arrangement is that it makes it so easy for any music lover to experiment and decide for himself the merits of straightwire operation in the context of his own system. The B&K MC-101

Sonata (reviewed elsewhere in this issue) also features this line amp bypass facility. One hopes this signals a trend, and other preamplifier manufacturers will follow suit.

Another feature often associated with PS Audio is infinitely variable input impedance of the phono section. The 4.6 can accept either MM or MC cartridges, selection between the two stages achieved by engaging a switch on the 4.6's circuit board. Four gold-plated sockets (two per channel) on the board accept the leads of the load resistors used to set input impedance. The 4.6 is shipped from the factory with the phono inputs set at 47k ohms (suitable for most MM and high-output MC cartridges), and PS supply a small selection of resistors (1000, 300, 10 ohms) to obtain the lower input loads required by many low-output moving coils. Of course, the user may substitute different resistors as required. While not as handy as the DIP-switch arrangement used in the Forté Model 2, the PS approach has the advantage of allowing virtually any load value to be easily set.

In addition to offering the ability to choose between "straightwire" and "high level" operation, the output selector offers mono operation and a muting circuit, the latter important as the PS is designed to be energized at all times — there is no off-on switch. In the event of momentary interruption of power to the preamp, the muting circuit will prevent a nasty turn-on transient from reaching the power amp and speakers upon resumption of power.

There are inputs for a turntable, CD player, tuner and two tape decks.

Gold-plated RCA jacks are used for all inputs and outputs. The PS includes two sets of main outputs. As with the Forté and B&K units, the 4.6 utilizes an outboard power transformer. The 4.6's M-250 transformer is a huge (for a preamplifier) 250 watt unit, with its extremely low output impedance paying dividends in more efficient power delivery to the preamp's circuitry. Build quality of the 4.6 is impressive given its modest price, with exceptionally high parts quality inside and out. All controls (save for the volume attenuator) and jacks are mounted directly on the 4.6's single glassfibre board. Styling is very attractive, with the 4.6's sleek, low profile aluminum faceplate looking elegant indeed. The elliptical control knobs resemble those used by Audio Research, and the large volume knob has exceptionally nice "feel". Again, construction and finish are superb for a budget product.

From the outset, it was obvious the 4.6's greatest asset is its remarkable sense of clarity and detail. Music through the PS has an immediacy and presence that is almost spooky. Alas, this comes at the cost of a slightly forward, thin tonal balance. While not a great problem, this forward character does demand a degree of care be taken in selecting associated components so as not to exacerbate the problem.

Beginning with the *Rickie Lee Jones* album, the 4.6 amazed me with its ability to convey low-level detail and recording acoustic. Minor instrumental touches and nuances that were all but inaudible through the Forté came through crisply and cleanly here. Jones' vocals were vivid and immedi-

ate, if slightly lacking in warmth and resonance. The bass guitar riff in "Danny's All-Star Joint" had fine snap and pace, though the PS was not quite up to the standards of the Forté in this

of the fourth movement was served well by the PS's fine note definition and crispness, the violins coming through with a great sense of tension and urgency. Bass power and impact

performance was conveyed with stunning immediacy and intimacy, Newman almost seeming to be in the listening room.

**Price: \$739**

**Contact:**

**PS Audio, Inc.**  
**4145 Santa Fe Road, #2**  
**San Luis Obispo, CA 93401**  
**(805) 543-6655**

Last up was John Prine's *Bruised Orange*, and again the PS triumphed in spite of some tonal deficiencies. Prine's vocals came through with some extra rasp, but this was not overly troublesome. Far outweighing this was the remarkable presence and energy of the musicians, as this recording's "live" feel was raised to new heights by the 4.6's clarity and note attack. Acoustic guitars came across with almost startling immediacy. That said, the timbre of the instruments was a bit cold and threadbare.

regard. Note attacks and dynamics were outstanding, and this gave the music a further feeling of vitality. The performances on this album had a "reach out and touch" intimacy that was addictive. True, saxes sounded a bit thin and hard, and piano lacked some body, but I was able to listen around this and enjoy the spirit and energy of the music.

were impressive, with bass drum and tympani coming through convincingly. Also impressive was the size of the soundstage set by the PS, with the width of the orchestra particularly well portrayed. This combined with the superb retrieval of recording acoustic to make the sheer size and force of the orchestra more easily appreciated.

For many people, the sheer immediacy and vitality of the PS will be irresistible. The multitudes of details and subtleties that give a performance its personality and character are easily apprehended through the 4.6. I must stress again the importance of system matching, as partnering the PS with a bright or aggressive cartridge, power amp or speaker will surely lead to grief. Use reasonable care and common sense in selecting your associated components, and the 4.6 will dazzle you with its vivid, lively presentation. Combine this sonic excellence with the 4.6's exceptional build quality and operational flexibility, and it becomes obvious the PS easily qualifies as a "Best Buy". ■

The Shostakovich symphonies sounded especially exciting and involving, with the 4.6's detailing and clarity bringing the listener closer to the performance. Strings were stunningly vivid and alive, if tonally cool, and brass had great presence, though at the expense of some slight stridency. The martial cadence section

Michael Newman's guitar in the Bach Chaconne neatly summarized the strengths and weaknesses of the 4.6. Sounding slightly threadbare and cold, the instrument nevertheless managed to come across with impact and substance. Note attacks and dynamics were superb, and this helped compensate for the relative lack of warmth and resonance. This

**Forté Model 2**

Designed "under the direct supervision" of Threshold's Nelson Pass, Forté components seek to offer exceptional sound and build quality at prices

within reach of most music lovers. Audiophiles on a budget can thus enjoy the fruits of a renowned engineer like Pass without spending

thousands of dollars for one of his highly-touted Threshold designs. Krell's Dan D'Agostino entered into a similar arrangement with Mondial,

designing the (relatively) affordable range of Aragon electronics. This "designer label" trend seems to be picking up steam throughout the audio industry.

The Forté Model 2 preamplifier is the epitome of minimalist design, its front panel sporting but four controls — one each for selecting "listen" and "record" program sources, and balance and volume controls. There is no power switch, the Model 2 intended to be energized at all times. While the Model 2 has no muting function, Forté have managed to design the circuitry in such a way as to eliminate damaging transients when power is applied. In the event of temporary interruption of power to the preamp, only a mild thump can be heard when power is restored.

Somewhat unusually for a specialist preamplifier in this price range, the Forté Model 2 is a hybrid IC/discrete design, with integrated gain circuits used in both the phono preamp and line amp stages. Forté use Linear Technology LT1028 chips, biased to class A operation. The circuit layout is exceptionally clean and uncluttered, with the phono stage to the extreme left (as you face the preamp), and the line amp stage to the extreme right. The use of ICs greatly reduces the overall number of parts required in the Forté's circuitry, and the Model 2's board looks positively barren next to those of the PS Audio and B&K preamps. As with the PS and B&K, the Forté employs a remote power transformer to minimize noise, and indeed the Model 2 is one of the quietest preamps I've ever heard.

There are inputs for a turntable, CD player, tuner, TV audio, an auxiliary source, and a tape deck. Choosing the "tape recorder" position on the "listen" selector allows one to monitor tape recordings in progress. All inputs and outputs use high-quality, gold-plated RCA jacks. The "analog disc" (i.e., phono) input accepts both MM and MC cartridges, and the Model 2's flexibility in accommodating a wide variety of cartridges is perhaps its most impressive feature. Two banks of DIP switches (one per channel) are mounted on the Forté's circuit board. The first three switches control the preamp's gain: 40 db for most moving

magnet cartridges, 50 db for many high-output moving coils, and 60 db for low-output moving coils. Of course, the specific output of a given cartridge will establish which gain setting is optimum. The next three switches determine the phono stage's input impedance: with all three switches off, impedance is 47k ohms, and selection of any of the three switches will yield impedances of 100, 47, and 22 ohms. The last two switches control input capacitance, with values of 100, 200, 300, and 400 picofarads available. I find this an exceptionally useful and convenient design, and urge other manufacturers to offer similar schemes in their preamps.

The Model 2's striking appearance belies the Forté's modest cost — this is clearly one of the best-looking

distanced the listener from the performance slightly. Acoustic guitar on "Night Train" lacked a degree of presence, missing some of its usual vitality and immediacy. The more uptempo tracks had great swing and pace, with the Forté's exceptional note attack and dynamics playing a part here. That said, the sound still didn't have quite the presence and impact as when reproduced by the PS Audio 4.6. The horns towards the end of "Danny's All-Star Joint" slightly lacked power and dynamics, their bite and attack diminished somewhat. Overall, the sound here was exceptionally smooth and pleasant, if perhaps a bit remote and distant.

Holst's *The Planets* was next, this piece being a particularly good test of dynamic impact. In "Mars, the Bringer of War", the rolling, swelling power of

Price: \$890

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Forté Audio  
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Auburn, CA 95603  
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preamplifiers available. Designed by René Besné, the 2's sleek black faceplate and sculpted silver knobs strongly echo the design motifs embraced in the elegant Mark Levinson preamplifiers. Fit and finish are impressive, and indeed the Forté's overall build quality is outstanding for the price.

One of the first things I noticed about the Forté's sound is its exceptional bass response. On the *Rickie Lee Jones* LP, the opening bass guitar riff in "Danny's All-Star Joint" was remarkably crisp and vivid, the attack and decay of the individual notes easy to appreciate. Jones' vocals displayed fine body and warmth, though with just a slight bit of hardness noted. There was some reduction in recording acoustic apparent, and this

the orchestra sounded a touch quashed, its frightening impact rolled off slightly. Strings revealed a hint of hardness, though this wasn't a major problem. More troubling was the pervasive sense of *distance* here, as the orchestra never sounded quite as immediate as through the PS and B&K units. Low-level detail and recording acoustic were also a bit curtailed, and this further undercut the performance's immediacy.

Stevie Ray Vaughan's "Tin Pan Alley" (from the *Couldn't Stand the Weather* LP) is a dramatic blues tune, and the Forté did a nice job of conveying the tension and moodiness of the track. Note attack and dynamics were excellent, though there was a slight sense of compression on sharply-struck guitar notes. This performance

is bathed in recording acoustic and air, and the Model 2 came up a bit short in this department, with the musicians sounding a touch flat and remote as a result. Bass guitar and kick drum were again exceptionally quick and tight, making faster paced tracks move along with great pace and drive.

John Prine's album *Bruised Orange* highlighted the Forté's difficulties in capturing recording acoustic, as this album's exceptionally "live" feel was diminished somewhat. That said, the Model 2 still did an impressive job with note attacks and dynamics, the acoustic guitars in particular sounding crisp and forceful. Prine's vocals sounded smooth and clean, with no exaggeration of his natural rasp, but he did come across somewhat distant, as though he had been moved back in the mix slightly. I also listened to Talk

Talk's "Give It Up" (from *The Colour of Spring*), and was struck by the power and crispness of the bass guitar and kick drum. At the end of the tune, the drums are prominently featured in the mix, and I noted a slight lack of reverb on the snare drum shots.

While I feel the Forté has some problems in retrieving low-level detail and recording acoustic, it is nevertheless a satisfying performer. Perhaps its greatest strength lies in its sense of balance, as the Forté never sounds coarse or strident. Across a broad range of program material and associated components, the Model 2 never failed to provide a fundamentally musical performance. The 2's crisp note attack and exceptional sense of rhythmic progression and tempo make music more involving and compelling. What troubled me

was its consistent lack of presence and immediacy, as music never quite broke through and reached me as it did when presented by the PS 4.6 (and, to a slightly lesser extent, the B&K MC-101). Others may find the Forté's smooth, understated presentation preferable to the PS's lively, forward balance. To a great extent, this will depend on the listener's associated equipment.

In any event, the Forté's combination of excellent build quality, exceptionally flexible phono stage (in this respect the Forté is clearly the best of any preamplifier I've seen in this price range), and smooth, balanced sound make it a solid value at the price. The Model 2 is certainly one of the best preamplifiers I've heard under \$1000, and well worth investigating. ■



B&K's Sonata Series is a new line of upmarket electronics, consisting of one preamplifier (the MC-101 on test here) and two power amplifiers, the M200 monoblock (200 watts into 8 ohms, \$898 each; this unit will be reviewed in Issue Twelve) and the PRO-600 stereo amplifier (200 watts per channel into 8 ohms, \$1498).

As with B&K's other preamplifiers, the MC-101 is a full-featured design. Included are (take a deep breath) two source selectors for "listen" and "record" functions, a tape monitor function, an external processor loop, high-quality Noble volume and balance controls, a mono switch, a line amplifier bypass switch, bass and treble controls (defeatable), a high frequency filter, and a headphone socket. There are inputs provided for a turntable (selection between MM and

MC stages via a switch mounted on the main circuit board), DAT recorder, CD player, VCR, tuner, and tape recorder. (Obviously, any auxiliary source can be connected to the DAT and VCR inputs.) Resistance and capacitance on the phono input can be adjusted by inserting resistors or capacitors in gold-plated sockets on the main circuit board. Moving to the rear of the unit, all inputs and outputs utilize Tiffany RCA jacks. There are two sets of main outputs. For only \$100 extra, the MC-101 is available with balanced outputs. The unit's power switch is in fact an output muting circuit, as the preamplifier is always energized when connected to an AC outlet. The headphone output is only activated when the power switch is turned off.

A rather impressive list of features,

eh? Construction quality is equally noteworthy. Built into an exceptionally sturdy steel case, the MC-101's circuitry is laid out on a single glassfibre board, with an auxiliary board carrying the input/output jacks. Parts quality is extremely high, with all controls and selectors of premium quality. 1% metal film resistors and polypropylene film capacitors are liberally used throughout. The active circuitry is completely discrete, with ICs used only in the servo circuits to control DC offset. The B&K utilizes a remote toroidal transformer, with connection to the preamp via a high-quality Cannon plug. All told, the MC-101 is remarkably well made for the price.

The MC-101 is quite attractive, though a bit bulky when compared to the slimline Forté and PS Audio units.

New silk screening on the front panel makes the MC-101 far more attractive than B&K's other preamps. Both the control knobs and obligatory rack mount handles are black rather than B&K's usual silver, another cosmetic bonus. Overall, a worthwhile improvement over earlier B&K efforts.

I began auditioning with the *Rickie Lee Jones* LP, and was immediately stunned by the B&K's amazing sense of clarity and immediacy. Jones' vocals were smooth and full-bodied (I expected that from a B&K product), but they came across with exceptional presence and intimacy. Willie Weeks' bass guitar intro to "Danny's All-Star Joint" sounded just slightly blurred, but this was hardly a gross failing. The MC-101's low-level detailing and separation of instrumental lines made it especially easy to follow each musician's part, no matter how buried in the mix. Saxes had a marvelous combination of body and bite, and piano came across with fine resonance and impact. Uptempo tracks exhibited fine spirit and pace, though the MC-101 sounded just a touch slow compared to the PS and Forté units.

Shostakovich's *Symphony No. 11* was equally impressive, as the B&K's full-bodied, powerful sound communicated the sheer force and impact of the orchestra to great effect. Strings sounded gorgeous, both resonant and vivid, without a trace of thinness or harshness. Brass came through with their full power and impact intact. In terms of properly conveying the timbres of the orchestra's instruments, the B&K was unquestionably the best of the preamps on test here. The B&K's fine retrieval of recording acoustic made the performances sound particularly vital and immediate. Bass drum and tympani were powerful, if just a bit rounded off in note attack and crispness. Image depth was exceptionally good, but the width of the orchestra seemed slightly compressed.

The Bach *Chaconne* as performed by Michael Newman highlighted the B&K's strengths, with Newman's guitar conveyed with an almost ideal combination of warmth and clarity. Recording acoustic and air were in abundance, and this combined with the B&K's fine note attack and

dynamics to make the sound especially involving and intimate. If the B&K didn't quite match the PS Audio

tastes and requirements.

One thing is certain: the B&K MC-

**Price: \$898**

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**B&K Components, Ltd.**  
**1971 Abbott Road**  
**Lackawanna, NY 14218**  
**(800) 543-5252**

for sheer "reach out and touch" immediacy, it more than made up for it with its warmer, more full-bodied tonal balance.

Lastly, I put on the Doobie Brothers' *Toulouse Street*, and the MC-101 did an outstanding job on this exceptionally clear and crisp recording. "Listen To The Music" came across with fine spirit and energy, though the loping bass guitar line was just slightly smeared. Both electric and acoustic guitars were crisp and sharp, but never at the expense of stridency or hardness. The atmospheric title track was particularly involving, with the B&K's outstanding retrieval of recording acoustic and air adding to the tune's allure.

Quite simply, the MC-101 is a superb preamplifier. I had expected it to offer the traditional B&K virtue of smooth tonal balance, but I was not prepared for its amazing sense of detail and clarity. Through the MC-101, music has a combination of warmth and immediacy that is all but unprecedented in this price range. Only the Superphon Revelation II rivals the B&K in this respect, and it has nowhere near the features and operational flexibility of the MC-101. Of course, at \$699 the Revelation II also costs substantially less. While the B&K does a fine job of conveying the pace and tempo of music, it is not quite up to the standards of the Forté, for example. As always, each listener must decide for himself how each product's unique combination of strengths and weaknesses coincides with his own

101 is without doubt the best full-featured preamplifier I have heard in this price range. As such, it easily qualifies for "Best Buy" status. ■

Preamplifier reviews  
 scheduled for Issue  
 Twelve:

The new Audible  
 Illusions Modulus 2D,  
 Counterpoint  
 SA-1000, Lazarus  
 Cascade Deluxe,  
 MFA Magus 2, and  
 more.



Though not a company familiar to many audiophiles, Belles Research have been in business a number of years. Designer Dave Belles is strongly committed to providing outstanding value for money, and this has gained the low-profile company a loyal following among dealers and music lovers alike. The 150 is Belles' less expensive amplifier (the big bruiser 450 will be reviewed in Issue Twelve), and presents an interesting approach towards offering maximum sound quality for the dollar.

At first glance, the 150 is hardly an impressive piece of gear. Resembling nothing so much as a toaster oven, the Belles is an ungainly little spud, virtually as tall as it is deep. The entire chassis is built of thin aluminum sheet, including the "faceplate". In terms of external fit and finish, the 150 looks distinctly underwhelming next to the Forté Model 3 or the Adcom GFA-555. This is in fact by design, as Dave Belles is more interested in putting the money where it counts, in the amplifier's circuitry.

Indeed, the inside of the Belles is far more striking. All of the amp's circuitry is carried on a single glassfibre board that completely covers the chassis' rear panel. The amp's gold-plated RCA input jacks are mounted directly on the top center of this board. The left and right inputs are routed (via van den Hul silver mono-crystal wire, no less) to their respective, opposite ends of the board, where the input stages reside. Inside of these are the amplifier's outputs, with two thick, internally-mounted heat sinks per channel. Belles goes against current practice to some extent by using bipolar inputs and MOSFET output

transistors (four per channel of the latter). A beefy (500 VA) toroidal transformer is mounted vertically on a large, L-shaped aluminum support located near the front panel. This support also shields the audio circuits from the transformer's hum field. A single rectifier is employed in the power supply, and a total of 9400 microfarads of storage capacitance are provided per channel.

Overall layout of the amplifier's circuitry is remarkably compact and simple. There are clever touches such as using the heavy heat sinks to help shield the low-level input circuits from the high-voltage output stages. Build quality is excellent for the price, with 1% metal film resistors and polypropylene caps in evidence. While the amplifier's aluminum chassis is hardly a model of strength or rigidity, its non-magnetic construction may pay real dividends in sound quality, as there is

Loudspeaker cable termination is handled by five-way binding posts. The Belles 150 is a Class AB design, and is rated at 100 watts per channel into 8 ohms (150 watts into 4 ohms). Claimed peak current capability is in excess of 75(!) amperes.

