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NOVEMBER 1989

VOL. 12 NO. 11

COMING ATTRACTIONS

My wife Laura and I spent the third weekend in September at the second annual Southwest Audio Show, promoted by Dallas high-end dealer Preston Trail Audio. I tip my hat to Del, Kurt, and Colleen Hayes for putting on a well-organized and most enjoyable event. It was good to meet so many keen and keen-eared audiophiles and talk about sound and music—except that one topic kept rearing its ugly head: "What happened to the promised equipment report index?," I kept hearing.

Well, I guess I owe y'all—three days in Texas and that's what happens—an apology. For some months I have been including a mention in "Coming Attractions" that the "next" issue of *Stereophile* will include an index to all the components reviewed by the magazine, updated since its last appearance (in Vol.11 No.7, July 1988) to include everything dating back to the very first issue, Vol.1 No.1, which appeared in 1962. However, as I have to write this page's copy *before* the contents of the next issue are actually finalized, my predictions can be confounded by such matters as having too much copy on hand for the next issue. Something inevitably is left out, and the long-prom-

ised index has been the optimum candidate.

But no more! It *will* appear in our December issue. I promise. But just in case, I have made arrangements with computer bulletin board The Audiophile Network—(818) 988-0452—that their subscribers will be able to access it via telephone.

This is where I usually list next month's component reviews, but in view of the murkiness of my crystal ball, I shall just say that currently we are working on reviews of amplifiers and preamplifiers from Counterpoint, Mark Levinson, Vendetta Research, Classé, Krell, Carver, PSE, Adcom, Forté, Music Reference, NAD, and PS Audio; loudspeakers from TDL, Rogers, Amrita, Monitor Audio, Paradigm, Carver, and Apogee; and source components from Wadia, JVC, VPI, Clearaudio, AudioQuest, and Monster Cable. Some *will* be in the December issue.

We all hope you enjoy reading *Stereophile*. But remember, the easiest and cheapest way to read *Stereophile* regularly is to subscribe. Turn to p.110, fill out the form, send it off, and sit back to wait for the biggest, best-written, most informative, and not forgetting most entertaining high-end magazine to arrive in your mailbox at the start of every month.

—John Atkinson

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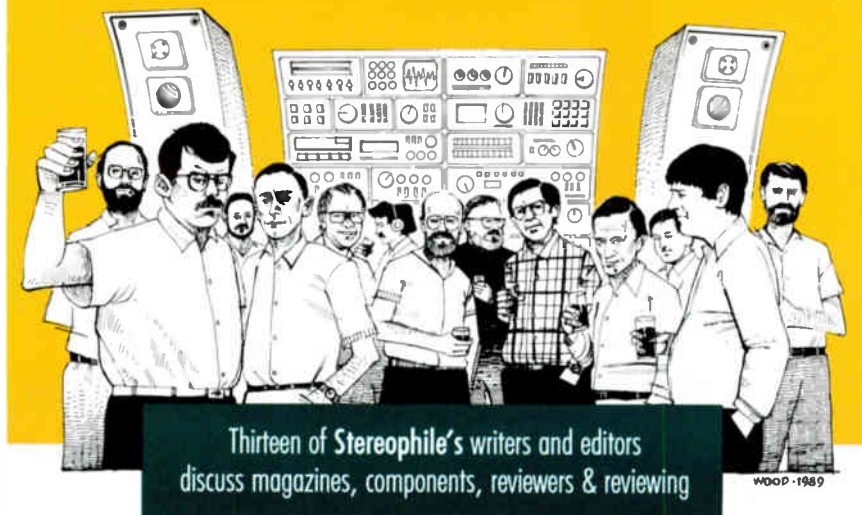
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AS WE ALL SEE IT

A BABEL, A BABBLE...



Thirteen of *Stereophile's* writers and editors discuss magazines, components, reviewers & reviewing

Twice a year, *Stereophile* brings some of its writers out to Santa Fe, New Mexico, to discuss the compilation of the magazine's "Recommended Components" listing, the most recent of which appeared in the October issue. Following a comment from Will Hammond, John Atkinson's collaborator on the recent amplifier blind listening tests, that the magazine's readers would love to eavesdrop on the conversations that take place on these

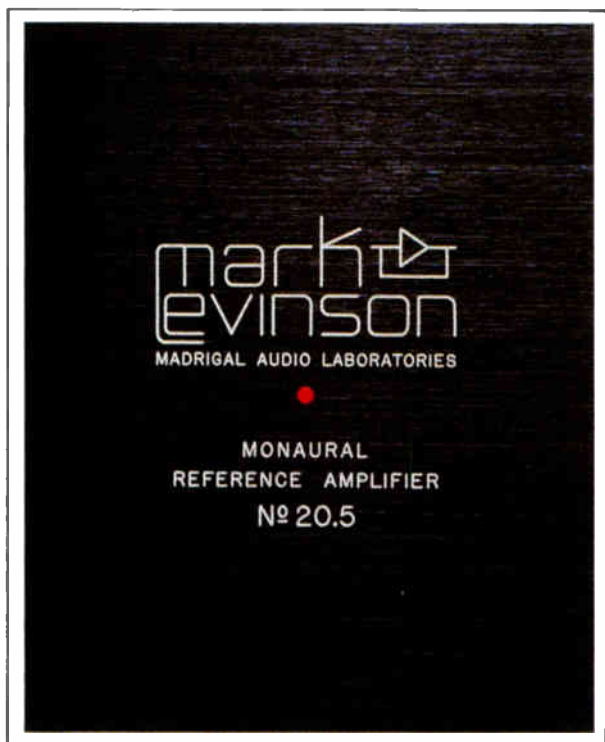
occasions, it seemed a good idea to tape¹ some of the discussions and publish the transcript as this month's "As We See It."² Accordingly (see drawing, l-r), Lewis Lipnick, Gary A. Galo, Robert Harley, Thomas J. Norton, Guy Lemcoe, Richard Lehnert, Dick Olsber, Peter Mitchell, Robert Deutsch, J. Gordon Holt, Larry Greenbill, John Atkinson, and Arnis Balgalvis all gathered in LA's palatial listening room one August Saturday. JA set the ball rolling by asking the assembled writers where they thought *Stereophile* had been, where it was, and where they thought it should be going, particularly in view of Robert Harley joining the magazine as Technical Editor:

J. Gordon Holt: *Stereophile* is obviously in the driver's seat as far as high-end audio is concerned. As to where it's going, I'm not at all certain about that. I think the magazine ought to be exercising a little more leadership in the field rather than just taking the role of reporting what's going on—reporting every view that comes in without comment. It ought to be taking editorial stands on things. For instance, say-

1 The recording was made in stereo using a pair of AKG D190E cardioid mics, an EAR tube microphone preamplifier, and the Nakamichi 1000 R-DAT recorder reviewed by Robert Harley elsewhere in this issue. Our thanks to Anne Peacocke for tackling the thankless task of transcribing the tape.