The 150's obvious strengths lie in the areas of clarity and quickness. Time and again I was surprised by the remarkable sense of openness and detail of the 150's sound. On the Bach Chaconne, Michael Newman's guitar came across with tremendous note attack and dynamics, and this combined with the exceptional retrieval of recording acoustic and ambience to make the performance compelling and immediate. Tonally, Newman's guitar did sound perhaps a trifle thin, and therein lies the Belles' one (relatively minor) weakness — it is just slightly forward sounding. While I certainly wouldn't go so far as to call it

**Price: \$649**

**Contact:**

**Belles Research Corp.**  
1237 East Main Street  
Rochester, NY 14609  
(716) 482-8850

growing evidence to suggest ferrous materials in close proximity to an amplifier's circuitry cause sonic degradation.

bright, it plainly doesn't have the warmth and body of one obvious rival, the B&K ST-140.

The Rickie Lee Jones disc pointed up

another of the Belles' strengths, that of conveying the pace and rhythmic progression of music. Willie Weeks' bass guitar at the beginning of "Danny's All-Star Joint" was extremely crisp and snappy, as indeed were all of the instruments on this track. The 150 excelled in the ability to convey pace and rhythmic progression. This gave the tune a great sense of energy and sass. I did notice that saxophones on this track sounded a touch thin and cold, slightly lacking body and substance. Jones' vocals also came across a bit threadbare, with slightly too much emphasis on her throat and not enough on her chest tones. I again noted a great deal of recording acoustic and air, this adding to the "live" feel of the recording.

The Shostakovich symphonies sounded exceptionally good, as the 150's crisp note attack and dynamics gave the orchestra fine impact and drive. Image depth and width were exceptionally good, and this further enhanced my appreciation of the performance's power and scope. Separation of instrumental lines was impressive, with little congestion or

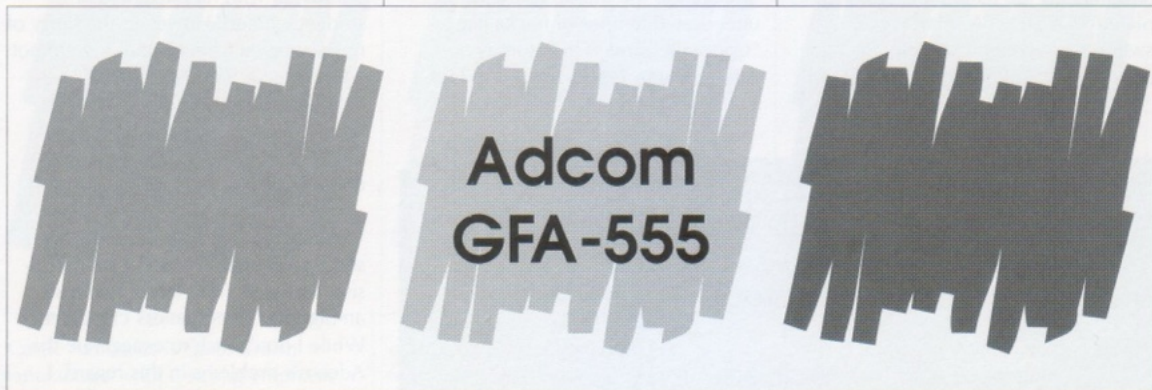
blurring even in climactic passages. I did note a slight tendency towards coolness, with violins lacking a degree of resonance and body. Brass also sounded just a tad threadbare and lean. Overall, the sound was dynamic and exciting, if just slightly lacking in warmth and fullness.

Finally, I put on John Prine's *Bruised Orange*. Prine's vocals sounded a touch thin, with his natural rasp accentuated slightly, though certainly not to such a degree that the performance wasn't convincing. Acoustic guitars came across exceptionally vivid and crisp. Kick drum and bass guitar were extremely tight and well defined — bass response is one of the 150's great strengths. The Belles' outstanding note definition made it easy to appreciate the superb musicianship on this album. The "live" feel of this recording was also served well by the 150's ability to convey recording acoustic and air accurately.

Despite my minor reservations about tonal balance, I consider the Belles a superb amplifier. It has an essential quickness and clarity that make music

sound more immediate, more alive. The Belles is an extremely revealing amplifier, and care should be taken in matching the 150 with other components — for example, it was a poor match for the PS Audio 4.6, with the sound too forward and bright. The B&K and Forté preamps, with their smoother presentations, blended well with the Belles. Avoid aggressive-sounding associated components, and the Belles will dazzle you with its speed and lucidity. I know of no power amp at or below this price that can rival the 150 for sheer "you are there" detail and presence.

At \$649, the 150 offers an interesting alternative to the \$498 B&K ST-140, with the Belles offering immediacy and detail to the B&K's smoothness and warmth. Both amps are excellent buys, and I suspect compatibility with the rest of your system will be the overriding factor in determining which of these two products you prefer. In any event, the Belles offers exceptional value for the money, handily garnering a "Best Buy" rating. ■



Adcom's GFA-555 is perhaps one of the most famous (or infamous) power amplifiers in recent memory. Released to rave reviews in the alternative press, it subsequently became the center of controversy when rumors surfaced that later production units bore little resemblance to the original samples embraced by reviewers. While production of some subassemblies was indeed moved offshore, final assembly and quality control continue to be performed in the United States. Furthermore, I have yet to see any *substantive* proof that Adcom

deliberately degraded the amp's build or sound quality. Circuit changes have been made over the course of time, but this is common practice for any manufacturers dedicated to improving their current products.

In any event, it seems more productive to focus our attention on the merits of the current GFA-555. Rated at 200 watts per channel into 8 ohms (and 325 watts into 4 ohms), the Class AB Adcom is a high-current amplifier designed to operate comfortably into virtually any loudspeaker load.

Claimed output current capability is in excess of 20 amperes. For those in need of greater power, the GFA-555 can be bridged to provide 600 watts per channel into 8 ohms. Adcom include their Instantaneous Distortion Alert circuit, which features two front-panel mounted LEDs that light whenever distortion products (THD, IM, DC offset, etc.) exceed 1%. A worthwhile feature this, given the potential for speaker damage with 200+ watts of power available.

Internal construction of the GFA-555

is quite straightforward. The input circuitry for both channels is contained on a single glassfibre board mounted high on the steel chassis' small rear panel. Occupying the center of the chassis is a large (700 watt) toroidal transformer. Each channel of the amplifier features a separate rectifier and two large power supply capacitors totalling 30,000 microfarads of energy storage. Eight bipolar output transistors per channel are included, mounted on the large, vertically-oriented heat sinks which essentially comprise the back of the chassis. This is obviously an amplifier designed to put out serious power. Construction quality appears to be exceptionally good for the price.

External finish is also impressive, the 555's finned, anodized aluminum faceplate being particularly handsome. Adcom have managed to resist the temptation to make rack-mount handles standard, and the absence of such adolescent affectations make the 555 that much more attractive.

Loudspeaker cable termination is via five-way binding posts, and inputs terminations are handled by gold-plated RCA jacks. A small toggle switch near the inputs allows for selection between stereo and bridged

are slurred, and this robs music of some of its crispness and pace.

On Paul Simon's *Graceland* LP, for example, the bass guitar and kick drum were not well-defined. The track "Boy In The Bubble" illustrated this nicely, as there was some obvious overhang on the opening drum shots. A pervasive heaviness afflicted both the kick drum and bass guitar, with notes lacking snap and crispness. This made the song drag a bit. Indeed, all of the instruments in these performances came across a touch tired and listless. This was particularly evident on the title track. Rhythm guitar lacked crispness and focus, seeming to play slightly out of time with the other musicians. The net effect was to make the music sound a bit directionless and muddled. On the plus side, vocals were exceptionally smooth and clear, with no excessive sibilants on Simon's voice. Low-level detail and recording acoustic were handled well, conveying the vitality and presence of the performance nicely.

Next was the *Rickie Lee Jones* album, and I again noted a lack of focus and direction to the music, as the subtle, understated tempos of tracks like "Coolsville" and "On Saturday Afternoons in 1963" seemed to lack

The Shostakovich symphonies again called attention to the Adcom's problems in communicating the interplay and cohesiveness of the musicians. In the fourth movement of Symphony No. 11, the strings and brass were deficient in attack and impact, sounding slightly lackluster and lethargic. The music thus lost some of its tension and drama. The martial cadence section of this movement lacked push and direction, the urgency of the strings dissipated. Tonally, the Adcom did a nice job, as the violins came through with an appealing combination of body and clarity. Brass were robust and powerful, with good bite and impact. The 555 also excelled in its ability to convey recording acoustic, and this made it easier to appreciate the size and power of the orchestra.

Joe Satriani's *Surfing With The Alien* was a different sort of test, and the Adcom again turned in a mixed performance. Bass guitar and kick drum came across a touch heavy and leaden, slowing down the tempo of the title track somewhat. Satriani's screaming lead guitar was tonally well portrayed, with no harshness or stridency noted. However, the flurry of notes sprayed from his guitar were not well-defined, tending to smear together, their attack and dynamics quashed. Consequently, this track lacked its usual rhythmic punch and drive, sounding a bit tentative.

Obviously, I feel the Adcom has some problems. The 555's unimpressive note definition lends music an ambiguous, directionless character. While I don't wish to exaggerate the Adcom's problems in this regard, I must say I found them quite disconcerting. In a number of other areas, the 555 does a fine job. Tonal balance, retrieval of detail and recording acoustic, and dynamic power were all quite impressive. To be sure, the Adcom has received extremely positive reviews throughout the audio world. Indeed, in many "hi-fi" respects the 555 is outstanding, but when it comes to communicating the meaning and emotion of music, I believe it has significant flaws. Though I wasn't convinced by the GFA-555, I would certainly encourage you to listen and judge for yourselves. ■

mono operation.

In a number of respects, the 555 turned in an impressive performance. Immediately obvious were the Adcom's fine tonal balance and sense of clarity and openness. Unfortunately, the 555 has some serious problems in terms of note attack and definition. The beginnings and endings of notes

impetus and energy. Consequently these tunes seemed to wander a bit, with their melodic and rhythmic progression ambiguous. Jones' vocals were gratifying full-bodied and clear, but sounded somewhat out of synch with the rest of the band. Recording acoustic and air were conveyed well, and this gave the tunes greater immediacy and vitality.



**Price: \$750**

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**East Brunswick, NJ 08816**  
**(201) 390-1130**





## Forté Model 3

Forté manufacture two power amplifiers, identical in appearance and price, but differing in output bias configuration. The Model 1a is a class A device rated at 50 watts per channel into 8 ohms (80 watts into 4 ohms), while the Model 3 on test here is a class AB unit that puts out 200 watts into 8 ohms (350 watts into 4 ohms). Both feature the gorgeous, Levinsonian styling that makes them stand apart from their like-priced rivals.

As is becoming increasingly common, the Model 3 employs an FET input stage in concert with a bipolar output stage. The latter utilizes no less than ten 200 watt output transistors per channel, each transistor operated at only 10% of rated capacity. Forté characterize the Model 3 as a high-bias class AB design, their goal being to provide many of the benefits of pure class A operation without the penalty of great heat dissipation endemic to class A amplifiers.

Centrally located within the Forté's steel chassis is a massive toroidal power transformer. Each channel's power supply includes its own rectifier and a whopping 48,000 microfarads of storage capacitance. As such, it should come as no surprise to learn that maximum output current capability is rated at a generous 30 amperes. A single glassfibre circuit board per channel carries both the input and output stages. The power output transistors are fastened to massive heat sinks on the sides of the amplifier. Overall construction quality is extremely impressive, with the Model 3 looking distinctly overbuilt for its intended use.

Styling and finish of the Forté are, as

mentioned earlier, stunningly good. The brushed aluminum faceplate looks rich and elegant, with the tasteful silk screening adding to its allure. The inevitable rack-mount handles are present, though they are simple bent-aluminum straps and thus relatively innocuous. The amplifier's heat sinks are handsomely finished, and I was pleased to note Forté radius their edges (as well as the corners of the faceplate) to make them less hazardous to young children. Far too many manufacturers seem oblivious to the fact that audio equipment must blend inobtrusively into the domestic living environment. Equipment that, by faulty electrical or mechanical design, poses a threat to humans or pets is simply unacceptable.

Five-way binding posts handle loudspeaker cable termination, while quality gold-plated RCA jacks are provided for input signal termination.

Right from the start, I was captivated by the Model 3. In many respects

with its sense of power and control. The 3 never seemed to breath hard, no matter how demanding the source material or speaker load. Bass impact and definition were superb, with Ziggy Marley and the Melody Makers' *Conscious Party* coming across with exceptional body and power. The kick drum and bass guitar on this reggae album never sounded boomy or indistinct. Synthesizers were crisp and vivid, if lacking a slight degree of presence. Marley's vocals sounded warm and clear, though there was some dimunition of recording acoustic, making him sound just a bit distant. The Forté's outstanding note attack and dynamics helped convey the rhythmic push and progression of these tracks particularly well.

*Rickie Lee Jones* was also impressive through the Forté, with Jones' vocals displaying fine body and resonance, if sounding a bit laid back. The lack of recording acoustic on this album made the musicians sound a bit remote and removed from the listener, though this

Price: \$1100

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identical in sound to its companion preamp, the Forté impressed me most

was not a grievous failing. Indeed, the Forté's ability to communicate subtle

instrumental and vocal touches helped make the performances sound more emotive and involving. Thus, while the overall sonic perspective was a bit distant compared to that of an amp like the Belles 150, the Model 3 managed to communicate the energy and impact of the recording convincingly.

Shostakovich's Symphony No. 11 helped show off the Forté's powerful, precise delivery. The orchestra came through with great impact and dynamics, the 3 never sounding strained or harsh. Strings were especially vivid and resonant, while

brass displayed outstanding body and power. While there was again a relative lack of recording acoustic and ambience, the sound was still involving and exciting. The martial cadence section of the fourth movement came across with fine tension and drama, the Forté's excellent note attack and crispness coming into play here.

It's the Forté's ability to capture the power and nuance of musical performance that makes it so attractive. Despite its relative lack of presence and immediacy, the 3 is able to make music come alive by

convincingly communicating note attacks and dynamics. Instruments sound more real, more alive because it's easier to hear the individual character and signature of the musical lines. And remember, the Forté's smooth tonal balance makes it compatible with a wide range of equipment. All told, while the 3 isn't the last word in detail and immediacy, it provides a consistently listenable and involving sound that is faithful to the music. Those seeking "in your face" detail should look elsewhere, but for many the Forté's smooth, powerful presentation will fit the bill perfectly. ■

Quite an assortment of budget models this time around, ranging from the diminutive Celestion 3 to the substantial Precise Monitor 5. The clear stand-out of all the models tested

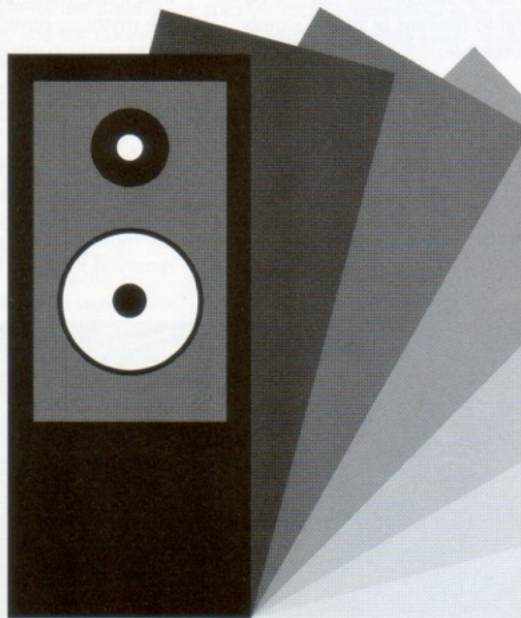
was the Celestion 3, as it turned in a stunningly good performance for the price.

Also impressive was the Rogers LS2a, with its smooth, full-bodied sound.

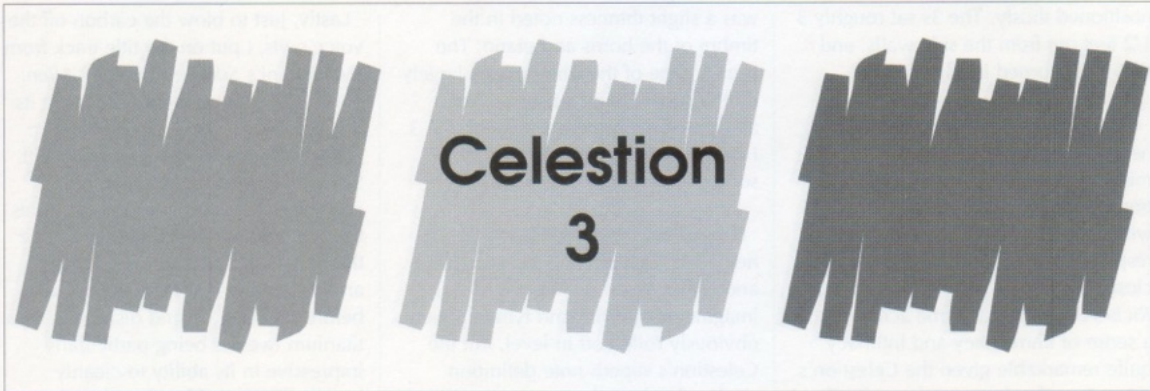
The addition of an aluminum tweeter gives the new 2a an even sweeter, more listenable character than the earlier 2. The Rogers LS4a, Linn Index PLUS, Castle Warwick, and Celef Altus all turned in solid performances, though their individual sonic signatures vary markedly. Alas, the Precise Monitor 5 was quite a disappointment, being handily outperformed by the much smaller (and less expensive) Celestion.

Reviews scheduled for future issues include revised versions of the Epos ES14 and Linn Nexus, the Acoustic Energy AE1, a number of models from Monitor Audio, the Royd Eden, and others. Issue Twelve will include a look at very expensive compact speakers, including the Celestion SL700, ProAc Response Two, and the Rogers LS5/9.

# SPEAKERS



# CORNER ▶



With the success of budget minispeakers like the Wharfedale Diamond, Goodmans Maxim 2, and Mordaunt-Short MS10 II, it was perhaps inevitable that Celestion would eventually throw their hat into the mini ring. The chapeau in question is the Celestion 3, a remarkably sophisticated product for this price range. Significantly, it is not a member of Celestion's affordable DL line, but rather stands alone as an innovative, aggressive entry into a highly competitive market segment.

Unlike its major rivals noted above, which are all ported units, the 3 is a sealed box design (measuring a tidy 12" H x 7.25" W x 8" D). Given the modest internal volume of the average mini, most designers choose ported cabinets to maximize sensitivity and bass extension. Celestion have instead opted to focus on bass quality, and feel a sealed cabinet offers greater transient response and note attack than a comparable bass reflex design.

A two-way speaker, the 3 carries a 5" felted fiber bass/midrange in concert with a 1" dome tweeter. Both drivers feature unusual construction techniques. The bass/midrange's chassis is a one piece polycarbonate molding. In effect, Celestion have achieved many of the benefits of a metal casting (exceptional rigidity, simplified assembly) in a low-cost plastic molding. I was initially sceptical that Celestion could achieve adequate rigidity using polycarbonate, but when I disassembled the 3 and examined the bass/midrange, I was amazed at the stiffness of the basket. After considerable pushing and pulling on the magnet structure, I was unable to detect any obvious flex. Very

impressive. The magnet itself is a good-sized piece for a budget minispeaker.

The 3's tweeter boasts a titanium dome, utterly unknown at this price point. Virtually the same unit fitted to Celestion's more expensive DL series, it offers extremely low mass and excellent rigidity. Titanium is an attractive tweeter material — it possesses a higher stiffness-to-mass ratio than aluminum, as well as greater fatigue strength. A ribbed plastic cover is fitted to the tweeter to protect the dome from damage.

Both drivers are connected to the crossover by thin multi-stand wire, which is terminated with slip-on connectors. The crossover components are hard-wired on the loudspeaker terminal block, and are of good quality for this price range. The cabinet's internal volume is damped by a modicum of fiberfill wadding.

The enclosure is built entirely of 12mm particleboard. Both bass/midrange and tweeter feature broad, ribbed faceplates a la the SL series (another benefit of the polycarbonate molding process), which allow solid fixing of the drivers to the baffle via allen-head wood screws. I must say I find the latter a bit annoying, in that they simulate the *look* (but not function) of technically superior machine bolts and T nuts. Loudspeaker cable termination is by five-way binding posts.

The cabinet is available finished in either walnut or black ash vinyl veneers. Fit and finish are extremely impressive for a \$250 loudspeaker. Covered in black cloth, the grille

frame is an open-frame plastic molding, designed to minimize diffraction. Its sides are slightly bevelled to match the mild taper of the cabinet's front edges. Very attractive. In addition, the baffle includes visually inobtrusive rubber-lined slots for the grille's mounting tabs, adding to the 3's cosmetic appeal when used *sans* grille.

Rated sensitivity is a moderate 86dB/1 watt/1 meter, and nominal impedance is 8 ohms.

Celestion supplied their LS24 stands for use in auditioning the 3. Steel top and bottom plates are connected by a single extruded aluminum column, which is designed to be filled with a combination of lead shot and sand. A recessed channel in the back of the column allows the speaker cable to be hidden. The bottom plate features easily-adjusted spiked feet. As you may have surmised from the stand's model designation, the LS24 is 24" high. All told, an excellent, if expensive (\$190), stand for use with a wide variety of minispeakers.

Designed for use near the listening room's back wall, or sited on a bookshelf, the 3 benefits from the bass reinforcement such positioning affords without suffering the usual consequence of boomy, muddy definition often suffered by ported loudspeakers. I experimented with various sitings, ultimately choosing to place the 3s about 2 1/2 feet out from the back wall. This provided a greater sense of depth while still offering good bass power and definition. As noted, bass power does increase with near-wall siting, but I did detect just a slight loss of definition and crispness when

positioned thusly. The 3s sat roughly 3 1/2 feet out from the side walls, and they were turned in slightly.

Quite simply, the Celestion 3 sets new standards for the budget minispeaker class. Combining tremendous note attack and dynamics with surprisingly deep and crisp bass response, the 3 brings the listener closer to the musical performance. The *Rickie Lee Jones* LP came across with a sense of immediacy and intimacy quite remarkable given the Celestion's price. Jones' voice was clear, detailed and alive, though lacking a degree of warmth. Double bass, bass guitar, and drums all were exceptionally crisp and

was a slight thinness noted in the timbre of the horns and piano. The significance of this will depend largely on the sonic characteristics of the associated equipment used with the 3. I did not find it particularly troublesome.

Shostakovich's Symphony No. 11 helped to highlight the 3's strengths and weaknesses. As one might imagine, bass drum and tympani were obviously rolled off in level, but the Celestion's superb note definition made what bass there was compelling. Horns had great attack and crispness, if sounding a tad harsh. Strings sounded vivid and sharp, and were not

Lastly, just to blow the carbon off the voice coils, I put on the title track from Joe Satriani's *Surfing With The Alien*. This cut is truly wretched excess at its finest, with Satriani's Ibanez electric guitar laid over a bone-crunching riff. Screaming, soaring one moment, pouring out a torrent of staccato notes the next, Satriani's pyrotechnics gave the Celestion a real workout. I was amazed at how loud the little 3 went before breaking up and distorting, the titanium tweeter being particularly impressive in its ability to cleanly handle Satriani's blazing solos. Bass performance was also stunning, with far more power and punch than most minispeakers. Yes, there again was some brightness, but it was not harsh or sizzly in nature.



**Price: \$250**

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As I stated earlier, the Celestion 3 is the new champ of the budget mini class. It has the same crisp note attack and liveliness of the excellent Mordaunt-Short MS10, but is slightly smoother sounding and has more powerful bass. It is quicker and more vital sounding than the Goodmans Maxim 2, and its bass definition and crispness are clearly better. At \$250, the 3 strikes me as a tremendous bargain. Partner it with a Revolver Rebel turntable (\$389) and an Arcam Alpha II integrated amplifier (\$350), and you'll have an amazingly musical system for about \$1000. The little Celestion is a clear winner, and easily qualifies for "Best Buy" status. ■

powerful, being easy to follow regardless of how dense the mix became. On up-tempo tracks like "Danny's All-Star Joint", the Celestion did a marvelous job of conveying the energy and pace of the band. The performances on this LP were particularly involving and compelling, as the Celestion excelled in its ability to deliver low-level detail and recording ambience. I did note a slight tendency to emphasize surface noise.

Next up was the Miles Davis recording *Kind of Blue*, and here the Celestion was particularly strong in its ability to convey the push and progression of the music. Double bass was exceptionally clear and tight, and quite powerful given the 3's minute proportions. Saxes and trumpet sounded lively and immediate, with note shapings and nuances gratifyingly clear. The performances made more sense from a musical point of view, by virtue of the Celestion's ability to go beyond the *sound* of the performance and convey its *spirit*. To be sure, there

drowned out in orchestral climaxes, the 3 doing a nice job of keeping instrumental lines distinct. The soundstage was exceptionally good, depth being rather more abundant than width, and the height of the orchestra was particularly well portrayed. Again I heard evidence of the Celestion's superb sense of pace and rhythmic progression, as the martial cadence section of the fourth movement came across with marvelous tension and impact.

I also tried the Doobie Brothers' *Toulouse Street*, and the 3 again impressed with its razor-sharp note attack and clarity. Tracks like "Rockin' Down the Highway" and "Jesus Is Just Alright" had great drive and energy, while a quieter tune like the title track was mesmerizing in its subtlety and grace. Tom Johnston's vocals did sound a trifle thin, but not objectionably so. Acoustic guitars were also slightly lacking in warmth and body, though not to the extent of being strident or relentless



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## Precise Monitor 5

Designer labels are powerful marketing tools, and Precise Acoustic Laboratories can lay claim to one of the most famous names in specialist audio, that of renowned engineer Keith Johnson. Best known for his work with the audiophile record label Reference Recordings, Johnson has also served as a consultant for a number of specialist audio manufacturers, as well as contributing seminal R&D work in the areas of magnetic and optical storage media.

Precise Acoustics are in fact a wholly-owned subsidiary of Onkyo, but enjoy complete autonomy in all areas of design, manufacture, and marketing. Given that Precise see themselves as a "high end" loudspeaker company, it was no doubt deemed prudent to distance themselves from the mass-market associations invoked by the name "Onkyo", hence the newly-formed "Precise Acoustic Laboratories".

Johnson is the principal designer of all five Precise models, ranging from the diminutive Monitor 3 (\$299) to the imposing Monitor 10 (\$1599). He designed each model's drivers, which are then built to his specifications by Onkyo. Cabinet construction and final assembly take place in Ohio.

The Monitor 5 is a largish (21" H x 10.25" W x 12" D) two-way ported speaker, with an 8" bass/midrange in concert with a 1" soft dome tweeter. Built on a stamped steel chassis, the bass/midrange driver features a long fiber pulp cone (with damping material applied) terminated by a polyurethane surround, and a voice coil former made of heat-resistant polyamide resin. Both the voice coil

and magnet look a bit skimpy for a driver this size. The tweeter is a treated fabric dome, with a substantial magnet assembly. Its pole piece is vented and damped.

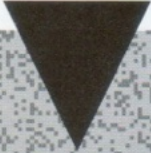
The cabinet's front baffle is built of 18mm MDF, while the rest of the enclosure is constructed of 15mm particleboard. The Monitor's port is located high on the rear panel. In an effort to isolate the cabinet walls from vibration emanating from the bass/midrange driver's chassis, Precise glue and screw the baffle to particleboard strips which in turn are glued to the cabinet walls, with a slight standoff to prevent direct contact between the baffle and cabinet. This is an interesting arrangement, but ultimately misguided, in that far more vibration reaches the cabinet walls via the acoustic output generated by the rearward movement of the driver's cone.

The interior of the cabinet is damped

to the crossover, and slip-on connectors are used throughout. The crossover components were of reasonable quality, and mounted on a PC board. Loudspeaker cable termination is by miserable little spring-loaded clips.

The baffle's edges are radiused (one of the benefits of using MDF rather than particleboard, which can't be accurately machined) to reduce diffraction. Both drivers are mounted flush on the baffle via wood screws, with the tweeter surrounded by a felt pad to damp early reflections from the baffle's surface. In addition, both drivers are gasketed to ensure an airtight seal to the baffle.

The Monitor 5's grille is a molded plastic piece covered with black stretch cloth, its attachment plugs fitting into soft rubber inserts on the baffle. This is a clever scheme, as it prevents the grille from buzzing or rattling in its mounting holes.



Price: \$360

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by fiberfill sheets, which appeared to be rather haphazardly arranged. Thin multi-strand cable connects the drivers

Unfortunately, the grille frame itself presents sharp edges in the vicinity of the drivers, and is thus quite diffrac-

tive. All auditioning took place with the grilles removed.

An oak vinyl veneer covers the Monitor 5's cabinet (save for the rear panel, which is painted black), and it is not particularly impressive. The photo transfer of the woodgrain pattern to the vinyl is a bit fuzzy, and the quality of the vinyl itself is also mediocre. The edges of the cabinet had rough spots where the vinyl had not been trimmed cleanly. Not gross failings by any means, but there are numerous other models in this price range (e.g., Rogers LS2a, JPW AP2, etc.) that display decidedly better fit and finish. Indeed, overall construction quality of the Monitor 5 was acceptable, but hardly the best in its class.

Rated sensitivity is 90dB/1 watt/1 meter, and the Monitor 5's nominal impedance is 6 ohms.

Precise recommend mounting the Monitor 5s on stands 27"-32" high, unusually tall given the Monitor's 21" height. I tried the Precises on Linn Kan II (24") and Celestion SL24 (24") stands, but this put the tweeter well above ear height, leading to rather dull

sound. I eventually settled on the Epos (20") stands as offering the best performance. Near wall siting resulted in obviously boomy bass performance. After some trial and error, I arrived at a position roughly 4 feet from the rear wall, and 3 feet from the side walls, with the speakers turned in slightly.

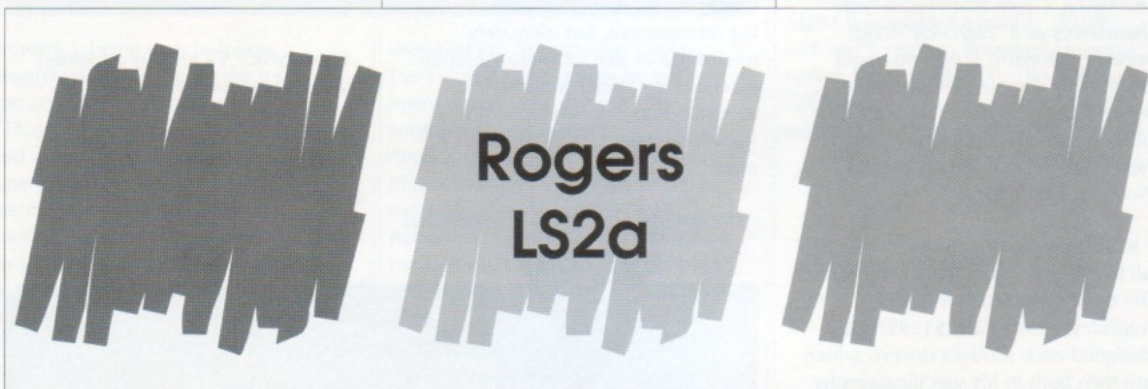
Frankly, this loudspeaker turned out to be quite a disappointment. I had hoped the combination of Johnson's talent and Onkyo's money would produce exciting results, but the Monitor 5 is a distinctly mediocre product.

The track "Higher Love" from Steve Winwood's *Back In The High Life* LP is a good test of transient quickness and note attack, as well as bass definition. Unfortunately, the Precise failed on all counts. The opening percussion shots were woefully slow and rounded off, lacking snap and impact. The bass synth was thick and indistinct, it being difficult to discern the pitch of individual notes. Winwood's vocals were quite smooth, there being no tendency towards harshness or stridency noted. Alas, neither was there much in the way of low-level detail or recording acoustic,

the performance sounding somewhat distant and remote as a result.

Rickie Lee Jones sounded rather laid back and lethargic, the presence and emotion of her vocals diminished by the Monitor's lack of detail and crispness. "Danny's All-Star Joint" came across somewhat listless, the opening bass guitar riff devoid of sass or spirit. I also noted a tendency for musical lines to smear together, it being difficult to follow background instruments. Similar problems were observed on the Shostakovich symphonies, with the orchestra sounding a bit muddled and confused.

There's really not much point in going on. The Monitor 5's problem is simply an inability to convey the spirit and emotion of music. Note attacks and dynamics are diminished, robbing performances of their impact and life. Bass response lacked definition and snap, lending a leaden quality to kick drum and bass guitar. Harsh words, to be sure, but the fact remains the Monitor 5 was easily outperformed by the \$250 Celestion 3. As such, it should be obvious that no recommendation of the Monitor 5 is possible. ■



Rogers first ventured into the metal-dome tweeter waters with their excellent Studio 1a, which features an aluminum unit built by Celestion. Designer Richard Ross turned next to the less-costly LS7, replacing its soft-dome tweeter with a titanium model manufactured by MB Electronics (basically the same piece used in the marvelous ProAc Studio 1). The MB tweeter is a far more explicit and lively-sounding device than Celestion's aluminum dome, and it speaks well of Ross' engineering

talents that he was able to elicit highly musical performance from two such disparate drivers.

Ross gained considerable insight into metal-dome technology while working on the above projects, and his knowledge and experience have now been applied to the remaining models in Rogers' LS line (save for the LS3/5a and LS5/9, whose designs are mandated by the BBC). Aluminum dome tweeters have been fitted to the existing LS2 and LS6 (which now sport

"a" suffixes), as well as to the new LS4a (see review this issue). All three speakers utilize the same SEAS tweeter, a 1" unit with a nitrile rubber surround. A vented pole piece increases sensitivity and enhances heat dissipation, while ferrofluid cools and damps the voice coil. The dome is protected from inquisitive fingers by a stiff wire mesh grille. This tweeter appears to be essentially the same model employed by the superb Thiel CS1.2 (reviewed in Issue Ten).

The LS2a is a compact loudspeaker, measuring a mere 14" H x 9" W x 8.2" D. A two-way, ported design, the LS2a partners its SEAS tweeter with a Rogers-built 5" bass/midrange driver. The latter carries a polypropylene cone terminated by a butyl rubber surround, and is built on a sturdy stamped-steel basket. The driver's magnet is exceptionally large for a speaker in this price range. The crossover components are of good quality, and are mounted on a glassfibre circuit board which in turn is fastened directly to the cabinet's rear panel. Loudspeaker cable termination is via five-way binding posts.

The cabinet's front baffle is built of 18mm MDF (medium density fibreboard), while the rest of the enclosure makes do with 15mm particleboard. The speaker's port is mounted low and offset to one side on the baffle, and is radiused to reduce air turbulence. Sheets of thick acoustic foam damp the cabinet's interior. Both drivers are fastened to the baffle with wood screws, an acceptable compromise given MDF's resistance to crumbling. While T nuts and machine screws are preferable mounting hardware, they are seldom found in this price range. The bass/midrange driver is rebated into the baffle, while the tweeter sits on the baffle's surface. Its edges bevelled to reduce diffraction, the grille frame is made of masonite, and covered with textured black cloth.

In an effort to keep the LS2a's price down, Rogers have abandoned their traditional wood finishes, with black ash vinyl veneer the only finish offered. Textured black vinyl covers the front baffle, while the rear panel is painted black. Fit and finish are superb for such a modestly-priced product.

The LS2a's nominal impedance is 8 ohms, and rated sensitivity is 87dB/1 watt/1 meter.

Rogers recommend the LS2a be mounted on stands approximately 24" high. I tried both the Linn Kan II (22" high) and Celestion SL24 (24" high) stands, finally settling on the Celestion units. The LS2a is designed to be used with its grille in place, and was auditioned as such. I tried positioning the LS2a near the back wall, but this

resulted in obvious degradation of bass definition and attack. After some experimentation, final siting was approximately 2 1/2 feet from the back wall, and roughly 3 feet from the side walls, with the speakers turned in to face the listening position. I found this

the Rogers tended to undercut the music's sense of pace and drive somewhat. Similar results were obtained with the *Rickie Lee Jones LP*, as Jones' vocals were completely free of thinness or stridency, but this was accompanied by a diminution of

Price: \$399

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positioning aided depth reproduction, as well as minimizing the LS2a's tendency towards bass heaviness.

As soon as auditioning began, I was struck by the superb tonal balance of the LS2a. Henryk Szeryng's performance of Bach's *6 Sonatas and Partitas for Solo Violin* was remarkable in its sense of body and clarity. All too many budget speakers render Szeryng's violin thin and piercing, but here the natural timbre of the instrument was beautifully preserved. Michael Newman's performance of the Bach Chaconne was equally well served by the little Rogers, the body and resonance of his guitar obviously apparent. Note attack and dynamics on these two performances were also impressive, though there was some slight slurring on rapidly-played runs. Recording acoustic was also slightly impaired.

I next pulled out the *Carol Kidd LP*, and the LS2a continued to impress, as Kidd's vocals came across with warmth and body, though not at the obvious expense of clarity or immediacy. That said, the LS2a does sound a tad distant compared to upfront, punchy speakers like the Celestion 3 or the Royd Coniston R. I also noted a tendency for the Rogers to round off note attacks slightly, and this was particularly obvious on snappy, energetic tracks like "Yes, I Know When I've Had It". In such instances

crispness and rhythmic progression on songs like "Danny's All-Star Joint" and "Chuck E.'s in Love".

The LS2a's warmth and body paid great dividends on the Shostakovich symphonies, as violins came through with a marvelous sense of body and resonance, without a hint of harshness or stridency. Horns had great power and bite, with a feeling of substance and body that helped underscore the orchestra's impact. On the down side, individual instrumental lines were not quite as easy to follow as through the Celestion, for example, it being more difficult to follow background violin parts in the face of powerful brass passages. Dynamic impact of the orchestra was outstanding, due in large part to the full-bodied tonal balance of the LS2a. The Rogers also did a nice job of capturing the width and depth of the orchestra, depth being particularly good.