2 A note on the editing of the transcript: I conformed to *Stereophile's* usual style with interviews, which is to remove the "ums," "ers," and "you knows"—all the verbal throat-clearing and thinking-time noise that generally clutters and obscures spoken English—and to excise the occasional repetition and irrelevance. I did this both in order to bring the length of the transcript down to a publishable length and to improve its intelligibility. Significant omissions (in terms of length) are indicated with ellipses (...), and where something was not clear, the editorial interjection is contained in square brackets. Apart from such slight massaging, I guarantee that this transcript is a true reflection of what was said by the participants.

—JA



ENGRAVING — January 1989

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ing "We approve of this; we disapprove of this." If there is such a thing as magazine policy on some things, you [JA] should be making these statements. In "As We See It."

Peter Mitchell: I think *Stereophile* has always had a unique position in that there are two categories of magazines around it. You have the mainstream magazines which are devoted to measurements and not adequately to sound, and then you have the high-end magazines like *The Absolute Sound*, where the reviewers talk about what they hear and then speculate incompetently on what might cause what they hear. At *Stereophile*, at least, the discussions of what you hear have generally been accompanied by a technically competent commentary, where there has been any. There has been no outrageous mythmaking. And I am overjoyed at the new venture that *Stereophile* is launching, essentially to really try to start nailing down some of the correlations between measurements and subjective sound. I think this is an area where *Stereophile's* leadership will really make it *the* important magazine in the field in the next decade.

John Atkinson: But something that a writer who isn't here, Sam Tellig, said to me a couple weeks back, should be borne in mind. "Too many graphs!" he thundered. Is this aspect of the magazine driving some readers away?

Thomas J. Norton: I think some of our readers may take that attitude. They don't want it to become *Audio*—not that I think it ever will. But this is a perception you get when you see a lot of graphs in a magazine without reading the text. We do have to be very careful in that direction.

Lewis Lipnick: This is interesting. Now, I probably come to things from a slightly different viewpoint from a lot of writers because I try to remain, as far as possible, totally subjective. However, I agree with the objective point of view also because while you can say, "I hear this, I hear that," the reader then can say "Well, yeah, but you've got to qualify that a little bit." I know a couple of reviews that I've done, where I heard some problem which was then correlated objectively. Now you might turn off some people, but you can't try to be something for everyone. It doesn't work that way. No matter what you do, someone's going to bitch. And if they're gonna bitch, let 'em bitch.

JGH: I wonder whether we should compartmentalize the magazine a little bit more. Maybe

"Too many graphs!"

the main review section would be mostly subjective and so forth and so on, and then there'd be a technical section further in the back, for people who want to pursue the reviews in greater depth. In the main report, you would say, "For instance, the harmonic distortion analysis would suggest that so and so." But you don't have to show the curves there. You just refer to them and give the information later on in a separate section which covers *all* the tests.

Richard Lehnert: That's sort of been happening within each review. What Robert Harley's been doing is to add a closing paragraph of measurements after the main body of the review.

JGH: But the thing is, if you leaf through the review section the way it is now, you see. . .

RL: . . . the graphs. . .

JGH: . . . all the way through it. And as Tom said, I have the feeling that's probably turning off some people.

PM: One of the problems of presenting technical information, especially in graphical form, is that graphs have a way of taking up a lot of space for the amount of information that they convey. So if you look at a review in which the text is 80% subjective and 20% technical analysis, by the time you also print the graphs on the same three or four pages, it looks like a very technically dominant review, a graph-dominated review. Although I would personally prefer to have the technical information integrated into the review with the graphs on the same pages, I have a very strong feeling that a great many of our readers did badly in high-school science and feel very incompetent and nervous about anything like graphs or tables or numbers. I think that including the graphs, etc., in the same pages as the rest of the text tends to scare them away. It will be a real inhibitor from really appreciating what the bulk of the text says.

I would strongly urge you think of the possibility of organizing the review as a sort of a three-part thing. You've got the subjective text, with the technical analysis integrated into it where appropriate, making references to the graphs. The second part of the review, later in the magazine, has all the graphical and numerical analysis for all the products in one section. You could call that "Analysis and Correlation," where you do the science basically, where you investigate the relationship of the measure-



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ments to the sound. Then, of course, you already have a third section, the manufacturer's responses—which I find an important part of the review.

Arnis Balgalvis: It's occurred to me that high-end audio is very much like high-performance cars. When I've had discussions with Larry Klein³ (who happens to be a personal friend), we're diametrically opposed in what we think about high-end equipment because he thinks it's a waste of money. However, I always introduce the fact that car magazines do not hesitate to write about Ferraris, Lamborghinis, etc. Their format is also similar to what Peter is talking about, the technical analysis of the car appears in a separate section, and yes, there are some references made to it, for example that something happened in a particular way when the car was accelerated. I was just thinking maybe that Bob Harley could have a sidebar type of a thing and say "Here is what I measured and so on . . .," and converse with a particular reviewer, maybe saying, "Well, what do you think? When you heard this particular thing, could it be because of the *x* factor that I measured?" And so on. But the more I think about it, the technical section would have to be put in a place that people could really skip over. Many people like to hear the words and they're willing to read about it, but if they have to look at graphs—graphs are really intimidating.

[Several minutes of discussion on the more arcane mechanical aspects of magazine production followed.]

LL: Maybe you should put something in the magazine asking the readers what they would like.

JGH: I think that's a good idea.

JA: Apart from intimidating readers with graphs, by trying to introduce some kind of objective support for subjective opinions are we in danger of demystifying the subject? Of taking the romance out?

Dick Olsher: There is a danger, and I think the keyword here is "fun." F-U-N. The magazine should be fun to read. Granted, you want to offer music reviews, equipment reviews, opinions—but we can't lose sight of the fact that the magazine has to remain entertaining. We have to communicate enthusiasm. I think that's why

I have never believed in the astrological approach to audio equipment reviewing.

I started reading *Stereophile*. It was a process of self-discovery: discovering the fact that you can reproduce music fairly realistically in the home. And as you buy better equipment, try different things, the level of reproduction increases. It's an odyssey too: "Can you really achieve a semblance of live music in the home?"

JGH: Why should there be any concern about "demystifying" it? Why is mystery even considered to be an asset to the magazine?

DO: Because there's magic here. . . [Uproar]

JGH: That's a legitimate criticism that a lot of people have of our field. There's too much magic.

DO: But it *is* magical!

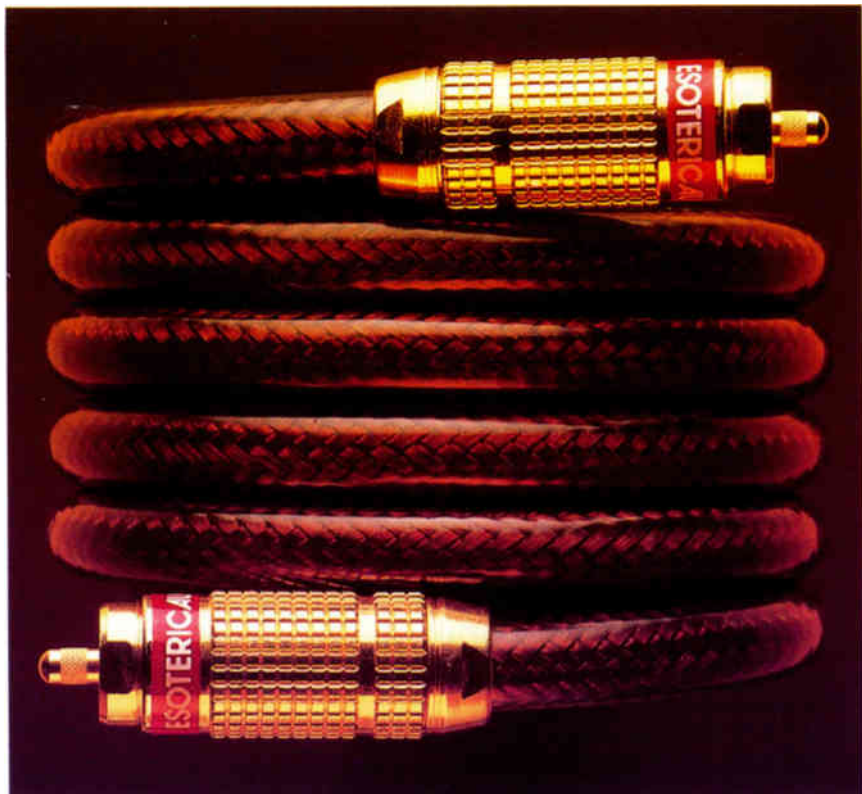
Gary A. Galo: I agree with Peter. I have never believed in the astrological approach to audio equipment reviewing. There may even be a magazine out there that does things like that, but I think that the great strength of *Stereophile* is that it has stood on the fence between the *Stereo Review* measurements crowd and the mystics on Long Island. And pulled the best from both worlds. I think that demystification has been one of the magazine's great strengths and I think that we should *never* steer away from that.

JGH: I agree.

PM: All the way back to the very beginning of *Stereophile*, when Gordon was doing the whole job in his living room, there's been a hard core of common sense in the magazine that we don't want to lose.

GAG: The big difference [between *Stereophile* and *The Absolute Sound*] is that Gordon, unlike Harry Pearson, had a really solid technical background and could speak to these things with expertise. Harry had no technical background to speak of, and would get very defensive when pressed on these issues. As far as the future is concerned, I think where *Stereophile* is going, incorporating measurements into reviews, is really a step in the right direction. I would not like to see the technical aspects devoted to a separate section of the magazine. I think there are a lot of readers who would ignore that section of the magazine completely. By bringing the technical aspects into the body

³ For many years Technical Editor of *Stereo Review*, and then, until its demise, a Contributing Editor for *High Fidelity* magazine.



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of each review, I think we're encouraging people to pursue it a little bit farther, to see both sides. To educate themselves.

JGH: The only problem here, as I see it, with mixing these together, is the fact that it becomes very difficult to decide, when you're writing the review, *who* you're talking to. If you're trying to address the relative newcomer—you won't even say the "average" audiophile—you have to pause and explain a lot of the terminology which you use as you go along or you'll lose them.

DO: Give 'em a copy of your glossary.

JGH: It doesn't exist yet.⁴

TJN: The technical results are going to have to be separate from the main body of the text for most of us anyway because the measurements are going to be done here in Santa Fe. There's no way we can mesh these two together.

AB: I'm glad you brought that up—there are three writers here who used to work with *High-Performance Review*.⁵ I have to confess that whenever I had to do the technical section of a review, it was just a tedious thing. The graphs were there, and you tried to put them into in words, which was kind of nice. But I never felt that it was really contributing anything.

GAG: I share Arnie's frustration with what we had to do for *High-Performance Review*. We were sent a bunch of data from their lab and we had to write it into our review. It was a *very* difficult thing to do. And it was less than satisfactory.

AB: But if the person who did the measurements would then try to explain what's going on, and then maybe converse with the particular reviewer of the product, it would be more effective. I have to say that a lot of *Stereophile's* reviews are already structured in a format where you can skip around the technical discussion, either to the conclusion or to read the introduction or the description of the product. . . . [agreement] . . . But I do think that it is important to stick some technical reasoning behind what is being heard. It has probably something to do with the fact that I have an engineering background. I have a little bit of a vested interest in that, yes, we hear certain

things which we can't explain today, but I should certainly hope that in a few years we can go ahead and say, "It sounds this way because of this particular measurement."

Robert Deusch: I agree with Arnie in that I sense that the majority of readers do not read an individual report from beginning to end. They have a look at what the product is, to see whether they're interested in it. They read the introduction, and I think they *do* skip past the technical part. They read the conclusion: "Does this person like the product?" And if the reviewer does *and* they're interested in it, then they might read part of the technical stuff and look at some of the graphs. If the reviewer basically doesn't like the product, if he says, "Well, technically the product seems competent. However, I have some reservations about its sound," then the reader won't bother going back to the technical part unless it's for the sake of interest.

JGH: I have had the feeling from time to time, and right now I think I'm having it again, that a lot of the body of our equipment reviews is aimed not at the readers, but at manufacturers.

LL: I don't know if I agree with that completely, but there's something I think we have to keep in mind. We're in sort of an ivory tower, we deal with manufacturers and we talk among ourselves. But we have to put ourselves in the boat of someone who doesn't have a chance to do all this, who's just a poor consumer who reads this stuff and wants to spend money and buy equipment. They don't know from nothing, basically. When people read a review, they want to find out, basically, *what something sounds like!* When they read a review, they want to find out what the guy likes or doesn't like. When people read the mass-market magazines, they say, "When I finish reading the review of a product in a typical blah-blah-blah magazine, I don't know what it sounds like." When I finish reading a review, *anyone's* review, if I finish that review and I say to myself, "Gee, I really don't know what it sounds like," it's *not* a good review. . . . [bubblu] . . . The technical aspects are important. You can discuss technical stuff all day long! But technical stuff does *not* explain how it sounds. You've got to at least tell the readers what it *sounds like*. Because they're buying something to reproduce music.

JA: You have a hierarchy here. You have the conclusion: "Did the reviewer like it or not?" You have the sound: "What did it sound like?"

⁴ Gordon is at present working on a glossary of both the language of subjective reviewing and hi-fi terminology in general.

⁵ Arnis Bאלgalvis, Larry Greenhill, and Gary A. Galo.

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I think the main function of measurements in the magazine has been to lend some credence to the reviewer's observations.

Why didn't he like it, or *why* did he like it?" Then some measurements that say: "Well, maybe this was why it sounded like that." Then, perhaps at the very bottom, you have the product description: how many knobs, where they are, whether the power button is marked "On" or "Power". . . You could say about *Stereo Review* that they turn that hierarchy upside-down.

LL: Exactly. But if the review does not tell the reader when they're finished what this product sounds like, it is *not* a good review. Period. I mean, it just isn't. Because again, when you talk about high-end audio you're talking about the minute nuances and finesse of high-performance audio. We're not just talking about another appliance that you're buying for your home. And we lose sight of that, I think.

JA: The fact that you said "minute nuances and finesse" reminds me of something. One of the things that came out of our listening tests at the show in April was that maybe some of the differences we describe in great detail *are* quite small to a lot of people.