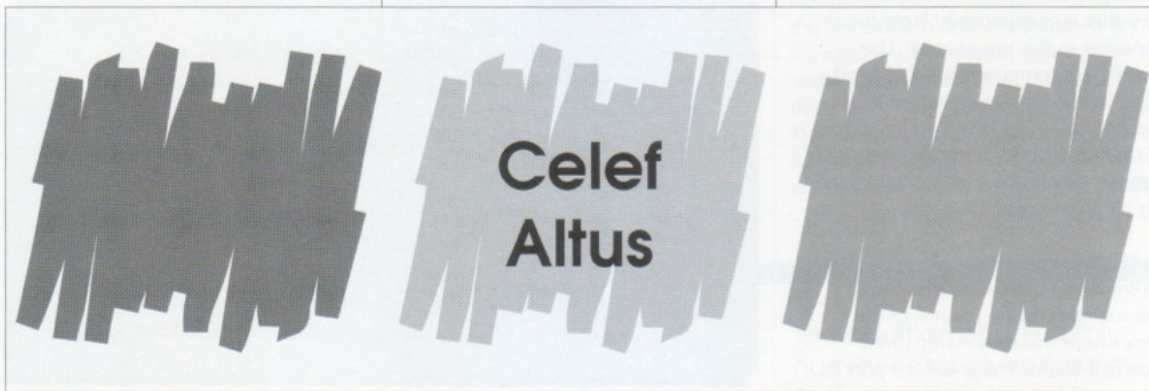
Ultimately, it is the LS2a's ability to convincingly reproduce the correct timbre of instruments that makes it so compelling. For example, many budget speakers simply can't convey the sheer power and body of a trombone, rendering it a bit pinched and harsh sounding. The Rogers does a marvelous job of imparting a sense of fullness and body to both instruments and voices. Unfortunately, the LS2a lacks some of the quickness and note attack of other budget minis, such

as the Celestion and Royd. Consequently, the Rogers tends to undercut the energy and immediacy of performances slightly. Bass definition is particularly smeared compared to a speaker like the Celestion, and this makes punchy rock tracks sound a trifle sluggish. I find this quite

disappointing, but others may consider it only a minor flaw.

In the end, though, the Rogers triumphs because of its timbral accuracy. The addition of an aluminum tweeter seems to have smoothed out the high frequencies compared to

the old LS2, and this makes the new LS2a even more listenable than before. At its price, the Rogers stands alone in its ability to reproduce the tonal richness of music, and thus merits a "Best Buy" rating. ■



Celef is the parent company of ProAc, well known to many as the manufacturer of the superb Studio 1 loudspeaker. Celef speakers are designed by ProAc's Stewart Tyler, and are intended to offer a generous portion of the "ProAc sound", but at more moderate prices. The current Celef line consists of three models: the \$450 Altus reviewed here, the slightly larger Nimbus (\$550), and the floor-standing Stratus (\$950). All three are two-way designs, with the latter two utilizing ported enclosures.

At 15" H x 8" W x 9.5" D, the little Altus is the spitting image of the Studio 1. As the entire ProAc line (as well as the rest of the Celef line) offers only ported loudspeakers, it was quite a surprise to find the Altus is a sealed box design. It carries a 6" bass/midrange driver and a 1" soft dome tweeter, both manufactured by Peerless. The bass/midrange features a polypropylene cone terminated by a treated foam surround. The driver's basket is built from stamped steel, and holds a good-sized magnet. Heavy multi-stand wire connects both drivers to the crossover, and all connections are soldered, a nice touch. Crossover components are of good quality, and are mounted on a circuit board fastened directly to the enclosure's rear panel.

The cabinet is built entirely of 18mm particleboard, and its interior is

damped by thick acoustic foam pads. Machine screws and T nuts fasten the bass/midrange driver to the front baffle, while wood screws hold the tweeter in place. A folded lip on the bass/midrange's mounting flange enhances the driver's cosmetic appeal, but weakens the mechanical bond between driver and cabinet. Loudspeaker cable termination is by gold-plated Michell binding posts, quite nice.

The Altus is available in one finish only, an attractive black ash vinyl veneer that covers all faces of the cabinet, including the front baffle and rear panel. The grille frame is a heavy particleboard affair, with bevelled edges near the tweeter to reduce diffraction (all auditioning took place with the grille removed). Black stretch cloth covers the frame. Overall fit and

finish are well above average for this price range.

Given its modest size and sealed box design, the Altus boasts a highish sensitivity rating of 90dB/1 watt/1 meter. Nominal impedance is 8 ohms.

The Celefs were auditioned on Linn Kan II stands (22" high), and sited well out into the room. Near-wall positioning increased bass power nicely, but I preferred the greater sense of depth afforded by placement about 3 feet out from the back wall.

Shostakovich's Symphony No. 11 quickly brought the Altus' sonic character into sharp focus. The violins were crisp and vivid, it being easy to appreciate subtle note shapings and inflections. This made the music sound more human and emotive, less

**Price: \$450**

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(301) 486-5975**

mechanical. That said, strings sounded slightly thin and hard, lacking a degree of resonance and body. A similar problem was noted on brass instruments, as trombones came through with fine bite and attack, but sounding a trifle harsh. Bass drum and tympani were solid and well defined, with fine power for such a small speaker.

Despite my minor reservations about the Altus' tonal balance, I still found it great fun to listen to, as it communicated the essential spirit of the music nicely indeed. Following instrumental lines was quite easy, and this made the music easier to absorb and enjoy. The martial cadence passage in the fourth movement was taut and compelling, the Celef doing a far better job of communicating the grim tension of this passage than the Precise Monitor 5. The Celef also did a good job in portraying the image of the orchestra, as both depth and width were well above average. I did notice a diminution of the recording acoustic and ambience, and this tend to make

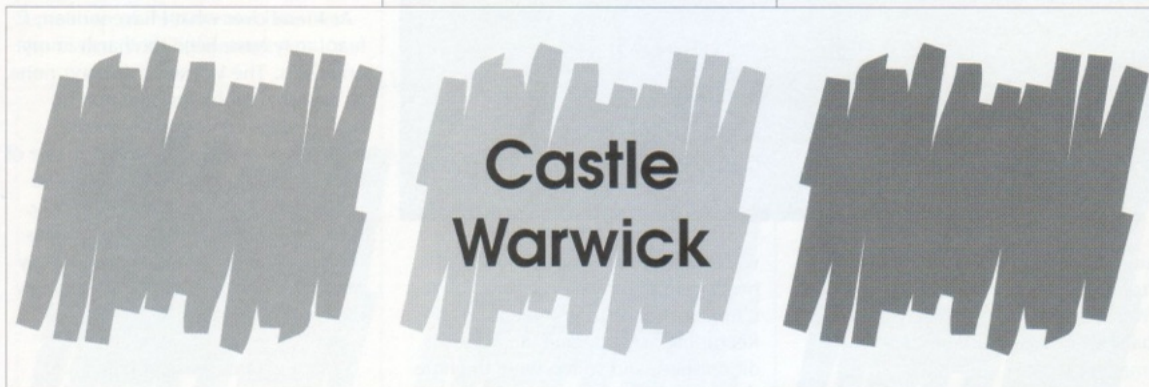
the performance sound slightly remote and flat.

The Altus' relatively forward character was apparent on female vocals, as both Carol Kidd and Rickie Lee Jones took on a slightly hard, cold character. As before, I could "listen around" this and enjoy the vitality and energy of the performances themselves, as the Altus again impressed with its ability to convey the emotion of the performance. Uptempo tracks like Kidd's "Yes, I Know When I've Had It" and Jones' "Danny's All-Star Joint" had the requisite sense of pace and spunk. The Celef again lost some of the recording acoustic, and Jones thus didn't sound quite as immediate and "live" as she should have.

Michael Newman's acoustic guitar sounded a just a tad threadbare, with the resonance of the instrument slightly diminished. Nevertheless the performance as still engrossing, with note shapings and textures especially easy to appreciate. For an interesting

contrast, I then put on Joe Satriani's *Surfing With The Alien*. While Satriani's electric guitar did come across as a bit aggressive, the Altus was fun by virtue of its ability to "keep up" with Joe's frenzied guitar breaks. Bass power and impact were also quite impressive, giving the title track fine pace and drive.

Ultimately, the Altus turns in a solid performance. While admittedly a little rough around the edges tonally, judicious partnering of associated equipment could ameliorate the Altus' forward character significantly. Not surprisingly, it's not an ideal match for the many budget CD players that exhibit harsh, strident tendencies. The Celef's bread and butter is its ability to convincingly portray note attacks and dynamics. Music sounds more compelling and credible because the subtleties and note shapings of each player are not blurred or muddled. While not a world beater, the Altus offers honest value for money, and is certainly worth a look. ■



Castle Acoustics is small British manufacturer with a strong emphasis on quality, to the extent that they are among the very few specialist loudspeaker companies in the world to design and build their own drivers and cabinets. Castle offer a full line of models, ranging from the LS3/5a-sized Trent to the substantial Conway III.

Castle's latest model, the Warwick, is a moderately-sized (18.5" H x 9.75" W x 9" D) ported unit carrying a 5" bass/midrange driver and a 1.25" soft dome tweeter. Sporting a damped paper cone terminated by a butyl rubber surround, the bass/midrange is built on a stamped steel chassis, and carries a good-sized magnet. The tweeter

employs a plastic dome, and is ferrofluid cooled and damped. A mesh grille over the dome offers protection against probing fingers. Connections at the drivers are soldered, while slip-on connectors are used at the crossover. Thin multi-strand wire is used throughout.

Castle include their Castek overload protection system, which I gather is a positive temperature-coefficient resistor in series with the drivers, its resistance rising with temperature and thus limiting the power reaching the drivers (essentially the same type of system as used by Mordaunt-Short in their Positec design)

The Warwick's cabinet features an 18mm MDF baffle, with 18mm particleboard used for the rest of the enclosure. Internally, foam sheets and open-celled plastic sheets are used for damping. A particleboard brace reinforces the walls about halfway up the cabinet. The bass/midrange is mounted flush on the baffle, and is bolted to same with hefty machine screws and T nuts, while the tweeter sits on the baffle's surface and is fastened down with wood screws. The speaker's port sits directly below the bass/mid driver. Speaker cable termination is by five-way binding posts.

As with all of Castle's models, the

Warwick is finished in real wood veneer, and it is beautiful. Covering every surface on the cabinet, the walnut veneer on my review samples was gorgeous. Black ash and mahogany finishes are also available. The grille frame is particleboard, bevelled to reduce diffraction, and covered with black cloth. I found the sound preferable without the grille, and the beautifully veneered baffle made this visually preferable as well.

Rated sensitivity is 89 dB/1 watt/1 meter, and nominal impedance is 8 ohms.

The Warwicks were mounted on 18" high Sound Organisation ZO27 Mid-Stands (\$85, see Linn Index Plus review for further details). I found

with a sense of intimacy and detail that is quite remarkable — one can almost “see” Jones standing in the room. The Spica TC-50 is superb in this regard, allowing the listener to be easily *drawn into* the music. By contrast, the Castle neatly laid out the performers before the listener, but there was never any sense of the musicians and listener occupying the same space. Jones’ vocals were warm and resonant, but lacked that element of excitement and electricity that make this album so interesting. Backing instruments were reasonably crisp and well-defined, it being quite easy to follow instrumental lines. Uptempo tracks had nice pace and drive (with just a slight bit of blurring on the bass guitar intro to “Danny’s All-Star Joint”), and more subdued cuts were handled

somewhat flat and distant. Image depth was very good, and width, while less impressive, was still reasonable.

John Coltrane’s *Giant Steps* was next, and on the title track I noticed Paul Chambers’ double bass was slightly blurred, which undermined the tune’s energy and progression. Tonally, Coltrane’s sax was gratifying warm and full, but it lacked presence and impact, never really seeming to cut through the air to the listener.

Michael Newman’s performance of the Bach Chaconne yielded similar results. Newman’s acoustic guitar came across with marvelous tonal warmth and body. Note attacks and dynamics were reasonably good, with no gross slurring of notes, but there was a pervasive lack of clarity and low-level detail that made the performance seem a bit flat. There wasn’t much in the way of recording acoustic evident, and this further undermined the performance’s immediacy and intimacy.

As I read over what I have written, I fear I may have been too harsh in my criticisms. The Warwick displays none of the tonal problems common to budget speakers (primarily harsh, aggressive treble), and indeed is one of the more even-handed speakers I’ve heard in this price range. Ultimately, the problem is that the Castle sounds *nice*, but rather uninvolved. It simply never manages to sound convincingly lifelike.

With a greater sense of detail and immediacy, the Warwick could be a real winner. For now, the Castle can be regarded as a well-built (and gorgeously-finished), eminently listenable speaker that never quite bridges that chasm between performer and listener. At \$495 it is a bit pricey (compared to the \$399 Rogers LS2a, for example), but still worth investigation. ■

siting the speakers about 2 feet out from the back wall, and roughly 3 feet from the side walls, gave the best balance of bass definition and imaging.

The first thing I noticed about the Warwick upon auditioning was its exceptionally smooth, listenable character. Never sounding brash or strident, the Castle always managed to provide a satisfying, enjoyable performance. Unfortunately, this consistent listenability seems to have come at the expense of immediacy and excitement, as music through the Warwick never managed to sound *present* or *alive*. The Warwick’s lack of low-level detail and recording acoustic made performances sound somewhat remote and impersonal.

The *Rickie Lee Jones* LP is an excellent example of this, as the best loudspeakers convey this recording

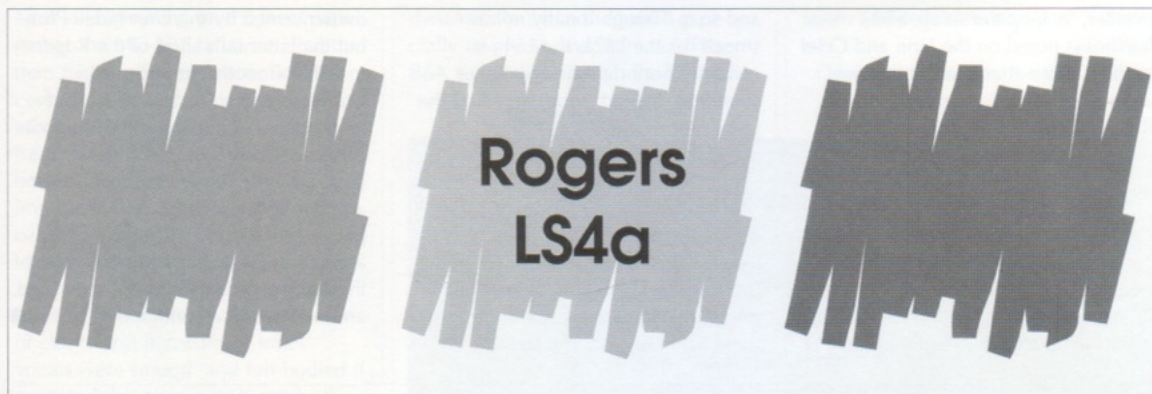
with subtlety and grace. The sound here was smooth and musical, but it ultimately lacked excitement. Recording acoustic and air were diminished, and so too were the little details and nuances of a musician’s performance that give it character and flavor.

The Shostakovich symphonies were next, and the Castle certainly impressed with its tonal balance. Strings were vivid and resonant, while brass had a nice combination of body and bite. Only when pushed very hard did these instruments start to sound a bit harsh. Bass drum and tympani were, not unexpectedly given the Warwick’s modest size, rolled off in level, though definition was quite good, there being only a modicum of blurring of note attacks. Alas, the Warwick’s problems in retrieving low-level detail and recording ambience made the performance sound

**Price: \$495**

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The LS4a is the latest addition to the Rogers line. Utilizing the same drivers as the larger, more expensive (\$699) LS6a, the LS4a is most notable for its sealed cabinet design, unique among current Rogers-designed speakers. Measuring a bit larger than the LS2a, at 17" H x 10" W x 9.6" D, the LS4a is a two-way design featuring a Rogers-manufactured 8" bass/midrange driver and a SEAS 1" aluminum tweeter (see review of the LS2a for description of the latter). The bass/midrange unit uses a polypropylene cone with an inverted butyl rubber roll surround. The basket is stamped steel, and carries a good-sized magnet.

Save for the exceptions noted above (sealed cabinet, larger bass/mid driver), details of the LS4a's materials, construction methods, and finish are identical to those of the LS2a, reviewed elsewhere in this issue. For the sake of brevity, please see that review for further information on the LS4a's design.

Rogers recommend placing the LS4a on stands approximately 18" high, and I thus used the Sound Organisation stands on hand (see Linn Index Plus review for description of this excellent, affordable stand). I played around with positioning, and ended up with the LS4a about 1 1/2 feet out from the back wall. The LS4a's sealed box design allowed me to augment its bass power via near-wall positioning without obvious impairment of note definition and crispness.

This speaker is an interesting contrast to the LS2a. The LS4a lacks the smooth, full-bodied tonal balance of its compact sibling, and I initially found this off-putting. I soon realized the two speakers are quite different,

with the LS4a offering a distinctly more lively, punchy performance.

Listening to tracks from Paul Simon's *Graceland*, I was amazed at the LS4a's bass power and definition. Kick drum and bass guitar had exceptional power and solidity, rivalling the Linn Index Plus in this regard. Tunes like "Graceland" and "You Can Call Me Al" moved along with fine pace and spirit, due in no small part to this bass clarity and crispness. Vocals were not as smooth as through the LS2a, but were certainly not harsh or strident. Recording acoustic and detail were very good, though not up to the standards of the Spica TC-50 (also retailing for \$550). Similarly, imaging was well above average, but somewhat shallow and constrained in width compared to the Spica.

The Bach Chaconne was handled well, with the LS4a doing a nice job capturing the guitar's body and resonance. Note attack and dynamics were very good, with just a slight

thus undercut the performance's sense of immediacy and intimacy somewhat.

The Shostakovich symphonies sounded exceptionally good through the LS4a, with the orchestra's power and dynamics conveyed particularly well. Strings were both vivid and resonant, while brass had fine body and bite. I again noted a slight lack of recording air and ambience, and this did make the orchestra sound a tad remote, but this was not a serious problem. Bass drum and tympani had surprising weight and impact given the LS4a's compact size. The martial cadence section of the fourth movement in Symphony No. 11 was handled well, with the pace and urgency of the strings communicated to good effect.

*Surfing With The Alien* was an irresistible test for the LS4a's bass performance, and the Rogers did extremely well. The kick drum on the title track came across with great power and definition, never becoming

Price: \$549

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P.O. Box 381  
Highland Lakes, NJ 07422  
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smearing of crisply-struck strings apparent. Recording acoustic and detail were slightly diminished, and

boomy or indistinct. Joe Satriani's screaming guitar sounded particularly good through the LS4a's aluminum

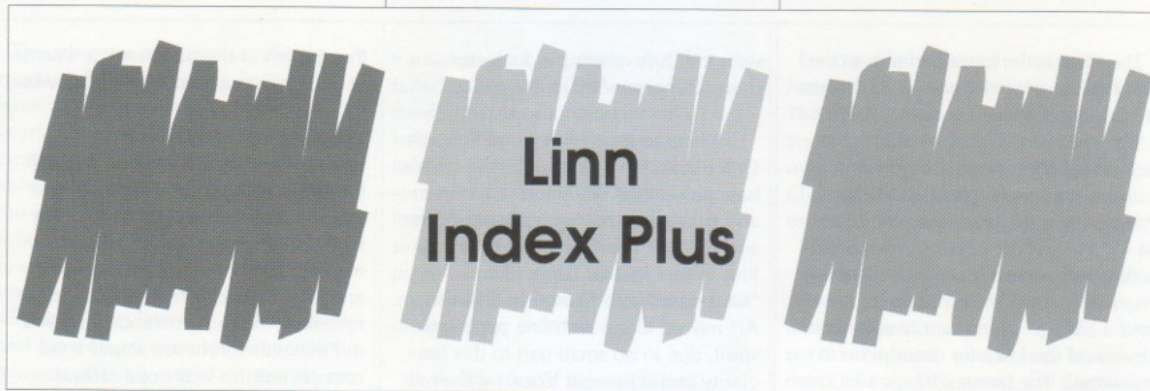
tweeter, lacking the sizzle and harshness noted on the Linn and Celef models. Note attack and dynamics were also very good. Indeed, the Rogers handled this album with a sense of energy and gusto that was gratifying.