PM: Well, well, absolutely.

AB: That's very true, in many cases the nuances *are* subtle. Maybe they're very important to us, but what Lew is saying is also my feeling: yes, you have to describe what the product sounds like. But you have to describe what the feel of the equipment is, let's say the difference between a Mark Levinson product and a Krell. Because people are going to go out there and they're going to spend thousands of dollars. I feel that you have to somehow convey a feel for what they're going to get for that money *in addition* to the sound.

JGH: I have the feeling, though, that these things that we call "minute differences," anyone who is into audio at all, anyone who listens, *can* hear these things. And probably hear them quite well. The difference, as I see it, between an experienced reviewer and a consumer is that we're able to pick up on these things faster. . .

AB: . . . and describe them.

JGH: But if the person buys the thing, and lives with it, he'll come to hear the same stuff that we're reporting.

JA: And then it *will* be important to him or her.

DO: I'd just like to summarize what I think I hear, and that is that opinions should remain dominant over measurement in the magazine. Measurement *is* important, it provides a con-

text for assessing the merits of the product, but ultimately it's the opinion that counts.

JGH: But if there's a continuing conflict between the measurements and the opinions?

DO: Then let's change the measurements that are done. Your opinion shouldn't change.

GAG: I agree with Lew that what the product *sounds* like is most important. How I see the measurements is helping both the reviewer and the reader understand *why* the product sounds the way it does.

JGH: But I don't think most of our readers give a damn as to "why." *Other manufacturers* do.

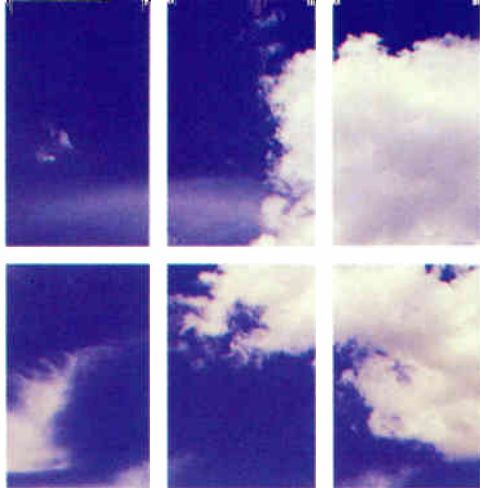
LL: You have a responsibility to *explain* your findings. The technical stuff obviously has to back up the subjective description.

JGH: I think the main function of measurements in the magazine has been to lend some credence to the reviewer's observations.

JA: Particularly when it's overall a negative review, to help hold any response from the manufacturer down. . .

Larry Greenhill: I'd just like to talk about where I think some of these points are headed overall. One of the strongest points in terms of *Stereophile* over the years has been that it's one of the few consumer-oriented magazines that deals with the consumer as a purchaser of very expensive investment. If you look all over the field of things you can purchase, such as photographic equipment, computer equipment, or high-end stereo equipment, a lot of what the consumer is left with is magazines that take a point of view that they want to explain the product to the consumer and so be another voice for the manufacturer. From the beginning, *Stereophile* has really not taken that direction.

And I would say it's had kind of another principle behind it, which has been a somewhat laid-back, noninterfering editorial policy. That is, the editor is supportive of the writers. It's encouraged individuality. I've worked for a number of magazines where you were given a cookie-cutter kind of a template—your review has to go A-B-C-D—and if it doesn't quite fit the style or the approach, then you run into a lot of friction with the editor. This is very



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important because what's happening now in this discussion is a question about whether more uniformity should be slowly introduced into the reviews. There are some really good reasons for that, in terms of trying to make something you read from one reviewer make sense in terms of another reviewer. I'd be very interested to hear how much this discussion is going in the direction of kind of formulating editorial policy about how the reviewers should think about their craft.

LL: Just as one writer, I'd like to say it's so nice to be able to write a review, submit it, and know that what comes out the other end is what I wrote. And if I was wrong technically, thank goodness they have people here who will correct me. But I don't know another publication like that where I could send something in that's so subjective and it would just be left alone.

JGH: *National Review*.

LL: I think that's very important. Because that other magazine, I know that if you don't toe the party line, either they won't print what you wrote, or you'll be ridiculed by the editor, in your own review. . . .

GAG: . . . in a footnote. . . .

LL: . . . which I find totally unacceptable.

JGH: I agree.

JA: A criticism of *Stereophile* that was made in *The Absolute Sound* a couple of issues back, and was then also made in a letter published in our September issue, is that whereas *The Absolute Sound* speaks with a single voice—Harry Pearson's—we produce a Babel of disparate opinions. We don't speak with one voice; we don't have one mind. I actually think this is a specious criticism because I think the one thing that has drawn us together is that we all basically come from the same place philosophically. Nevertheless, how do we avoid this?
RL: Why should we avoid it? It's a magazine of opinion.

JA: How can we weld disparate opinions into a strong united front?

RL: Why should we try? [*bubblub*]

PM: That's part of the question.

JA: You see, as an editor, my policy is simple. All I want from my writers is: a) Is this a well-formed and informed opinion? b) Has it been expressed clearly? If both are the case, it appears in print. I don't want to impose my viewpoint upon anyone else because, as you know, my particular cocktail of tastes and opinions is going to be different to anyone else's. I

certainly do not want to restrict *Stereophile's* viewpoint just to what I think. But now I see this policy actually being turned into a criticism against the magazine.

JGH: Well the thing is, when I was talking about leadership a while ago, about the magazine maybe leading the issues a little bit more, I wasn't talking about trying to force the writers into any kind of editorial mold. What I was talking about was perhaps keeping more in mind the things which are generally agreed to by everybody who is serious about this business. And pushing this stuff in the magazine all the time.

Look, for instance, at the number of times that practically every reviewer who has reviewed a turntable puts it down because it hasn't done the suspension thing properly. Yet we continue to get turntables for review from people who obviously none of this has penetrated. I mean, they should know they're going to get a bad review from reading all of the other reviews which have picked things apart for that reason, yet they'll then send us product for review which has the same problem.

TJN: They don't read our reviews then.

RL: Also they believe that there is no such thing as bad publicity.

JGH: Well, maybe. But this is one of the reasons why I feel we're not making our point in some areas here. I mean, look at that speaker system that Dick reviewed a while ago. Kentucky Sound? Was that the name?

DO: *Tennessee Sound!* [*laughter*]

JGH: Well, I'm close! Anyway, the thing was obviously flawed before we even listened to the sound. We pointed out to the manufacturer obvious signs of very bad design. He still insisted that we go ahead and review it.

DO: Did he ever!

LL: May I make a point about the uniformity in reviews? Talk about the criticism you're getting about not having a uniform voice, the interesting thing I see about *Stereophile* (which is also one reason I like writing for this magazine very much) is that we have amassed a fairly large number of people who are very good at what they do in different ways. In other words, everyone's got a little different expertise: you have people who are more technically oriented; you have me who's just basically "I'm not an engineer at all but I'm a musician"; there are people who do this, do that; and that way you get diverse points of view which are all valid.

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There's an emotional impact to buying components. . . This is a religious rite, going out and buying this stuff.

That's very important. Because if you start imposing this sort of generic approach on everything, you're going to get one person's opinion basically coming out of it. One editorial opinion. Which is not right. If you have people who are competent—and I believe that this magazine has the most competent writers I've yet seen—then it works. "If it ain't broke, don't fix it."

Remember, we're talking about subjective things, we're talking about the emotional impact of buying equipment. People buy the stuff, not only just to listen to music, they buy it because it's emotionally impactful on them, it's an ego thing for them to buy stuff. With manufacturers, it's an ego thing for them to build it. When I write about a piece, I talk about the emotional impact of being a musician. The hell with the way it's made, as far as I'm concerned. If I can sit there and I'm really drawn into a performance, it's great.

JGH: You're talking about the emotional impact of the sound.

LL: Of the sound, but there's also an emotional impact to buying components. . . Let's face it, that's not peanuts. This is a religious rite, going out and buying this stuff, you know. The actual spending of the money is a big deal. And if you start doing this one-voice kind of thing you're talking about, I think you'll lose a lot of that.

JGH: At shows I've had a number of people come up to me and say, "Why don't you people work together on each review, so you can come up with a consensus?" And I said, "Well, for one thing, it would probably take us six months to get a review done, and for another thing I don't think our readers want a consensus." And then the guy says, "I do."

DO: I want to get back to this myriad of opinions: I think the more opinions, the more insight. Different people being able to kick products around from different angles, in different systems, fleshes out what the products can and can't do. The fact that there's disagreement is healthy. I mean, you can go to the Pope of Seacliff—HP—or the Axeman of Bronx—Peter Aczel—or, I haven't come up with a good name for Moncrieff, you don't need it, it's absolute crap. It's one man's opinion in a very narrow context. If a number of opinions all converge to say "This is a great product in all kinds of environments," you have a clear winner. But if you have a difference of opinion, why, I think that's just as intriguing as agree-

ment. Disagreement is what horse races are all about. It's very important to keep it that way.

JGH: Well, I don't think there's any question but what if we did do group reviews and could come to a consensus about things, a review would have a hell of a lot more credibility.

TJN: Awfully difficult to do.

PM: There are practical ways to do it. . .

JA: The problem is, though, when we *have* sent some components to other writers, we often found there was almost *no* diversity of opinion. The second or the third person to listen to the piece of equipment actually has nothing to add to the original review but has spent a lot of time listening. . .

PM: I should think hearing speakers in a different room would be very illuminating. . .

LL: . . . it'd be nice to be able to send products around. You say people will basically agree on certain things, and I think you're right, but. . .

JA: They will agree over the description of the sound; the only disagreement will be whether this flaw rules it out of court for any recommendation, or whether this flaw is trivial. However, they will agree that there is a flaw in that place, in that manner.

LL: But John, we have something here like a bunch of physicians who are specialists. A patient's sick and he goes to see a physician, and gets farmed out to other people who are all specialists. They get together later and talk about it. Now true, I'm talking about a sick patient, but what we've got I think could be interesting. For instance, I'm a musician. Some of these guys are technical. I'm not an engineer and I don't know what they're talking about. But I can probably tell them some musical things that maybe they don't know about. So I think that in some cases—maybe not every case—it might be interesting to have people who are specialists in different fields comment on certain products. Because, let's face it, if you're not an engineer you can't talk about the engineering. If you're not a musician you can still talk about music, but not in the same way a musician would talk about it. But that's the whole idea of having people who are diverse, I thought.

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JA: How many products are there that are worth that kind of intensive activity?

LL: Not too many, but there are some.

JGH: I would say anything really expensive that gets a rave review, would warrant that.

LL: Or one that got dumped on by someone.

PM: Like the big Altec speakers that sounded lousy in Larry's room but might work in another room.

TJN: I think we shouldn't only think about the possibility of sending equipment around, but simply send the review around for follow-up comments from anybody else who happens to have heard the same piece of equipment.

JA: I do think that any follow-up comments must appear after the appearance of the original review, otherwise the logistics would bog down the production of the magazine.

JGH: That's what I told that guy, that it would take six months to get a review out.

LG: I wonder if that would make a reviewer hesitant to go to either extreme if he felt that his review was going to be second-guessed. . . .

RD: I remember the comment you had from a reader saying that the editor putting in a footnote, a comment about the sound of a product, is undercutting the reviewer, making the reader confused about what it really sounds like. If you include comments that differ significantly from what the primary reviewer found. . . .

JA: Except my experience with all of you is that you actually all do hear the *same* things. The argument against subjective reviewing, that it's just one man's opinion and there's no guarantee that it will concur with anyone else's, I do not think is true for this group of people, because you've all spent many years learning how to listen, and learning how to describe what you hear.

I think this is a trivial criticism of subjective reviewing in general. *Provided* that the people doing the subjective reviewing have taken that care. *And* have that experience. And these people who write for *Stereophile*, I'm convinced, *have* and *do*.

TJN: To return to measurements, a point I'd like to make is that the measurements are going to be made here in Santa Fe before the component is sent out to the reviewer. In general, that's the logistics I imagine for it. I, for one, wouldn't mind seeing the measurements but I don't want to see them early in the subjective evaluation process.

JA: When Bob Harley and I were discussing

this with Larry, we were all agreed that the measurements cannot be made available to the reviewer while he's doing his critical listening.

DO: A case in point was the Lazarus H1-A amplifier. I mean, you wouldn't think that in this day and age a solid-state output stage would have an impedance of half an ohm. That's unusually high and you would expect to have a speaker/amplifier interaction that behooves you to try a number of different loads to try to get around that point. But if you don't know that *before* the fact—people think an amplifier is easy to review, just hook it in your system and listen. Well, that's not the whole story—if you don't try four or five loads, you don't know what's going on.

AB: I agree. As it happens, I happen to have the same Lazarus amps that Dick reviewed, plus an additional pair that Lazarus sent me because the guy felt that I should drive them balanced into the Divas, two per side. Again, just to emphasize what was heard, I have to say I heard not much difference on the Divas from what Dick heard on the speakers that he used, which were the Quads. But the point is that you have to play with an amplifier with cables. And we get into an area that for me is really like a snake-infested area and has nothing to do with what Dick did with his review, which was an admirable job. But an amplifier *is* very difficult to review because you don't know what you're going to put in front and in back of it. I mean cables, speakers, etc. It becomes very very tricky, and I think that I agree with Dick: if you knew that there's a half-an-ohm output impedance for an amplifier, then you can start compensating for it, use a Celestion SL600 let's say, which has a high impedance.

JA: Except in this specific case, I asked Bob to measure the Lazarus's output impedance because Dick had already found by listening that the sound of the amplifier was significantly loudspeaker-dependent. Dick had discovered without any help from measurements that the amplifier did have a serious interaction problem with loudspeakers, and the measurement was purely just to see if indeed it *did* have a high output impedance. The end result was right. Dick heard something; Dick investigated it subjectively; Bob's measurement just said "Well, here's why."