In many ways this model has more in common with the Linn Index Plus (also a sealed box design) than it does with its stablemate, the LS2a. Bass response is excellent, with outstanding impact

and snap. Though tonally not as smooth as the LS2a, the LS4a is certainly not bright or aggressive sounding. Indeed, some may find the LS4a's more forward balance preferable.

Of the two Rogers models, I ultimately prefer the LS4a for its greater sense of rhythmic drive and progression, as well as its more impressive dynamic capabilities. By these same criteria, the LS4a is

outperformed by the Linn Index Plus, but the latter falls short of the Rogers in treble smoothness and clarity. Conversely, the Spica TC-50 clearly (pun intended) exceeds the LS4a in its imaging and detailing abilities, but can't rival the Rogers for bass power and dynamics. It is this *balanced* performance that makes the Rogers so attractive. The LS4a is certainly one of the leading models in this price range, and well worth an audition. ■



The original Index was introduced in 1985 (see review in Issue Two), and was a promising but ultimately flawed device. It exhibited obvious problems in tonal balance, sounding rather hard and strident. As is their wont, Linn immediately set to work improving the product. The revised Index was reviewed in Issue Three, and was much superior to its predecessor, sounding smoother and more musical.

On test for this survey is Linn's latest version, dubbed the Index Plus. It boasts further refinements in the crossover design, as well as a general upgrading of construction standards. A compact (17" H x 11" W x 8" D) two-way system, the Plus is a sealed box design, *truly*. Silicone sealant is applied to the mounting flanges of both the 1" Tonegen tweeter and the 8" KEF B200 bass/midrange, assuring an air-tight cabinet. The tweeter is a soft dome unit, utilizing a doped fabric diaphragm. An exceptionally well-made driver to be found in a budget loudspeaker, the B200 is built on a substantial stamped steel basket, and carries a massive magnet. Its diaphragm is made of Bextrene, which in turn is terminated by a butyl surround.

Both drivers are mounted flush on the

Index's 18mm MDF baffle. The rest of the cabinet is built of 18mm particle-board. Machine screws and T nuts are used to fasten both drive units to the baffle, allowing far greater tightening torque than the wood screws commonly used by many manufacturers. The cabinet's interior is damped by liberal quantities of fiberfill material. Heavy multi-strand wire connects both drivers to the crossover, and all connections are soldered. The crossover components are mounted on a glassfibre board, and are of excellent quality. Cable termination is via machined 4mm sockets, which accept banana plugs (supplied). These high-quality sockets are set directly into the cabinet's rear panel, rather than on a sub-panel, and this further contributes to the air-tightness of the enclosure.

The Index Plus is offered in one finish only, black ash vinyl veneer. This covers every surface of the speaker except the front baffle, which features a subtle pebble-grained black vinyl. The grille frame is made of particle-board, and bevelled to reduce diffraction. Black stretch cloth covers the frame. Overall construction quality is superb for the price.

Rated sensitivity is 88 dB/1 Watt/1

meter. Nominal impedance is 8 ohms.

The Index was mounted on Sound Organisation speaker stands, specifically the model ZO27 Mid-Stand, which is 18" high. A single-pillar design composed of rectangular-section steel tubes, the ZO27 has three adjustable spiked feet, and four adjustable, inverted spikes on the top plate. This stand is exceptionally easy to assemble and adjust, and at only \$85 retail strikes me as the single best buy in loudspeaker stands today. A second model (the ZO26 Hi-Stand) is also available, it being 24" high, making it ideal for many minispeakers and small bookshelf-type models. The price of the Hi-Stand is also \$85. There will be a full review of this stand in the next issue, but I can say now that anyone in the market for loudspeaker stands should make every effort to check these units out.

The Index Plus is specifically designed to be placed as close to the rear wall as possible, thus the review samples were placed roughly 3 inches out from the back wall, and about 3 feet from the side walls. The grilles were removed for all auditioning.

As before, the Index impresses most



with its punchy, dynamic sound. Steve Winwood's "Higher Love" came across with outstanding snap and pace, the synth bass and kick drum

musicians sounded rather clumped together, an unnatural effect that impaired the credibility of the performance. On a more positive note,

sounding slightly brash in high-level passages, where the Linn's lively treble could get a bit excessive. Recording acoustic and depth reproduction were again in short supply, and this made the performance seem somewhat remote and distant.

**Price: \$595**

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being particularly deep and forceful (the Index turned in the best bass performance of any of the speakers on test). Winwood's vocals were slightly thin-sounding, and synthesizers sounded a bit cold, but this was not a major problem. When played at very high volume (and I mean **LOUD**), I did notice some harshness and stridency in the synthesizers. The Index's crossover point is at a relatively low 2 kHz, and this puts greater demands on the tweeter, which may explain the harshness I experienced. I also detected a diminution of recording acoustic and ambience, with the reverb on some of the instruments curtailed. This slightly undercut the "live" feel of the tune. Regardless, the Index was great fun on this track, with the performance having exceptional spirit and energy.

Rickie Lee Jones was up next, and this LP highlighted some of the Index's weaknesses. Jones' vocals had good body and warmth, but sounded a bit veiled and distant, lacking their usual immediacy and clarity. The intimacy of the performance was also undercut by the relative lack of recording acoustic and air, as well as the unexceptional reproduction of the depth. The latter is due, at least in part, to the Linn's near-wall positioning. The result was that the

the Index did quite a nice job of conveying nuances and details of instrumental technique. Background guitar and piano parts were easy to follow and appreciate, and this made the performance more interesting and compelling.

The Shostakovich symphonies were especially convincing through the Index, the sheer power and impact of the orchestra communicated to superb effect. The Linn's exceptional note attack and crispness made up to some extent for the slightly airless, closed-in feeling evident here. Strings and brass had good body and clarity, only

Lastly, I put on Joe Satriani's *Surfing With The Alien*, and the Linn's outstanding punch and drive served this album especially well. Kick drum and bass guitar (the latter also played by Satriani) were deep, powerful, and rock-solid. This LP has tremendous presence and energy, and the Linn's slightly forward treble helped communicate this despite a lack of recording acoustic and low-level detail. Of course, that same lively treble made Satch's forays up the neck sound a bit harsh and shrill. In the end, I was having so much fun I really didn't care.

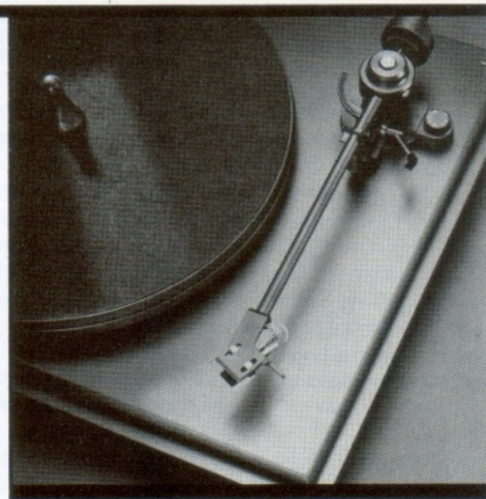
As should be obvious by now, the Index's strength lies in its energetic, exciting presentation. Subtlety is not one of its notable attributes. If ones uses a bit of care in selecting associated equipment (avoid bright, zingy-sounding components), the Index can provide a great deal of musical satisfaction. And fun. ■

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# INTEGRATEDS

# A D INFINITUM

High-quality integrated amplifiers continue to proliferate, with the British providing the lion's share as usual. It's a pity American audio manufacturers have so utterly abandoned the integrated amplifier, as it is the most cost-effective

means of providing quality music reproduction to those on a budget.

True, there are theoretical compromises inherent in an integrated unit. The preamplifier and power amplifier sections share a common power supply, and this can cause intermodulation problems as the heavy current draws of the power amp temporarily starve the preamp section for power. Clever engineers can minimize this with tightly regulated power supplies. The close proximity of high and low voltage circuits can also cause problems, though again thoughtful designers carefully lay out circuit paths to keep low-level and high-level signals

apart.

Far outweighing these drawbacks, however, are the tremendous cost advantages enjoyed by the integrated amp. Separate preamp/power amp combinations include *two* chassis, *two* transformers, *two* line cords, *two* sets of control knobs and *two* off-on switches, etc. In many cases, this redundancy of parts does nothing to enhance sound quality, but greatly increases costs.

Above the budget level, the theoretical advantages of the preamp/power amp configuration are persuasive, but for the entry-level audiophile the integrated amp still reigns supreme.

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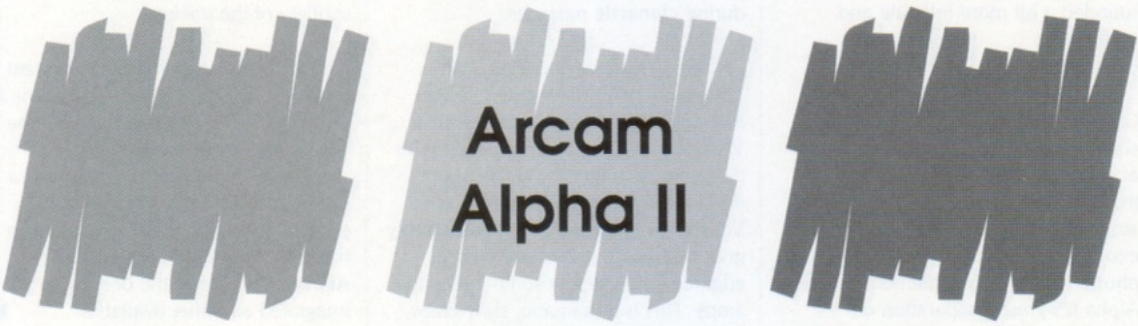
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## Arcam Alpha II

Just as I declared the Alpha Plus the best value integrated amplifier in the world, Arcam up and improved it. Now dubbed the Alpha II, the new model most obviously differs from its predecessor in size, being opened up to industry-standard 17" width. The new Alpha is thus visually compatible with mass-market equipment, which should make the Alpha II a more palatable choice to budget shoppers concerned with aesthetics as well as sonics.

Speaking of aesthetics, the restyling of the Alpha II is a great success. The II has an austere, Teutonic look reminiscent of the best designs from Braun or Porsche Design. The faceplate is cleanly and intelligently laid out. At the extreme left is the program selector switch, allowing the user to choose either a turntable, CD player, tuner, or video (auxiliary) source. Immediately adjacent is the tape monitor button, which allows a three-head deck to be fully exploited. Next is the volume control, followed by a slight gap before one encounters the tone and balance controls, headphone socket, and finally the power switch. Ergonomically, grouping the selector switch, tape monitor button (which doubles nicely as a muting switch), and volume control together makes great sense, as these are the controls most often used.

On the back panel are the source inputs (all using RCA jacks), and Arcam's traditional switched and unswitched loudspeaker outputs. The switched outputs put the headphone socket in circuit, thus disabling the speaker outputs when a headphone plug is inserted. The unswitched outputs are, of course, always live. The latter, by virtue of their more direct

signal path, are preferable from a sonic point of view.

Internal construction of the Alpha II is stunningly good for a \$350 product. Arcam have upgraded the quality of the toroidal transformer, which enjoys a novel mounting arrangement. An extruded aluminum crossmember (ribbed for stiffness) joins the faceplate and rear panel of the chassis, and it is to this crossmember the transformer is fastened. This isolates the Alpha's circuitry from the toroid's vibration. Said circuitry is contained on a single glassfibre circuit board, whose layout has been improved over that of the earlier Alpha. Save for the transformer leads there is virtually no internal wiring, with all controls, inputs and outputs mounted directly on the board. High quality parts are in abundance (again an improvement over the Plus version), such as the close-tolerance metal film resistors

seems somewhat slim. Nevertheless, the added flexibility is certainly welcome.

The output transistors mount on two extruded aluminum heat sinks bolted to the heavy aluminum rear panel, which in turn contributes to heat dissipation. While the faceplate appears to be a massive aluminum piece, it is in fact high-quality plastic. All told, the Alpha II displays a cleverness of design and attention to detail all too rare in this price class.

The Alpha II is rated at 30 watts per channel into 8 ohms.

More of an evolutionary than revolutionary improvement over the earlier Alpha, the new model offers greater low-level detailing and dynamic punch. On the *Rickie Lee Jones* LP, there was a greater sense of the recording acoustic, as well as more

**Price: \$349**

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used in the phono preamp. While the standard Alpha II accepts MM or high-output MC cartridges only, an optional (\$65) plug-in MC board is available, though the likelihood of using a low-output MC cartridge with a \$350 amp

vivid delineation of background instrumental lines, and this made the performance a bit more compelling and vital. The bass guitar on "Danny's All-Star Joint" displayed greater snap and bounce, adding to the song's

energy and spirit. Jones' vocals also sounded a bit more intimate and immediate.

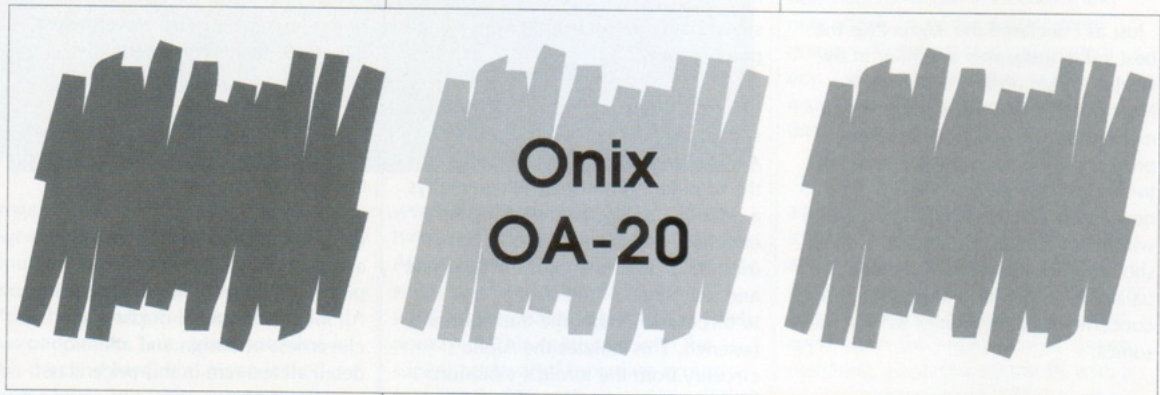
I noted similar effects on the Bach Chaconne, as Newman's guitar had slightly greater presence and immediacy, his subtle note shapings being that much easier to apprehend. Note attack and dynamics were also excellent. The Shostakovich Symphony No. 11 helped demonstrate the Alpha II's greater separation of instrumental lines, with violins and

brass remaining quite distinct even during climactic passages.

Finally, I listened to Stevie Ray Vaughan's performance of "Tin Pan Alley" (from the *Couldn't Stand The Weather* LP), and was impressed with the Arcam's ability to convey the nuances and emotional impact of Vaughan's guitar. Vocals were suitably gruff, but without the harshness or edginess imparted by some integrated amps. This is a dramatic, slow blues, and the Alpha II did an exceptionally

nice job of capturing the tension and subtlety of the track.

All told, a worthwhile improvement on an already excellent product. For a minor price increase of only \$50, the new Alpha II offers improved cosmetics, better build quality, and a somewhat more informative and compelling musical performance. An obvious "**Best Buy**", and indeed the Alpha continues as the best value integrated amplifier available. ■



Regular readers know I consider the Onix OA-21 one of the best integrated amplifiers money can buy. At \$750, however, it is out of reach for many people assembling their first high-quality audio system. To remedy this dilemma, Onix have released the OA-20. Similar to the OA-21 in basic circuit topology, the OA-20 employs a smaller toroidal transformer and lower-rated output transistors. In addition, the OA-20 can accept moving-magnet or high-output moving-coil cartridges only, while the more costly OA-21 offers the user the convenience of replaceable MM or MC phono boards.

The OA-20 is the very embodiment of minimalist design. Its front panel features an off-on switch, volume control, and source selector switch. Period. No balance control, tone controls, tape monitoring facility, headphone output, outputs for a second pair of speakers, etc., etc. The Onix has inputs for a turntable, CD player, tuner, and one tape deck, with RCA jacks used on every input. Loudspeaker cable termination is by 4mm sockets, which accept banana plugs only (not supplied).

Internal construction is amazingly good for such a modestly-priced amplifier. Built on a single glassfibre circuit board, the Onix has virtually no internal wiring. The quality Alps volume control and selector switch are mounted directly on the board, as are the input jacks and loudspeaker outputs. Board layout is notably neat, and parts quality is commendable for the price. The output transistors are mounted on an L-shaped aluminum piece which bolts to the bottom of the Onix's aluminum chassis, thus allowing the case to serve as additional heat sinking. Overall build quality is extremely impressive for the price.

Ah, the Onix case. The OA-20 and OA-21 are cosmetically identical, save for the OA-20's substitution of a green LED for the OA-21's red LED power indicator. Measuring an unusual 2.5" H x 9" W x 14" D, the casework is built entirely of aluminum, and painted matte black. A beautiful brushed aluminum faceplate is complemented by the huge (2" diameter) volume and selector knobs, also brushed aluminum. The small power switch lies between the knobs, above the classy "onix" logo. There is

no other printing on the faceplate — the markings for the volume control and switch positions are on the chassis' cover, directly above the faceplate.

Certainly, I don't wish to place undue emphasis on a component's appearance, but it must be said this is simply one of the most gorgeous audio components built in the world today, bar none.

Rated output of the Onix OA-20 is 35 watts per channel into 8 ohms.

The OA-20 turned out to be an interesting alternative to the class leaders in this price range, the Arcam Alpha II (\$350) and Creek CAS 4040s2 (\$450). While the Arcam and Creek offer exceptionally smooth, musical performances, the Onix comes across as a slightly more forward, lively device. Guitars have greater bite and presence, while snare drums display an extra sense of snap and crispness.

Steve Winwood's punchy "Higher Love" exemplified this well, as the Onix made the performance even more vivid and exciting. Horns and synths cut through with exceptional

crispness and presence, and guitars were particularly sharp and incisive. This came at the price of a degree of stridency and aggressiveness, however. Winwood's reedy vocals sounded just slightly thin, while guitars and synths came across as a bit hard and cold. Quite minor problems, really, and only obvious when compared to the Arcam and Creek.

Rickie Lee Jones sounded vital and present, her vocals conveyed with detail and clarity. There was a minor tendency towards thinness here, but again it was of no great significance. Recording acoustic and air were reproduced very well, and this made Jones sound more intimate and "live". Acoustic guitars displayed exceptional note attack and dynamics, making a song like "Weasel and the White Boys Cool" especially punchy and snappy. The Onix excels in its ability to convey tempo and rhythmic progression, and this helped both the uptempo and "quieter" songs maintain a sense of energy and direction.

Keith Jarrett's performance in *The Koln Concert* was impressive, his piano coming across with fine presence and dynamics, though its characteristic "clanginess" was exaggerated a touch. Michael Newman's guitar sounded very good indeed, with outstanding resonance and clarity. Tonal balance was excellent, with no obvious thinness

here. Note shapings and colorings were easy to apprehend, making the

amplifier that offers remarkable value for money. True, it does tend to sound

**Price: \$389**

**Contact:**

**Music Hall**  
**108 Station Road**  
**Great Neck, NY 11023**  
**(516) 487-3663**

performance particularly involving and compelling, sounding more "human" and less mechanical.