JGH: What is going to be the approach if, for instance, the reviewer says "This preamp has thin low end," and the measurement shows

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Though people in general regard measurements as objective, in fact they're not.

that it's perfectly flat down to 5Hz. Someone should interject something in there to suggest at least a possible reason for such a discrepancy.

GAG: I think it's necessary to go beyond the measurements into the circuitry to try to explain just what it is that's going on. If an amplifier, for example, appears to be lacking in dynamics, well, what are the output impedances of the circuitry? How is the power supply designed?

JGH: How would you even define this?

AB: Having had conversations with a number of manufacturers who said confidential things, I tell you, there's almost a consensus out there, they say, "We did this circuit, we do certain things, and it comes out sounding a certain way." I say, "Well, do you know exactly why it sounds like this?" and they say "Nope."

TJN: They don't know either.

AB: They don't know. The designer, in many cases, says something like "We tried this new circuit, it sounds better now, and this is how we're going to build it." It's really sometimes frightening to hear this type of honesty, but it's out there. So for us to go into a circuit that they designed and find out *why* it sounds a certain way, seems to me to be a very difficult task . . . It's very dangerous and we may end up in the situation where we start making comments that are not technically valid.

TJN: If we think we're going to be able to explain why the measurements, why everything sounds the way it does, in some cases, such as the Lazarus, we may be able to. But if we think we're going to be able to do it consistently, we're fooling ourselves.

JGH: Over a period of time I'm willing to bet a lot of things are going to start falling into place.

TJN: Over the long haul, we may come up with some statistical evidence that gives us some leads on individual products.

LG: There's one other element. In reviewing using measurements, a great deal depends on the person doing the measurements. Even with a system like the Audio Precision. Over a period of time, I think, Bob is going to have a chance to learn the craft of measuring which will enable him to rapidly get to the heart of the matter. After you take every measurement exactly the same way a number of times, you begin to look for anomalies that appear and you begin to track them down . . . I think that if Bob begins to test more and more equipment, he's

going to get a feel for when something doesn't seem to be quite right. Maybe he'll start off with ten tests of an amplifier, but as time goes on he'll have another five optional ones as the software is upgraded. He'll begin to use those other optional ones and begin to find interesting things where the component begins to stop performing well. And that's very helpful because he can then comment on what may have happened in a specific situation.

JA: There's two points raised here: I think the first was very important that, though people in general regard measurements as objective, in fact they're not. The whole decision on what measurements to make and how to carry them out is a learned experience. Anybody doing it will go through quite a long learning process about how to carry out the measurements and reject spurious. What the instrument tells you is *not* necessarily the truth and you have to learn how to distinguish between the truth and something due to a bug . . .

LG: You can't get the measurement to work, you can't get it to work, you can't get it to work, you blame your equipment, and all of a sudden you realize it's the connector or something. There was one amp I had from a very well-known manufacturer, the terminals were wired backwards! It became very clear that you couldn't get the thing to work and there was a reason for it.

JA: The second thing is that I see carrying out measurements on a component as being analogous to chemical analysis. You have a tree structure of tests, each one giving you a yes/no answer. You carry out your first test; did it do this, yes or no? And that will lead you in two paths, and then you have more tests which lead you in further bifurcations until you end up down one tiny little twig which is where the truth lies.

LG: As long as you don't print all the standard things that begin at the root. Just show the reader the ones that you found significant.

JA: Bob, you wrote in the September issue that because somebody carries out a measurement it inherently implies that he feels that that measurement means something.

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Robert Harley: And I said we're not going to print a laundry list of meaningless specs, only if they're relevant to the review or to the product. We're not going to print every amplifier's THD. . . .

TJN: We'll have that data available, though it won't necessarily all be printed, right? We can correlate it as we go along. . . .

RL: I'm going to go back to something that Gordon said quite a while ago, wondering whether the magazine is written for and to the general readership or toward the manufacturers. I think it has to be *both*. At all times. Because the manufacturers *are* part of the readership, and certainly one hopes that they're going to read and learn. . . .

JA: There is a third kind of reader who is very important, which is people who work in retail stores. I understand that the outcome of the Carver Challenge and the review of the production 1.0t amplifier in Vol.10 No.3 was a big drop in sales, not because the *readers* lost interest in the product but because people working in Carver dealerships decided they didn't want to sell it anymore. This is the sort of impact the magazine can have which is perhaps not suspected by many people.

GAG: Maybe this is a little bit naïve, but I would hate for anyone to buy a product simply because I gave it a favorable review. What I would hope would happen is that a positive review would give the reader some things to think about, and then the reader would go and hear the product. Maybe he would hear other things that had also been reviewed and then be able to ultimately make a decision on his own based on. . . .

Ralph (the dog): Wa-oooo! [*Larry's dog puts in his two cents' worth*]

GAG: . . . what he'd learned from reading the reviews.

JGH: How many stores do you think you could find where you would hear a product to advantage?

TJN: *You* try to find a store where you can make a comparison between cartridges, for example.

JA: One of the things that retailers complain about audiophiles is that they go into their store and ask if they could listen to five \$100 cartridges. If that retailer takes more than 15 minutes with that sale, then his profit is gone.

GAG: I agree that's a problem. . . .

JGH: . . . and is one that I don't see has a solution.

These are people who are intelligent, but when they get into audio their mind turns to tapioca pudding.

GAG: You may be right, but I would hope that one of the things that our magazine attempts to do, and I think *does* do, is to educate the readers so that they are capable of making decisions on their own as opposed to just accepting the word from on high, and believing everything that's said.

LL: I agree 100%. I wish that were the case. But people come backstage after symphony concerts and say, "You're Lewis Lipnick, you write for *Stereophile*, we're tourists, we came up to Washington, can we bend your ear about equipment?" They say, "You wrote about this, it must be fantastic, you hear so much better than we do." I looked at one guy and said, "You've got a brain and two ears. You should use them." He says, "Yeah, but, you know so much more about this." I answered, "No, I listen to a lot, maybe to a lot more equipment, but it's *your* money, it's not my money!" The problem is that we want to see it as people who will take what we say with a grain of salt, then will go listen to a component and decide for themselves whether they want to buy it or not. It doesn't work that way, unfortunately. These are people who are intelligent, but when they get into audio their mind turns to tapioca pudding. They want to be told what to buy. When these people buy a car, they'll read a review but they'll go test-drive that car, and if they don't like it they're not going to buy it. But yet at the same time they will read a review of a piece of audio equipment and say, "Oh wow! This has got to be the greatest thing since sliced bread!"

RD: You said it was a religious experience. Religious people want to be told what the "divine truth" is rather than to find out for themselves.

LL: But it's not right. They should be aware of what *they* hear. When I write a review, I try to say this is what *I* heard, this is *my* opinion, but I say it may not be *your* opinion, and before you go drop ten grand, you should go listen to this. And if you don't like it, for heaven's sake don't buy it! But it doesn't work that way.

JA: Half the readers will say, "Hey, this guy's copping out. He isn't sure of his own opinion."

JGH: What's the alternative?



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The Cheapskate finally realized that most stuff is cheap because it's not very good.

LL: Well, the alternative is perhaps to put an article in there talking about: "Hey, reviews are very important, and yes, people who write reviews probably have more experience listening to this stuff than you do. However, when you read a review, you should then say to yourself, 'Well, if it's a very expensive piece maybe I should spend the money for an airplane ticket to New York and spend a couple of days there listening to the stuff before I drop 20 grand on a system.' . . . If you're going to spend a lot of money, you should spend maybe five or six hundred or a thousand dollars, do a little vacation, go listen to this stuff, *really* listen to it, and make sure it's what you want."

JA: I should point out here that Lew made himself very unpopular among the Washington-area retailers by advising in a Washington newspaper last Fall that people in that area should go to New York to listen to equipment. [laughter]

LL: I wrote that if you really want to find out what high end's about, you should go to New York, spend a week up there. Then you'll learn about high end. And it's true!

LG: Having seen a zillion reviews that end "This might be the right amp for you but you'll have to go and listen to find out for sure," your whole feeling about the review just goes *zzzzit!* Because the guy is copping out from taking a stand. As a reviewer, if I like a product I'm going to say, "If I were in a position to buy this, this is the product I would buy." And if I don't, I'm not trying to tell other people they *must* do this. On the other hand, I believe what I'm saying. Okay? And I'm not going to qualify it to the point where it's meaningless.

LL: At the end of the Levinson 23 review, I said, "I'll put my money where my mouth is and buy it." And I did.

AB: I always remember Gordon's comment at the end of the Paoli 60 review. Quite some time back, right? Where Gordon said, "The manufacturer/designer is a friend of mine. I'm not telling you to buy it, but I think this is the best there is." Which was very nice.

I'd like to agree with what Tom mentioned when it comes to cartridges—I've just spent some time with cartridges, as has Tom—I really believe that there's almost no store where a person can go in and get a fair evaluation of what a cartridge can do. Especially when you have to compare it. Because of franchises, this guy sells, let's say a Rowland, another guys sells a Reference, and etc., etc . . .

JGH: A cartridge audition is useless unless you audition it in the same tonearm that you use and with the same preamp.

JA: The next point I'd like you all to comment on is that we seem to have a split in our readership. Many readers appear only to want to be told about the state of the art, what designers are doing when cost is no object. However, there is also a significant body of readers who say, "We don't want to hear about that, we'd like only to read about the best equipment that we can *afford*." How does the magazine handle those apparently incompatible demands?

TJN: What's the definition of what I, as a reader, can afford? It's going to vary dramatically. . .

RD: I think there's room for variability. And there should be.

DO: You've got to have a smithering of both. You're getting back to the comments Arnie made about the car magazines. You know, you review a Ferrari, or a Lamborghini, because people dream about, "Gee, what would it feel like to own one of these things? To drive it. What's the feel of sitting in one of these things?" When I was that poor an audiophile, I used to dream about all this expensive stuff that I couldn't afford to buy. It's a vicarious pleasure and there is room for that. But let's not lose sight of the real world, and for most people, a \$1000 amplifier is it!

JA: But how would you feel as reviewers if I kept sending you a continuous diet of \$750 preamps, \$1000 amplifiers, and \$1000 speakers? Pretty soon you'd say, "Enough!"

JGH: Like Sam.

JA: Like Sam Tellig. We get so many letters asking what happened to the Cheapskate? And the answer is that Sam finally realized that most stuff is cheap because it's not very good.

TJN: You also lose your perspective, because when you don't know what the best stuff sounds like, you don't know how good the cheap stuff really is.

JGH: We are in the best position of any magazine to be evaluating mid-priced equipment, because we have the best basis of comparison. The state-of-the-art stuff.

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JA: But Gordon, you're the one person who gets most impatient with mid-price equipment for not sounding nearly as good as the very expensive stuff!

JGH: What I'm saying is, I think we should be definitely stressing the high-end stuff. But I think we should also be trying as best we can to at least be covering some of the lower-priced items. Because occasionally someone will come across something that's a damn good buy.

Guy Lemcoe: My feeling is that it's a question of affordable *new* entry-level high end, or *used* state-of-the-art high end. I don't know what the position of *Stereophile* is in recommending scouring *Audiomart's* pages for used components. At usually a fraction of the price new.

TJN: Read the old reviews.

GL: Exactly, this is what I find myself forced to do because I'm in no position to be able to afford, you know, a VPI Mk.III new from a dealer. *If there was a dealer in Santa Fe.* And this raises a problem with the uniqueness of Santa Fe—it's very difficult here to audition anything that you're excited about. You'd like to go hear it. And as a consequence I spend a lot of time going through the fine print in *Audiomart* with my little yellow pen . . .

DO: It's a treasure trove of goodies. One of the best preamps out there is the Audio Research SP-8, which can be had used for under \$1000. Would you rather own an old SP-8 or a new Lazarus?

GL: Or a new PS Audio? I think this is an issue that manufacturers probably are not going to accept. That at some point in a review we might recommend buying a used VPI Mk.II as opposed to a new VPI Junior.

JA: The magazine *bas* totally avoided the fact that there's a large secondhand equipment market out there. *Stereophile's* focus is exclusively on the new.

RL: But the new becomes the old at some point . . .

LL: You can't satisfy everyone all the time. The thing is that lots of people who read the magazine are very opinionated, they're people who know what they want and don't give a damn about what anyone else wants. I think the magazine *does* have to talk about the very best equipment. But there is other equipment out there that is good, it's not high end, but it's worth reviewing and should be taken seriously. Of course, how much space do you have? You're the editor and I guess it really comes

down to what profile you and Larry Archibald want this magazine to have. And the readers are going to have to live with that. But you're not going to satisfy everyone. Do you want to have it mainly high end or do you want to split it?

JA: I want both. I want to read about the kind of equipment that I wish I was able to buy. On the other hand, I think an important role for the magazine is to give its readers hard buying information on what most of them *actually* purchase. Those twin goals are to me equally important.

JGH: I think the stress must be on the state-of-the-art stuff.

TJN: I think the mix we've had over the past couple of years has been fine.

JA: Peter [Mitchell] has offered to write a column on inexpensive equipment and I think that that's something we should definitely publish.

PM: I do think *Stereophile* needs a clearer focus on the middle of the market than it has at present. Since we lost the Audio Cheapskate column, you need to replace it with something. Because an occasional review of an Adcom preamp is not sufficiently visible emphasis on the affordable end of the range. And I think we should be even more aggressive in seeking it out.

DO: What do you mean by "affordable?"

PM: I mean exactly in the right price range that most of our readers are buying equipment in. Which is \$5000 systems . . .

GAG: One of the things that I have a real problem with when I read it in magazines and when I hear it from high-end dealers is the attitude toward people who don't have a fortune to spend on hi-fi, the attitude that "Well, you can't spend that amount of money? Sorry, you can't enjoy music. You won't be able to listen to music." I have a real problem with that. And I think often it's more challenging. If someone has \$5000 to spend on a preamplifier—yes, there are some out there that are obviously not worth the money—the chances are pretty good that what they buy for \$5000 will at least be reasonable. I think it's more of a challenge to help the entry-level—and I love Guy's term "entry-level high end," I use that term myself—I think it's very important to bring new people into this business by steering them in the right direction on affordable equipment.