Shostakovich's Symphony No. 11 was next, and here I again noticed the Onix's forward, explicit character, as brass had an extra sense of bite and attack that, while initially impressive, ultimately proved unrealistic. Strings were vivid and sharp, but again slightly lacked warmth and body. Note attacks and dynamics were excellent, and this combined with the Onix's strong sense of pace and rhythmic progression to give the performance outstanding impact and drive.

In the end, the Onix OA-20 impresses as an exceptionally capable

a bit "hi-fi" compared to the unshakable musicality of the Arcam Alpha II and Creek CAS 4040s2. Some may find the Onix's more upfront, lively presentation preferable, feeling the Creek and Arcam sound a tad bland by comparison (though I would suggest such a finding may be indicative of faults elsewhere in the system). Each listener must make that determination for himself, in the context of his own audio system's characteristics. While I ultimately prefer the Arcam and Creek, I nevertheless consider the Onix an excellent product. By virtue of its superb build quality, lively and engaging sound, and extremely reasonable price, the OA-20 certainly qualifies for "Best Buy" status. ■



My last encounter with the Rotel 840 integrated amplifier took place in Issue One of this magazine, when a simple "B" suffix adorned its model designation. I was certainly impressed by the 840B, particularly given its modest retail price of \$299. Now comes the Rotel 840BX3 to my door. Despite the

intervening years and the addition of numerous control and convenience functions (not to mention circuit refinements), the Rotel has only risen \$100 in price. A pleasant surprise indeed.

The 840BX3 is a relatively full-

featured model, sporting such amenities as tone controls, two sets of speaker outputs (one switched, one direct), a headphone socket, a combination mono/tone control activation switch, and a tape monitoring/dubbing circuit. The Rotel's program selector allows you to choose

between a turntable (carrying either an MM or MC cartridge, selection between the two modes via a button on the rear panel), CD player, tuner, and two auxiliary/video sources. The Rotel also includes facilities for two tape decks.

All source inputs and outputs feature RCA jacks, and the loudspeaker outputs are five-way binding posts. Construction quality of the 840BX3 is well above average for the price, though lacking the elegance and simplicity of the Arcam Alpha II and Onix OA-20. A large, shielded toroidal transformer occupies the left rear of the chassis, with the Rotel's internal heat sink positioned to further shield the audio circuits from the transformer's hum field. Save for the tone controls and power switch, which are mounted on a small sub-board, all of the 840BX3's controls are mounted directly on the main circuit board.

The Rotel 840BX3 is rated at 50 watts per channel into 8 ohms.

The 840BX3 turned out to be a lively, forward-sounding amplifier, though lacking some of the subtlety and refinement of the Arcam Alpha II and Creek CAS 4040s2. Starting with the title track from Joe Satriani's *Surfing With The Alien*, I noticed the bass guitar and rhythm guitar sounded

sound here was energetic and involving, if a little sloppy around the edges.

Next was the Shostakovich Symphony No. 11, and I again noted a tendency towards thinness and stridency, as the strings and brass came through with a little too much edge and bite. Brass in particular got a bit raspy in climactic passages. Note attack and dynamics were good but not great, as strings sounded a tad blurred and lacking in crispness and clarity. The martial cadence section of the fourth movement sounded somewhat subdued and flat, the tension of the music undercut by the relative lack of crispness and vitality in the strings. Instrumental lines got a bit jumbled together during climactic passages. Altogether, the performance was respectably good, but I never really felt as involved in the music as I should have.

Michael Newman's guitar sounded quite nice tonally. I had expected it to come across as slightly cold or thin, but it in fact had good body and resonance. Note attacks and dynamics were not particularly impressive, as the Rotel tended to slur and flatten sharply-struck notes, robbing them of some of their impact and snap. Quickly-played runs ran together, with the individual notes lacking crispness

Rickie Lee Jones was next, and the Rotel fared better here. Uptempo numbers like "Danny's All-Star Joint" came across with a nice feeling of sass and pace, despite the smearing I noticed in both the bass guitar and kick drum. Jones' voice was a bit cold and thin, but not to the point of sounding harsh or strident. The next track, "Coolsville", was equally satisfying, with the dramatic, eerie atmosphere of the song captured to good effect. Piano lacked a little warmth and body, but overall was quite convincing. There again was a diminution of recording acoustic and air, which did undermine the tune's immediacy slightly.

Lastly, I put on John Prine's *Bruised Orange*, and was again confronted with the Rotel's slightly thin tonal quality, as Prine's already-raspy vocals took on an additional edge. Note attack and dynamics of the many acoustic guitars that appear on this superb album were a bit blurred and rounded off. Nothing severe, but certainly easily discerned. Despite these flaws, the album was still quite enjoyable, with the essential spirit and humor of the music largely intact. This is a very "live" album, and the Rotel's lack of recording acoustic robbed the performances of some of their remarkable immediacy and vitality.

While the 840BX3 does have its problems, it is nevertheless an attractive product. Sound quality, though not of the top rank for this price range, is still quite enjoyable, if lacking the refinement and finesse of some its competitors. The Rotel also includes a broad range of convenience and control functions (indeed, its inclusion of a moving-coil cartridge stage in the phono preamp is highly unusual at this price point), as well as noteworthy output power — the 840BX3's 50 watt rating seems quite conservative.

The Rotel's ace in the hole, though, is its exceptionally reasonable price of \$399. Combined with its good sound quality and extensive control functions, this makes the 840BX3 a solid value, and well worth investigating for yourselves. ■



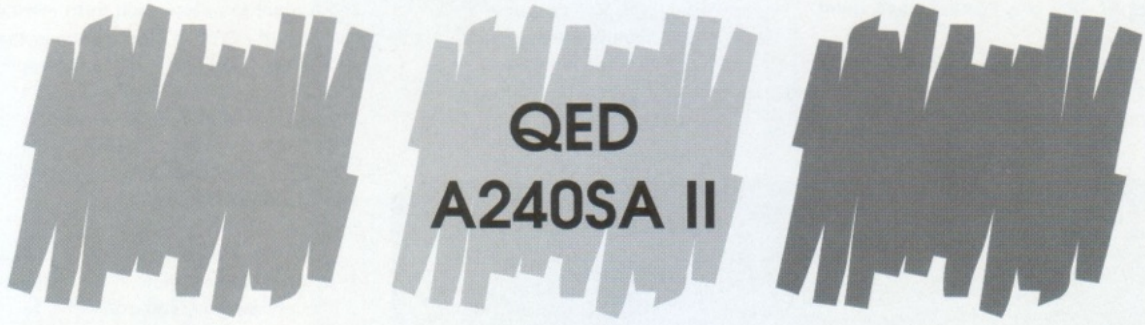
**Price: \$399**

**Contact:**

**Rotel of America**  
P.O. Box 653  
Buffalo, NY 14240  
(416) 751-4520

slightly smeared, lacking their usual crispness and snap. Kick drum was also a bit blurred. These were minor problems, though, as the track still came across with good impact and pace. Satriani's lead guitar displayed a degree of thinness and hardness, which though certainly noticeable, wasn't especially noxious. In sum, the

and clarity. While not gross problems, these deficiencies combined to make the performance sound a bit tired and homogenized. Recording acoustic and ambience were also slightly curtailed, further distancing the listener from the performance. The Rotel didn't sound *bad*, just a bit bland.



## QED A240SA II

QED seem to be thinking along the same lines as Arcam, at least to the extent they have redesigned the A240SA's chassis to industry-standard 17" width, and added a "II" suffix to the resultant amplifier. Alas, QED have not emulated Arcam's aesthetic sensibilities, for the new A240SA II is a rather plain-looking device (though an improvement over its predecessor). No matter, sound quality is what counts, and the QED is an unqualified success in that regard.

As is becoming increasingly common, the Series II boasts an all-aluminum chassis, to avoid electromagnetic interaction with the audio circuits. A 5mm aluminum extrusion is used for the faceplate, which features machined recesses to complement the solid aluminum control knobs. Very classy. Control functions are minimal, with "listen" and "record" program selectors (allowing you to listen to one source while recording another), a ganged volume control, a headphone socket, and of course the power switch. All source inputs are via RCA jacks, and both switched and unswitched loudspeaker outputs are provided.

Regarding the ganged volume control, note that volume pots are normally two-channel devices, thus the inclusion of a separate balance control is effectively redundant, needlessly causing another break in the signal path. QED's use of a ganged control allows you to adjust the volume of each channel independently, while avoiding the potential sonic degradation of a balance control.

Indeed, QED refer to the A240SA II as a "signal path optimised" amplifier,

and this is no mere marketing hype. Like many of its like-priced specialist audio competitors, the QED carries its circuitry on a single glassfibre circuit board. All controls and components save the transformer (a quality toroid from Holden and Fisher) are mounted on the board, eliminating point-to-point wiring within the chassis. Component quality is excellent, with high-quality caps and resistors in evidence. Inspection of said components leads to a surprising discovery, as the A240SA II employs all-discrete circuitry — not an IC to be found. This is a costly way to build an amplifier, and it is to QED's credit that they have managed to offer a discrete design at a reasonably competitive price.

QED designer Bob Abraham believes many of the sonic qualities exhibited by tube amplifiers stem largely from the inherent simplicity of their circuit topology. Rarely are there more than two active devices per gain stage, mandating simple, direct signal paths. As suggested earlier, the simpler the signal path, the better. The minimal number of components in a tube circuit also make star-grounding practical, a technique wherein each component has a separate ground path leading to a central grounding point. The sonic benefits of such an arrangement are now being discovered (or rediscovered, as it's hardly a new idea) by many of today's top designers.

Abraham believes a number of these principles can be applied to solid-state equipment, but not through the use of integrated circuits. A typical IC may contain dozens of semi-conductor junctions, because the IC's tiny size restricts the performance of the individual transistors, greatly increasing the *number* of components

required to obtain a satisfactory result. This is obviously in direct conflict with the goal of a simple, direct signal path. The sheer number of transistors in the IC also make star-grounding impossible, as the IC would require a separate grounding leg for each transistor, hardly practical. By using all-discrete circuitry, Abraham is able to incorporate many of the design desiderata discussed above.

The most notable implementation of Abraham's ideas comes in the guise of the Super Analog phono board (hence the "SA" moniker). A plug-in module that contains the circuitry for both the MM and MC stages, the SA board is a completely dual mono circuit, with substantial, separate regulated power supplies for each channel. This not only isolates the two channels from one another, it also isolates the phono stage from heavy current draws in the power amp section. The moving coil stage is not simply the MM stage with added gain, but a dedicated circuit utilizing only two transistors. Selection of either MM or MC stage is accomplished by flicking two switches on the SA board.

By the way, the A240 is also available in a CD version, which substitutes a rather basic, IC-based phono board for the SA circuit, this model intended for those who use CD as their primary program source. While I regard such a course as utter folly, it's worth noting the A240CD II can later be upgraded to SA status by purchasing the SA board (it's a simple plug-in replacement for the CD's phono board). This allows those who cannot afford the SA version initially to later upgrade when funds permit. Retail price of the A240CD II is \$585.

Rated output power of the A240SA II is 40 watts per channel into 8 ohms.

Beginning with John Prine's *Bruised Orange*, the QED immediately stunned me with its amazing clarity and

Bass synth was exceptionally deep and powerful, with fine crispness and definition. Synths sounded vivid and sharp without becoming strident or overbearing. Winwood's vocals were crisp and clear, lacking any trace of

of notes accurately, as well as allow the listener to follow each instrumental line regardless of its prominence in the recording. The QED's bass power and dynamics are also exceptional. Tonally, it is slightly more forward than the Arcam Alpha II, Creek 4040s2, or the Naim NAIT 2, but still warm and full-bodied.

**Price: \$750**

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**May Audio Marketing, Inc.**

**P.O. Box 1048**

**Champlain, NY 12919**

**(800) 422-7525**

quickness. Acoustic guitars were crisp, vital and immediate, with the most subtle note shapings easily apprehended. Prine's vocals were just about perfect, his characteristic rasp neither emphasized nor diminished. Kick drum and bass guitar displayed remarkable power and clarity, the QED turning in the best bass performance of any of the integrateds on test here.

Next up was Shostakovich's Symphony No. 11, and the QED again dazzled with its sense of quickness and dynamics. Strings came through with tremendous attack and crispness, and tonally they were superb, with perhaps just the tiniest trace of thinness evident. Brass sounded exceptionally robust and powerful, with great bite and attack. Indeed, the QED was remarkable in its ability to convey the sheer force and intensity of the orchestra. Low-level detail and recording acoustic were in abundance, making the performance all the more immediate and credible. Separation of instrumental lines was also outstanding, even in climactic passages. The martial cadence section of the fourth movement was handled beautifully, the A240SA II communicating the tension and urgency of the music to great effect.

Steve Winwood's "Higher Love" was tremendously punchy and dynamic, with percussion effects coming through with great snap and clarity.

harshness or edge. The QED's combination of clarity, razor-sharp note attack, and powerful bass made this track exceptionally exciting and entertaining.

Michael Newman's guitar sounded glorious, with a combination of crispness and body that was unequalled by the other integrated amplifiers on test. The shape and character of each note was easy to hear, and this combined with the exceptional retrieval of recording acoustic to give the performance tremendous immediacy and intensity.

Lastly, the *Rickie Lee Jones* LP confirmed my impressions, with the QED again amazing with its sense of speed and clarity. Jones' vocals came across with outstanding presence and immediacy, but sounding warm and resonant. The bass guitar in "Danny's All-Star Joint" had great snap and drive, and this gave the song extra energy and vitality. Guitars and keyboards also sounded particularly clean and vibrant, with no smearing or slurring of notes apparent. The QED's remarkable ability to capture the beginnings and endings of notes gives music more variety and subtlety, as the techniques of the individual musicians are more easily appreciated.

Unquestionably, the A240SA II is one of the best integrated amplifiers I have ever heard. It impresses by virtue of its ability to convey the attack and decay

If I have any quibble with the QED, it is in the matter of price, as \$750 seems a bit steep when compared to competitors like the Creek 4140s2 (\$550) and the new Arcam Delta 60 (\$599). At \$550-\$600, the QED A240SA II would be a stunning bargain. At \$750, it nevertheless represents reasonable value. At any price, though, it is a superbly musical product. I urge anyone shopping for an amplifier in this price range to audition the A240SA II — it really is something special indeed. ■

**Additional  
integrated amplifier  
reviews scheduled:**

**Arcam Delta 60,  
Audio Dynamics  
CA-2000E, the new  
Creek 5050,  
Exposure X, Mission  
Cyrus One & Two,  
and more.**



Before the howls of execration commence, please note this feature is not intended to be an all-inclusive listing of every worthy hi-fi component on the face of the earth. Such an undertaking is a practical impossibility. Rather, this is an attempt to assemble a representative group of audio products that succeed in the fundamental task of delivering *music*. Many of the components discussed here are quite affordable, some are expensive, but *all* are honest efforts to give the music lover a functionally superior product.

The "Best Buy" check-rating system is quite simple. Two checks indicate the product was selected by *Hi-Fi Heretic* as one of "The Ten Best Buys In Audio" in Issue Ten. One check indicates the product provides an exceptionally good combination of performance and value, if not quite up to the level of those products on the "Ten Best" list. No attempt has been made to rank the products beyond these ratings. Compatibility with your own audio system and listening room will play a major part in determining which of these products is right for you.

A number of high-quality products have been omitted, due to lack of experience with current versions of said components. Thus turntables such as the SOTA, VPI, Oracle, and Well

# MEATY BEATY BIG AND BOUNCY

Tempered are missing, as well as the SME V and Linn Ekos tonearms. The phono cartridge section will also be updated as new review samples are obtained. As the number of CD players reviewed increases, a category for them will be added as well.

Please, use this feature only as a *guide* to deciding which components may bear further investigation and auditioning. Do not use it as a shopping list. *You* must decide which products provide the most satisfying musical performance. Don't be intimidated by the auditioning process — as I've said before, if you're capable of appreci-

ating music, you're capable of evaluating audio equipment.

Remember, all the hi-fi jargon in the world counts for not a whit when it comes down to the essential question of: Does this product sound like music? If you put all of the audio doubletalk out of your mind, and simply judge an audio component's performance the same way you would judge a live musical performance, you'll have no difficulty making your buying decisions. You'll choose the products which best communicate the joy of music, which is after all the whole point.



TURNABLES    TONEARMS    CARTRIDGES				
Product	Price	Best Buy	Comments	Review
Dual CS-503-1	\$250		Least expensive turntable worth considering. Can sound a bit crude compared to more expensive decks.	NA
Revolver Rebel	\$389	✓	Standard Revolver with cheaper arm. Includes Bullet cartridge (modified AT-95E). Top value budget deck.	NA
Systemdek IIX	\$459	✓	Table superb, arm OK. Armless model (\$300) great with Rega RB300. Punchy, detailed sound. Bargain in either version.	#9
Rega Planar 2 Rega Planar 3	\$499 \$599	✓	The classic affordable table. Elegant design, marvelous sound. 3 is better buy. Tonearm on either is incredibly good.	#2
Linn Axis	\$795	✓	Sophisticated motor drive circuit, clever suspension design. Sound is crisp, dynamic. Great pitch stability. Nice arm.	#8
Linn Sondek LP12	\$1165	✓✓	Superbly musical table. Extremely well-built and reliable. The standard against which all others are judged. Great bargain.	NA
Roksan Xerxes	\$1950		Clever bearing and motor drive system. Sound is quick, dynamic and detailed. Mates well with Rega arm. Expensive.	#8
Linn LVX Plus	\$295		Solid value arm. Rigid, fixed-headshell design. Can be used with moving coils. Good build quality for the price.	NA
Rega RB300	\$299	✓✓	Sophisticated one-piece cast aluminum armtube. Superb bearings. May be the single best value in audio.	NA
Alphason HR100S	\$950		One-piece titanium armtube, tungsten carbide bearings. Smooth, sweet sound. Less expensive versions also offered.	NA
Eminent Technology Two	\$950	✓	Innovative air-bearing design. Exceptional detail and imaging. Set-up a bit involved. Remarkably sophisticated for the money.	NA
Linn Ittok LV II	\$965		Exceptionally rigid design, with great bass performance. Tonal balance can sound a bit forward. Beautifully finished.	NA
Goldring Epic	\$80		Smooth, laid back sound. Great match for strident budget components. Strong body to allow secure installation.	#4
Arcam E77Mg Arcam P77Mg	\$120 \$150	✓	Magnesium body improves resolution, allows solid mounting. P77 more detailed, open. Both models superb value.	#8
Goldring Eroica Goldring Eroica L	\$260 \$260	✓	Smooth, relaxed sound. Lack usual MC brightness. Low-output L slightly more detailed. Great buy for the price.	NA

TURNTABLES TONEARMS CARTRIDGES (cont.)				
Product	Price	Best Buy	Comments	Review
Linn K9	\$275		Bright, lively tonal balance. Outstanding sense of pace and rhythmic progression. Metal body allows solid mounting.	#8
Audio-Technica AT-F5	\$325		Exceptionally open and detailed at the price. Can sound a bit bright and forward. Limited availability.	NA
Audio-Technica AT-OC9	\$700		Detailed, involving sound. Tonally just slightly forward. Now distributed by A-T's Signet Division.	NA
INTEGRATED AMPLIFIERS				
Arcam Alpha II	\$349	✓✓	Marvelous combination of detail and warmth. Optional MC input. Beautifully built for the price. Best integrated buy.	#11
Onix OA-20	\$389	✓	Lively, exciting presentation. Minimal facilities. Superb build quality, and utterly gorgeous styling. Fine value.	#11
Creek 4040 Creek 4140	\$450 \$550	✓	Perennial favorites. 4140 more powerful, has MC input. Sound on both is sweet, clear, dynamic. Excellent value.	#10
Onix OA-21	\$750		Big, dynamic sound. Optional power supply pricey, but effective. Choice of MM or MC phono board. Stunning looks.	#4
QED A240SA II	\$750		Amazing clarity and presence. Tonal balance excellent. Superb phono stage. Minimal facilities. Cosmetics need work.	#11
Naim NAIT 2	\$795		Usual Naim strengths of superb pace and tempo. Smooth balance. Down on power, restricted bass dynamics.	#10
Sugden A48 III	\$875		Warm, full-bodied sound. <i>The</i> integrated for those seeking tube sound. Ugly little spud. Class A, runs hot. A bit pricey.	#10
PREAMPLIFIERS				
Superphon CD Maxx	\$329	✓	Line-level preamp, no phono stage. Smooth, sweet sound flatters CD players. Line-amp bypass. Funky styling.	NA
Superphon Revelation II	\$699 \$849	✓✓	Seductive blend of detail, imaging, and tonal warmth. Minimal facilities. Space Case version (\$849) better. Superb value.	#9
PS Audio 4.6	\$739	✓	Exceptional detail and clarity. Tonally a bit forward, needs care in system matching. Fine MC input. Line-amp bypass. Bargain.	#11

## PREAMPLIFIERS (cont.)

Product	Price	Best Buy	Comments	Review
Audible Illusions Modulus 2	\$849	✓✓	Timbral accuracy, stunning dynamics, and remarkable imaging. Incredibly well-built for the price.	#8
B&K Sonata MC-101	\$898	✓	Traditional B&K smoothness with added detail and clarity. Extensive facilities offer tremendous flexibility.	#11

## POWER AMPLIFIERS

B&K ST-140	\$498	✓✓	The classic budget power amplifier. Smoothness a hallmark. Mates well with many preamps. Superb value.	#5
Belles 150	\$649	✓	Remarkable quickness and clarity. Very revealing, shows up brightness elsewhere in system. Excellent buy.	#11
Superphon DM220	\$899	✓✓	Sweetness, clarity, and imaging. Excellent pace and rhythmic progression. Bass a bit lightweight.	#9
Forté Model 3	\$1100		Deep, tight bass. Excellent power and dynamics. Tonal balance a bit laid back. Beautifully built.	#11
Quicksilver Mono	\$1500	✓✓	Mono tube amps. Exceptionally detailed and quick. Bass a bit loose. Excellent build quality and reliability.	NA

## LOUDSPEAKERS

Boston Acoustics A40	\$170	✓	The least expensive speaker available with pretensions to high fidelity. Crisp bass. Solid value.	NA
Celestion 3	\$250	✓	Best budget minispeaker around. Quick, detailed, dynamic. Superb treble for the price. Stunning value.	#11
Heybrook Point Five	\$299		Big sound, excellent bass power for mini. Good clarity, separation of lines. Near wall siting impairs depth.	#10
JPW AP2	\$399		Lively, forward balance. Exceptional detail. Bass quick and tight, if a bit light. Superb construction and finish.	#4
Rogers LS2a	\$399	✓	Smooth, full-bodied sound. Outstanding timbral balance, good detail. Bass lacks some definition.	#11
Royd Coniston R	\$399		Punchy, exciting sound. Bass has great snap and drive. Imaging not a strong point. Slightly forward balance.	#4

## LOUDSPEAKERS (cont.)

Product	Price	Best Buy	Comments	Review
Spica TC-50	\$549	✓✓	Amazing imaging and detail. Must use proper height stands for best results. Superb value.	#4
ProAc Super Tablette	\$700		Exceptional clarity and presence, but can sound a bit bright in unsympathetic systems.	#3
Spica Angelus	\$1049	✓	Improves on the TC-50's strengths. Bass tight but a bit lightweight. Controversial appearance.	#9
Thiel CS1.2	\$1090	✓✓	Punchy, dynamic sound with tremendous imaging. Stunning build quality. One of the best values in audio.	#10
Vandersteen 2Ci	\$1195	✓	Big, smooth sound with outstanding bass power. Latest version said to offer greater clarity and detail. Superb value.	NA
ProAc Studio 1	\$1200	✓✓	Speed and clarity obvious assets. Sounds bright if not matched to system. Punchy, exciting performer.	#9
Rogers Studio 1a	\$1399		Warm, full-bodied sound. Surprising bass power for its size. Great long-term listenability.	#9
Martin-Logan Sequel	\$2250	✓	Exceptionally cost-effective hybrid electrostatic design. Superb combination of clarity and punch.	NA
MISCELLANEOUS				
DNM Interconnect	\$3/ft.	✓	Spaced-conductor solid core design. Good combination of clarity and smoothness. Unshielded.	#9
Music Metre Interconnect	\$65/1m	✓	Twisted-pair solid core, with Teflon dielectric. Like DNM, offers detail and tonal warmth. Nicely made. Unshielded.	NA
Naim NACA4 Cable	\$5.75/meter	✓	Spaced-conductor stranded design. Good compatibility with wide variety of systems. Excellent value.	NA
Sound Organisation Speaker Stands	\$85	✓	Least expensive high-quality stand around. Spikes top and bottom. Nicely built.	NA
Sony Pro Walkman Cassette Recorder	\$400	✓✓	Outperforms many home decks costing far more. Portable design allows easy live recording, too.	NA
Arcam Delta Black Box	\$650	✓	External digital-to-analog converter. Exceptionally cost-effective upgrade for CD players with digital outputs.	#10

# DAVID LINDLEY:

## HE'S GOT THE WORLD ON A STRING

By C.J. Poulos

It probably comes as no surprise that music lovers everywhere are becoming increasingly interested in "world music", largely due to the musical impact and financial success of Paul Simon's *Graceland*. It's no surprise to David Lindley, either — he's been drawing upon the diverse musical styles of different cultures for decades. Using these "new" sounds and influences both in the recording studio and on stage, Lindley has played for a broad range of artists including Jackson Browne, Rod Stewart, Linda Ronstadt, Crosby/Nash, Warren Zevon, Jesse Colin Young, Terry Reid, Ry Cooder, the Bangles, Maria Muldaur, Leonard Cohen, and Andreas Vollenweider.

Lindley's personal collection of musical instruments numbers in the many hundreds: acoustic and electric guitars, mandolins, banjos, violins, Greek *bouzoukis*, Turkish *sazs* and *tambours*, harp-guitars, dulcimers, zithers, viola de gambas (a forerunner to the cello), and other esoteric instruments such as the Middle Eastern *oud* and the *jumbush*. In particular, Lindley owns dozens of variations on one instrument, the "lap steel" slide guitar. It is probably this sound with which he is most often associated.

David Lindley was born in 1944 in San Marino, California, and grew up listening to his father's collection of Mediterranean and Middle Eastern records, as well as his brother's world-

class piano and harpsichord playing. David got his first instrument, a baritone ukelele, at age 14. Soon switching to flamenco guitar and banjo, Lindley became skilled enough to win the Topanga Canyon Banjo and Fiddle Contest *five years in a row* (for which he was subsequently barred from competition, being appointed a judge instead). During this time Lindley was also hanging out at the local guitar shops and folk clubs, where he was exposed to a variety of Mexican, rhythm and blues, and bluegrass musics. It was at these clubs that Lindley met the teenaged Ry Cooder, who was later to become a friend and collaborator.

Lindley's first two bands, "The Mad Mountain Ramblers" and "The Dry City Scat Band", were primarily oriented towards bluegrass and jug-band material. It was with the group "Kaleidoscope" that he began to expand his playing styles in earnest. Kaleidoscope played a heady mix of blues, rock, Middle Eastern, and country/bluegrass that was (and remains) unique, becoming quite a popular group on the late Sixties California scene. After recording four albums that failed to capture the excitement of their live performances, Kaleidoscope disbanded. Although David recalls these years as a time of great hardship, his experiences playing in Kaleidoscope had a lasting effect on his musical development. In particular, it was during this period that David

first heard lap steel slide guitarist Freddie Roulette, who played in a blues band but was also heavily influenced by jazz and be-bop. It was Roulette's influence that led Lindley to take up the lap steel, an instrument that David approaches almost as though it were a horn or wind instrument, in terms of phrasing the notes he plays.

Lindley started doing session work about this time, recording the starkly beautiful violin intro to Jesse Colin Young's "Darkness Darkness" ("still the finest thing I've ever done", says David).

After the breakup of Kaleidoscope, Lindley and his family moved to England for two years, where he played country-rock with Terry Reid by night and collected ska, reggae, bluebeat and African records by day.

Moving back to California in 1971, David hooked up with Jackson Browne for what was to become a lasting association both on records and on tour. (Lindley also shares Browne's political activism, becoming involved in a variety of social causes such as the "No Nukes" concert and benefits for Indian fishing rights organizations). Lindley's soaring slide guitar can be heard adding a propulsive urgency to such Browne rockers as "Redneck Friend", "Running on Empty", and "That Girl Could Sing". Throughout the Seventies, David spent at least nine months of each year touring with the cream of Southern California's musicians, becoming a "man for all seasons", prized for his musical versatility.

A major accomplishment was playing on Ry Cooder's *Bop Til You Drop*, the first digitally-recorded rock album on a major label (now you know who to blame for digital!), where Cooder's and Lindley's guitars mesh so well that they swear they're no longer sure *who* played *what* on the record. (Lindley said, "Ry's disgusting — he can do anything he wants...he always gets such a great tone.") The two pickers also toured Japan as a duet. (Cooder later commented, "David played what used to be *my* slide guitar parts, and made them *his*, *thoroughly* his!")

In 1981, after a decade of session

and backing work, Lindley decided to go it alone and record his own album, in order to recover from the "musical overeating" he'd been indulging in for many years. He had a lot of "resident noises" buzzing around in his head and wanted to let them out (music as exorcism?). Assembling an informal band composed of various friends from his session days, the group became known as "El Rayo-X". Lindley is uncharacteristically cagey about the origins of the name, stating variously that El Rayo-X was the stage name of a Mexican boxer who routinely pulverized his opponents, or the name of a song by a Mexican lap-steel player named El Maestro.

Regardless, the eponymous *El Rayo-X* is a masterpiece. Although the album is almost entirely cover versions of familiar rhythm and blues classics, Lindley's versions are so unlike the originals that it's like hearing the tunes for the first time. "Bye Bye Love" is done in a slightly world-weary reggae/calypso style that better fits the song's sentiments than the original Everly Bros. version. "Twist and Shout" turns up as an infectious, danceable salsa tune with a great, cheesy Fifties Vox/Farfisa organ sound. I remember "Mercury Blues" from an old Steve Miller live album, with Miller performing the tune as a slow blues on acoustic guitar; Lindley plays it on electric lap steel at light speed, with incredible distortion and sustain courtesy of his heavily-modified Fender amp. This is **the** greatest rock and roll tune of all time.

The album is extremely well-recorded, Lindley spending several weeks just on setting up the drums and percussion instruments to find just the right microphone placements (he used numerous old Neumann and AKG tube-type mikes — does this sound familiar?). A self-described "rhythm zealot", David states, "Rhythm is first and foremost — I've always thought in terms of drums first, because if that's not there, the music just doesn't work." The album was mastered by Doug Sax and Mike Reese at The Mastering Lab, and is sonically amazing. Buy the LP if you can find it; the CD also sounds very good, but has an editing error that cuts off the ending of one song too soon and jumps into the next track without any pause.

*El Rayo-X* is also notable for three remarkable songs written by a local LA character by the name of Bob "Frizz" Fuller, a story unto himself. Psychologically and physically debilitated from his experiences in Vietnam, Fuller for a time lived on the street. A friend of Lindley's brought Frizz to David's home, whereupon Fuller proceeded to play 40 songs on the piano while Lindley looked on in astonishment. As a result, Lindley recorded Fuller's "She Took Off My Romeo's", "Ain't No Way, Baby", and my personal favorite, the slyly ironic "Quarter Of A Man". As Lindley put it, "His songs are literary, they're on as many levels as the Koran. He's really on another frequency." Very scary, "out there" stuff.

El Rayo-X's second album, *Win This*

Lennon.) "Premature" is a Toots and the Maytals song with a powerful social message in this age of runaway teenage pregnancies. "Rock It With I" is a moving tribute to brotherhood, featuring beautiful, lilting vocal and guitar work. (Lindley wrote this, as well as five other tracks on the record.)

The album closes with "Look So Good", a solo instrumental played by Lindley on his 1920's koa-wood Weissonborn Hawaiian lap-steel guitar. (Lindley prefers the warmer sound of wood-bodied lap steels — "my children", he calls them — to the brighter-sounding dobros with metal "pie plate" resonators that many country players prefer.) Once again, the album is superbly recorded. Alas, the CD is much easier to find than the LP.



*Record*, was released in 1982, and features a fairly even split between driving hard rock and reggae. "Brother John" comes from New Orleans via the Neville Brothers and the Wild Tchoupitoulas, but Lindley and company truly make it their own. (In concert, the tune is dedicated to John

About this time, El Rayo-X was getting a reputation as a hot live band. A typical Lindley show might boast David playing Cajun blues stompers like "Le Bon Ton Roule" ("Let The Good Times Roll") on solo acoustic Hawaiian slide guitar, or Irish fiddle tunes such as "The Hangman's Reel"

(played on his rare Norwegian Hardanger fiddle which features a hollow neck with "sympathetic" strings running *inside* it). Other treats might include psychedelically-flavored reggae, a generous portion of crunching rock 'n' roll, with a healthy dose of electric Turkish saz and electric guitar thrown in for good measure. Not to mention David's wonderful facial and vocal impersonations — one moment he's Long John Silver, a few minutes later a Jamaican Rastafarian, and still later Jimmy Stewart (easily his best impression) or Jack Nicholson in *The Shining*. In short, Lindley has changed from a fellow who used to hunch over his guitar and hide behind his long hair, into a veritable extrovert. When asked whether he prefers studio work to playing live, David invariably chooses the latter, relishing the "danger" and excitement of live performance: "The audience looks up at you on stage, and they can see right through you, see your guts and stuff." Kind of makes the name "El Rayo-X" make sense, eh?

Lindley's reputation for dazzling live shows led to a live, six song EP featuring four songs from his previous two releases, as well as a great cover of Sam the Sham and the Pharoahs' "Wooly Bully", and the stunning sad/funny acoustic slide guitar blues "Rag Bag" (written by Frizz Fuller, who called upon his days on the street to chronicle the plight of winos and "bag people"). "El Rayo Live" did quite well overseas, selling 20,000 copies in Germany in a mere two weeks. Unfortunately, Lindley was dropped from Elektra/Asylum USA about this time, thus the record was not released in America. (It is available on W.E.A. International — my copy came from New Zealand.) Buy it if you can find it. While you're at it, buy me a spare copy, too. As far as I know, it's not available on CD.

Also sadly unavailable as a domestic release is David's solo album, *Mr. Dave*. Legendary for both its music and its incredibly tacky cover (Lindley has a fondness for mismatched polyester suits and gaudy Hawaiian shirts, as well as cheap "pawnshop-reject" electric guitars, the uglier the better), this record features mostly David's own songs, and it is a honey. There's a strong Fifties-style soul

influence on songs such as "Truly Do", "Follow Your Heart", and "Starting All Over Again". The overall feel of the album is gentle and romantically introspective. Contrasting these tracks are "Look Bad, Feel Better" (Lindley's fashion philosophy), featuring marvelous lyrical twists, and the schizoid "Hands Like A Man": the rhythm section churns on these two, with Lindley's saz and lap steel wailing like banshees. Players such as Billy Payne (Little Feat), Jorge Calderon (Warren Zevon, Ry Cooder, and El Rayo-X), and Danny Kortchmar (Joe Walsh, Jackson Browne, Eagles, etc.) pop up on the recording.

Sonically, this recording is somewhat less *natural* sounding than Lindley's previous releases, making imaginative use of wide stereo panning, synthesizers, drum machines, and various other studio effects. These work well in the context of the songs, in the same way studio trickery served the Beatles or Jimi Hendrix. Again, this one is only available through W.E.A. (Warner/Elektra/Asylum) International, my copy coming from Australia. I would kill to find another copy of this album (no CD is available, to the best of my knowledge).

Enter salvation in the cherubic form of Lindley's long-time friend, Linda Ronstadt, who used her not-inconsiderable clout to get El Rayo-X signed up with Elektra/Asylum again. The record company stipulated that Ronstadt must produce their next album. The result was the cleanly-recorded, good-timey album *Very Greasy*. This time, El Rayo-X resumed doing cover versions, but they're real gems. A far more understated record than *El Rayo-X* or *Win This Record*, it will probably take repeated listening to sink in. The tunes are mostly ska-flavored (ska is sort of a British pop/reggae hybrid), such as "Do Ya Wanna Dance" and "Papa Was A Rolling Stone", though there are also excursions into polka-tinged western swing ("Texas Tango", another Frizz Fuller tune) and classic soul ("I Just Can't Work No Longer"). Once again, Lindley takes other's songs and makes them *his, thoroughly his*.

David's cover of Warren Zevon's hit, "Werewolves of London", is totally different from the original, and provides the title of the album (a

reference to Lindley's very long hair). "A very serious song," says Lindley. "We all have a wolf and a lamb inside us, and we have to learn to make them live together." The recording's sound is somewhat less dynamic and more compressed than his earlier records, but there are no obvious unpleasant-tries (that's saying a lot these days). Again, I suggest you purchase the LP rather than the CD.

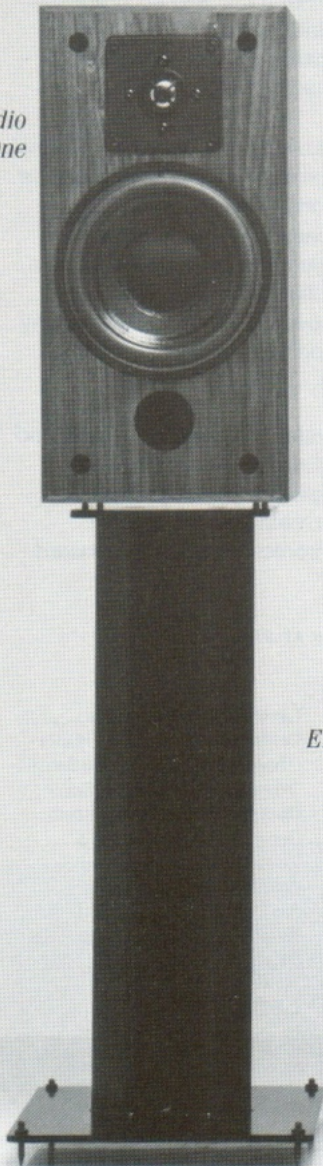
Well, there you have it; a highly condensed version of one of the longest stories in rock history. It's not over yet, either — Mr. Dave doesn't still for long. Keep your eyes and ears peeled for his live shows. More importantly, *buy his records*. One project I had high hopes for was a proposed solo album, with David playing only acoustic instruments, but this was vetoed due to poor sales of his previous releases. We can only hope one day he does record it. *Very Greasy* got rave reviews, but hasn't even cracked the Billboard charts. If it flops, it's likely Lindley will be relegated to doing session work just to survive. That would be a crime against humanity. ■



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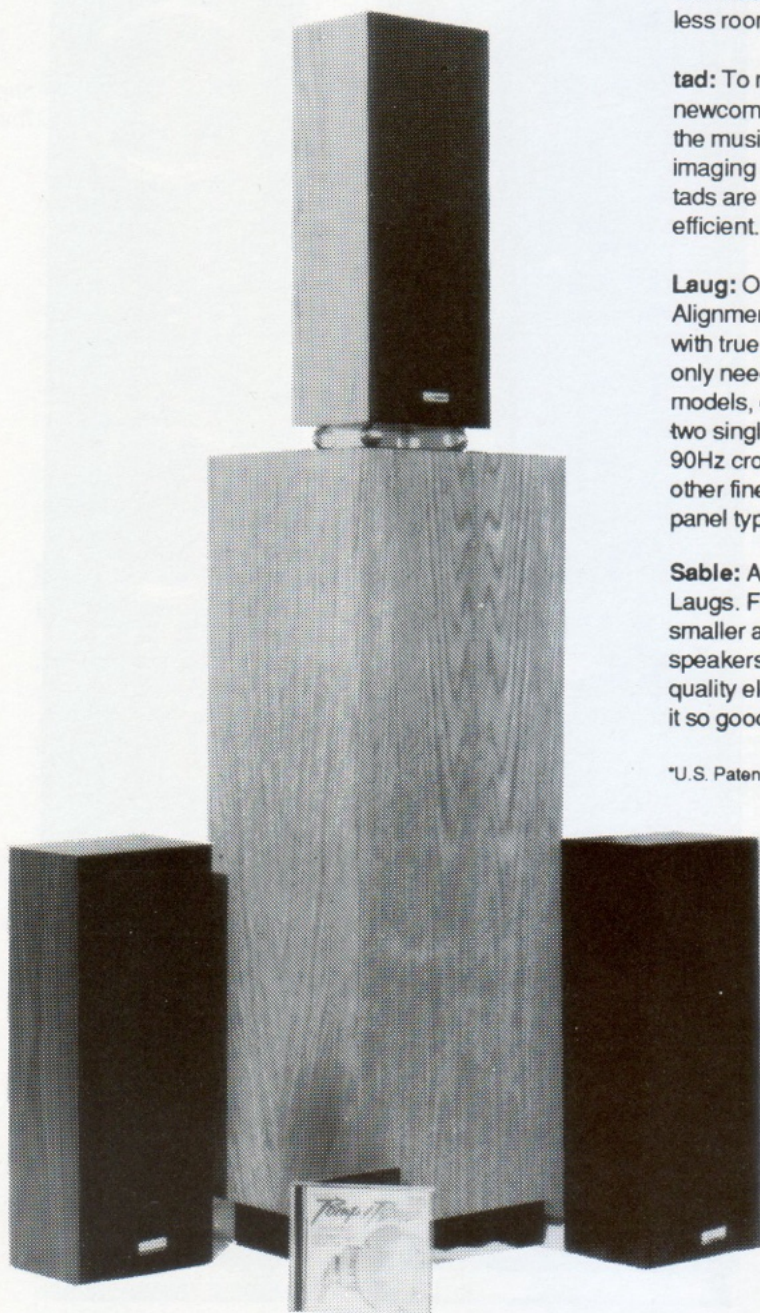
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**DEALER & REP INQUIRIES INVITED**

# More Music On Modest Money

By David Cooper

You, gentle Reader, have a right to know the qualifications of whoever it is who lays claim to your attention. I am, no more and no less, a subscriber to *Hi-Fi Heretic*. Like not a few of you, I am a lover of a wide variety and scope of music, who has been devoted to the enjoyment of *music* for more than thirty years. I lay no claim to any especial "authority" — beyond this love that I share with so many of you. In short, I am not a "professional audiophile", but a "devout" lover of music who has been invited to contribute to this magazine.

I offer you the following personal particulars. I am not a "professional audiophile", but am a "devout" lover of music who has been invited to contribute to this magazine. By vocation and avocation, I am a Presbyterian parish pastor, serving a medium-sized congregation in a seemingly mythical place — historic, rural, West-Central New Jersey. Have no fear, I shall do my best not to let this part of my identity impinge on your sensibilities (this is, after all, a heretical publication!). I live in a manse (pastor's home) that was my village's first general store, built circa 1803. This is only of importance to you, gentle Reader, in that the sound of my stereo system is affected by "this old house's" plaster on lath walls and oak hardwood floors. My listening room measures 18' 8" x 14' 4". My system is hardly state of the art (though I aspire to little better than what I possess, costs being what they are!). The cherished vinyl LP is rendered audible by the following components:

*AR EB-101 turntable, modified with three Tiptoes, reinforced base, and*

*Sota mat; Arcam P77 Mg cartridge; Monster Cable Interlink 4 tonearm interconnects; Superphon Revelation IIG preamplifier; Audioquest Livewire Quartz interconnects; Superphon DM220F power amplifier; 1962-vintage H.H. Scott LT-110 tube tuner; Teac A-2300 SD reel to reel tape recorder; Harman/Kardon TD392 cassette deck; Kimber Kable 4TC speaker cable; and 1971 vintage Bozak 302A loudspeakers on Tiptoes.*

My musical frame of reference is the live concert. I attend concerts on average four or five times a year, unless you include my enjoyment of a choir and double manual Fritsche pipe organ (played by a classically trained organist) every Sunday. My "ten milk crate" record collection has been 32 years in the making, and continues to grow. This collection spans the Mediaeval to 20th Century periods of classical music, is fairly comprehensive in "serious" jazz and the blues of 1920-1970, contains a good bit of traditional American, Celtic, and Slavic folk music, includes a basic representation of rock from 1960-1987, and even has a few "New Age" recordings. Like many of you, I possess so much material that is not available on Compact Disc, have so much invested in, and take so much pleasure from, the LP record that I am doctrinally committed to this medium.

Now to the subject of this offering: How to get More Music on Modest Money! I hope, in this and subsequent offerings, to share reflections on prized recordings of performances that have long granted me emotional and spiritual sustenance.

Despite all prophecies and auguries of the demise of the long playing record, and its double digit appreciation due to collectors, there is good news. The Used Record Store is a growing phenomenon across North America. I have had success finding musical treasures of every type beyond the New York and Los Angeles megalopolises. Used record stores are to be found in such locations as Tucson, Arizona; Jonesboro, Arkansas; and Princeton, New Jersey. The Yellow Pages of many large college town and city telephone directories will reveal many an oasis for the record buyer. Not a few of these shops

also specialize in new recordings and "cut outs".

I even know of two great sources for new records where truly expert advice on quality of performance and recording is available. David Hedges of the *Gramophone Shop* [2300 East 15th St., Tulsa, OK 74104, (918) 744-6049] keeps a library of record reviews that dates back at least to the 1960s, keeps three to five different first class recordings of any given classical work in stock, will give advice over the phone as well as in person, handles mail orders, and sells at a bit below list price — all with as much love for sharing music as making a profit. *Sam the Record Man* [347 Yonge St., Toronto, Ontario M5B 1S3, (519) 977-4650] is what Sam Goody in New York City was in 1964. This shop has separate departments for each type of music, with knowledgeable department managers and shop assistants (who are apparently U. of Toronto music majors), and local performers staffing the area of their personal speciality.

Surely, amongst you the readership, there must be a wealth of information about such wondrous places in your part of the continent. Why not share your knowledge by sending *HFH* your experience of like places in your area? My current record "gold mine" is the *Princeton Record Exchange* on Tulane St. (off Nassau) in Princeton, NJ, (609) 921-0881. If you live within one hundred miles of Princeton and have no other source of new, used, and cut out LPs records of every type (they also carry CDs), this is a worthwhile trip. By the way, note that many shops grade the quality of their used records, while others (like Princeton) have a five to ten day replacement or money back guarantee on both their new and used stock. I suggest you carefully inspect both sides of each record for defects before laying out that which is hard-earned and easily spent (caveat emptor!).

You, dear Reader, are now in possession of information and an approach for locating great music at prices well below the going rate for new LPs of diminishing musical veracity (not to mention CDs). Hopefully, my offering of the aforementioned reflections on some

beloved records will lead you to them and similar finds.

On to the music. I have arranged my classical records and tapes chronologically by period and alphabetically by composer. As I am a bit more than a bit of a "Classicist", I shall reflect on one recording from each of the classical periods, as my whimsey leads me.

## Mediaeval Period (c. 800-1450):

*Notre Dame in Paris, Perotinus Magnus/Rheims Cathedral, Guillaume de Machaut*, The Deller Consort and Mitglieder des Collegium Aureum. deutsche harmonia mundi 1C 065-99718.

This album, found in Tulsa, is neither "easy listening" nor "hard to take". Perotinus Magnus, who lived circa 1183-c. 1238, was one of the first composers of two-part polyphonic music. Put another way, here in Gothic church music, we can hear a hauntingly resonant and liquid musical departure from the single-melodic monophonic style of the Gregorian Chant. In these two organa quadrupla as two Graduals and the Mors clausula, the use of a cantus firmus and dance-like triple rhythms of upper voices are to be found. This is music best characterized as fluid, shimmering, ancient and yet timeless. This is the music of the Church in the time of Richard the Lionhearted, of the third and fourth crusades, and of the Gothic cathedrals. In its very antiquity is something strikingly modern. Side Two is devoted to "Messe de Notre Dame", a four part ordinary by Guillaume de Machaut (c. 1300-1377). This mass is the most famous musical composition of the Fourteenth Century. Machaut "perfected" four-part polyphony, filling it with spacious dimensions. His work is intentionally shaped as a musical whole. The singing of the Deller Consort together with the Collegium Aureum breathes life and character into what is generally disregarded as being the "stuff of musicologists and church historians". Two stunning performances are contained in this fine piece of recording magic.

## The Renaissance Period (c. 1450-1600):

*Golden Dance Hits of 1600*, Ulsamer Collegium (cuts 1-3 and 17-19);

Collegium Terpsichore (cuts 5-9); Siegfried Behrend, guitar, and Siegfried Fink, percussion (cuts 10-15). Archiv Produktion 2533 184.

This anthology of Renaissance dance music is a joyous romp! I have known haters of all things classical and/or "ancient" to be infected by the desire to jig, galliard, saltarello, spagnoletta, and Welscher Tanz — while having no idea what those dances are. The gold foil-covered album jacket and "trick" title belie a joyful celebration that leaves many a listener with more than a latent desire to draw the curtains and forget being staid and seemly.

## The Baroque Period (c. 1600-1750):

*The Baroque Oboe*, Harold Gomberg, oboe; the Columbia Chamber Orchestra with the Gomberg Baroque Ensemble, Seiji Ozawa, conductor, with harpsichord realizations by Igor Kipnis. Columbia MS 6832.

I have been wearing the grooves of this Columbia "360 Sound" stereo album towards the obverse side on every turntable I have owned since buying it while in college in 1966. Gomberg, known as principal oboist of the New York Philharmonic and a member of the teaching staff of the Julliard School of Music, does wonderful things to concerti by Telemann and Vivaldi, and sonatas by Telemann and Handel. This is Baroque music that speaks to the heart, the mind, and to one's inner being. The "360 Sound" suffered from some excessive channel separation, and yet this recording works wonderfully. Gomberg plays with grace, marvelous detail, sensitivity and intuition which seems to infectiously transport all of his colleagues on this album. Seiji Ozawa, then just coming into his own, shows depth and understanding. Igor Kipnis and the rest of the participants make this a treasured experience.

## The Classical Period (1750-1810):

Wolfgang Amadeus Mozart's *Symphonies Nos. 21-41*, the Concertgebouw Orchestra of Amsterdam, conducted by Josef Krips. Philips 6500 525-6500 529 and Philips 6500 429, -430 and -466.

Many like to denigrate Philips' sound, but for me, this is the definitive

Mozart Symphonies series. Krips got into the mind, heart, and soul of Mozart — and then communicated this holistic awareness to a world-class orchestra.

The quality of these recordings is very hard to fault. The recording engineers truly convey the depth and breadth of the great hall of the Concertgebouw of Amsterdam, with traditional microphone placements that take little from the distinctive Concertgebouw sound. With all of this depth, detail, and richness, one element is (thankfully) missing — that frequently commented upon Concertgebouw "echo"! There are many other Mozart interpreters whom I cherish. This series is my first love, and I believe you will find these recordings satisfying in every way.

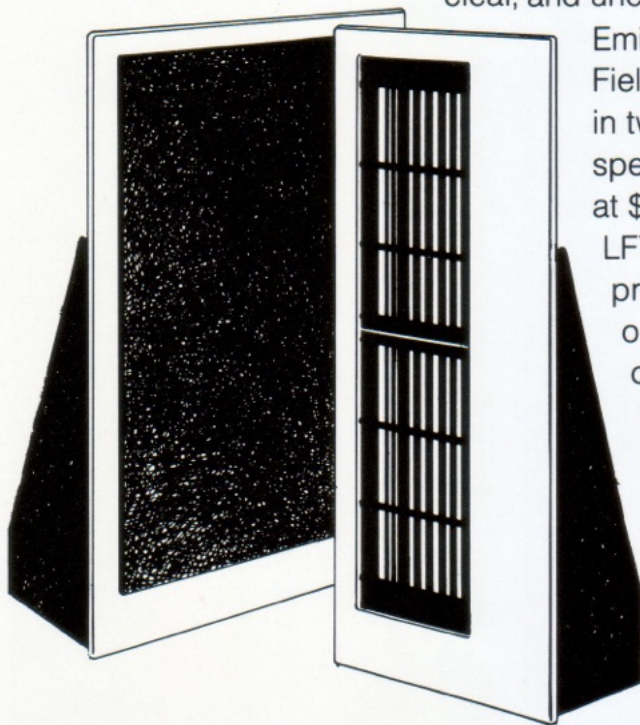
You have now "waded through" reflections on representatives of what some call "the Old Music". Beethoven is often cited as the father of "Modern Music". In future articles I propose to alternate my reflections between the Old Music and the New Music, with the Periods represented as follows: Classical-Romantic Transition, Romantic, Post-Romantic, and Twentieth Century. A third step may be to offer some thoughts on great performances and recordings of Ragtime, Jazz, and the Blues. If so, you may well find reviews of recordings from 1920-1940 that have been transcribed to LP from 78 rpm discs.

There is small chance that we shall ever be bereft of material for consideration, in light of the diversity of music that has, over the past nearly one thousand years, expressed the inner being of humanity in countless cultures.

Until the next time, good searching and listening. ■

# Plainer Magnetic

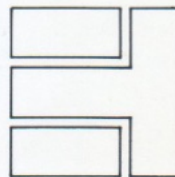
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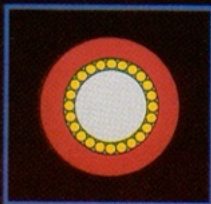
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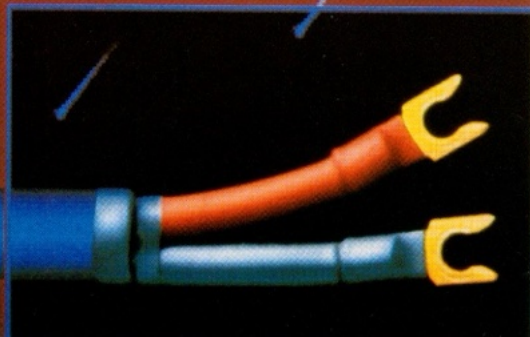
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## CASTLE

Thank you for the opportunity to reply to the review of the Castle Warwick loudspeaker.

I generally agree with your comments, and your observations regarding build quality and technical aspects of the design are excellent. In designing the Warwick, our objective was to produce a speaker which would work satisfactorily with virtually any "budget" system. I believe we have succeeded in this by producing a warm, smooth "musical" loudspeaker. I have found that the Castle speakers generally perform better on single-pillar metal stands. Auditioning the Warwick on such a type of stand should answer some of your criticisms.

I agree that the Rogers LS2a is a fine speaker, but given of its best with more expensive systems. To satisfy your comments regarding detail and involvement with the music, our more expensive Castle Durham (\$575) should definitely be auditioned.

Regards,

**Geoff Lewis**  
Sales Manager  
Castle Acoustics

## QED

This is the second time I have been asked to comment on a review in *Hi-Fi Heretic*, and I find myself in the same position as before, with not much to add.

The only error is that you credit me with the actual design of the circuitry, and this is not the case. The man responsible for the design is Graham Theakston. It was actually with Graham that I formulated the design philosophy so accurately explained in your review. I think that the outcome of the review speaks for itself, and fully justifies our decision to "go discrete", albeit resulting in a small price premium compared to the other integrated amplifiers to which you refer.

One other aspect of the Series II A240s that is unusual is that they can be used as a preamplifier, thus permitting an upgrade in the form of an add-on power amplifier. A suitable QED power amplifier will be available in October of this year.

Kind regards,

**Bob Abraham**  
Managing Director  
QED Audio Products Ltd.

## BELLES

Thank you for your favorable and accurate review of the Belles 150 power amplifier. We too feel the Belles 150 to be "an exceptional value for the money...". We have tried to offer the the accuracy and detail found in much higher-priced components, in a simpler package. We believe our efforts to be successful.

We agree that the Belles 150 is highly "detailed and accurate", with "exceptional attack and dynamics". Through listening tests of our own, and through both dealer and consumer feedback, we have received similar compliments. In all our components we strive for neutrality in sound reproduction; getting out exactly what is put in. You obviously found this to be the case when you noticed variations in reproduction when

changing from one preamplifier to another. Proof that you get out whatever you put in, the mark of true neutrality in a power amplifier.

With regard to the tonal balance of the 150, you are the first to make such an observation. We appreciate the constructive criticism, but are a bit confused as to your meaning. You comment that the Belles delivers "sheer 'you are there' detail and presence", which is the mark on an accurate amplifier, yet you state that you have some reservations concerning tonal balance? Again, we would state that what is put into the Belles 150 is what you get out. If any of the other components in the system tend towards brightness, then the Belles 150 will reproduce brightness. If they tend toward a warmer, fuller midrange, that is what will be heard. Sometimes accuracy has its price. It puts a strain on the other components in the system to perform up to high-fidelity standards. As you correctly noted, system compatibility is very important.

**David E. Belles**  
President  
Belles Research Corp.

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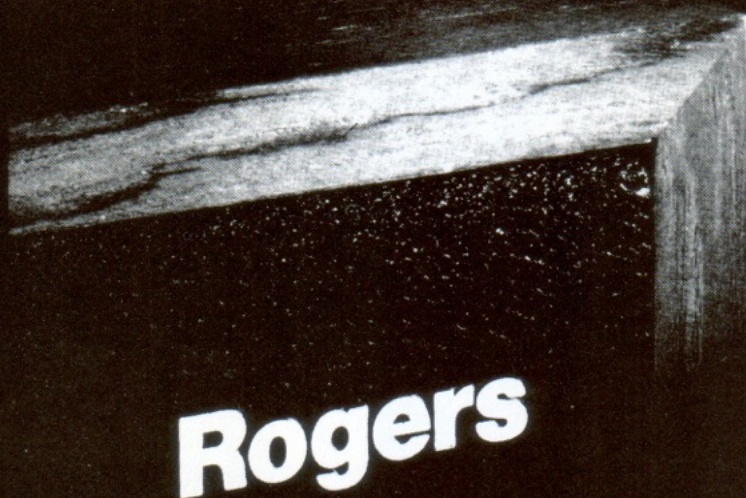


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