I agree with Tom Norton, I think the magazine's balance between the state of the art and the affordable is very good right now, I would

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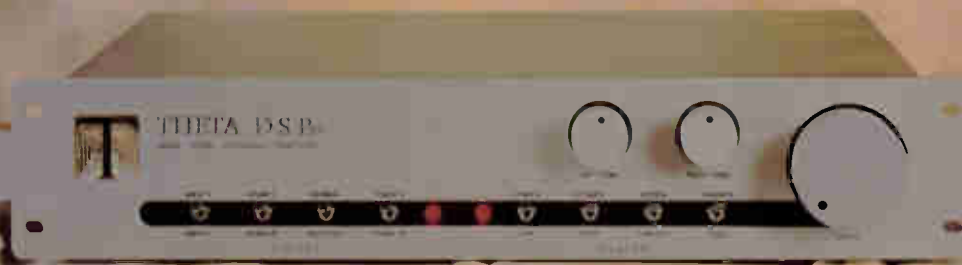
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March 1989

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like to see it continue in that direction. It disturbs me that there are readers who are offended by the fact that there are a couple of equipment reviews of affordable products. I would have a problem with a person like that. If you've got \$10,000 to spend and you don't want to read the GTP-400 review, well, that's okay. You don't have to read that review. But gee, aren't there enough other things in the magazine to make it worthwhile to you?

PM: I think the opposite problem is probably a real one. I mean, there are only about 10,000 audiophiles in this country who can afford \$20,000 systems, doctors and lawyers mostly. If the magazine's circulation is growing, it's now 40-some thousand and probably heading, eventually, close to 100,000.

JGH: What is it?

JA: 45,000 this year.

PM: Most of the new readers are going to be in the \$5000-\$10,000 system category. So you have to have a growing emphasis in that price range if you want to satisfy those readers.

JA: However, Larry Archibald and I both feel that there is a natural ceiling on *Stereophile's* circulation in this country of probably 60,000. To do any more than that would require such a dilution of the magazine's contents that neither of us would still want to be involved in it.

PM: So you don't really want to compete nose to nose with *Audio* magazine?

JA: How could we without destroying what we feel *Stereophile's* good at?

LL: Last night John and I had a slight disagreement during dinner about this point. I think that he sees *Stereophile* as a magazine that should be targeted to the small number of "audiophiles" and is always therefore going to appeal to a small number of people. That may be the case. Maybe that's what we want. And we shouldn't sell out. *Stereophile* shouldn't become *Stereo Review* and it never will. But Gordon had a good point when he said that we're in the driver's seat. I have a small consulting business, I help people set up audio systems in the Washington area, and I've run across people who knew nothing about high-end audio at all. They just *like* music, and they generally don't spend a fortune on equipment. I'd talk to them about audio and explain about good equipment and explain what you get for what you spend, and they were always satisfied with the system [I recommended].

A lot of them have read *Consumer Reports*,

God forbid, and most of them subscribe to *Stereo Review*. But what I always do is give them a copy of *Stereophile*, generally when I'd come to their homes for the first consultation. I say, "This is the magazine that I write for. You may not be buying in this price range, but I think you'll enjoy reading it." And almost to a person, they say, "This is fascinating reading. A lot of the stuff is more expensive than I would probably buy, but it really made me *think* about what I want and what music reproduction's all about." And most of them either become subscribers or buy it from a local shop. But over the past years, out of those people, about 30 have become lunatic audiophiles. To the point of being absurd—they go by an audio shop and their noses twitch. This magazine has turned them into audiophiles. That should tell you something. People knew from nothing about audio, and they now love this magazine. So there's something there for people who aren't originally audiophiles.

RD: Ultimately it is the circulation figures that are the bottom line in terms of people's satisfaction with the magazine.

JGH: And the renewal rate.

GL: I think that Dick mentioned, the magazine should be fun to read. It should be interesting, we can't lose the entertainment value of the magazine. I'll never own a \$12,000 amplifier. But I love to read about them.

JGH: This is what I used to call "audio-porn." [laughter]

GL: But as Lewis mentioned, to convey to the reader the thrill of discovery of a musical experience—to me that's the most important thing when I write a review. I hope I'm successful in conveying the excitement that I feel when I put a component in a system and it uncovers layers of music that I wasn't aware of before. This, I think, is contagious. Once that bug hits you and you *bear* the sheen on strings, or the shimmer on massed strings, you'll never forget it. It's a nirvana. Unfortunately, you'll never be satisfied with anything less from that point on, but all it takes is one experience. A positive experience. When you hear it you're hooked. You go from being a non-audiophile listener to being an audiophile listener. But most importantly, they're listeners. And that is what is most important. Listening to music. Let's not forget the musical experience. Because that's

the end result of all of this.

This is the perspective I come from. The hardware is fine, but it's what I hear with my ears that's the most important determining factor for me. Again, we come back to the subjective *vs* the objective. It's difficult. People want to be told. "This is what you should buy." "Editor's choice: five stars, four stars, three stars. . ." —let's not fall into that trap.

LL: I think it's important that we try to find a way how we can get more visibility for high-end audio. The average John Q. Public doesn't know that the American high-fidelity industry is the finest in the world.

JGH: Or *exists!*

LL: Exactly. I think what we have to do at *Stereophile* is to say "There is a high-end community in this country. It's the best in the world. You go to Japan, what do they buy? They buy American stuff. How about that? Hmm!" People's eyes'll light up. That's the first thing I do when I go to a client's home. I say, "Japanese stuff is great, mid-fi stuff is great, but do you know who makes the finest audio equipment in the world?" They say "Who?" I say "The United States!" And they say "What? The US?" And they look at me like I'm a screwball.

JGH: I have been talking for years about the idea of trying to get together an institute or something like that which will promote high-end audio.

JA: Well, Harry Pearson's promoted this Association of High-End Audio Design. I feel they should present President Bush with an all-American, high-end hi-fi system.

LL: He doesn't want it.

JGH: He'd never listen to it. His tubes would last forever.

JA: That would generate the kind of publicity Lew is talking about. . .

LL: I tried that. It got to Mrs. Reagan, and she didn't want it. And the Bushes don't want one. Just a couple of months ago I talked with the head usher of the White House about just such a proposal about high-end. He said the Bushes are not interested.

JA: But it made such an impact in the '70s when the Carter White House was presented with an all-Japanese system. That was big news even in England.

JGH: Maybe we can send one to Gorbachev, he's supposed to be an audiophile.

LL: The National Symphony is going to Russia next February. I was thinking, what we

The average John Q. Public doesn't know that the American high-fidelity industry is the finest in the world.

should do is set up a high-end system for Gorbachev⁶ and then in the papers in the US, you would read "Gorbachev gives high-end American audio system—What does *our* President own? Japanese!" [laughter]

JA: Would anyone care to bring the discussion to a close?

GAG: A lot of it's been alluded to, but I think one of the real strengths of *Stereophile* which continues to this day is its attitude toward its readership. *Stereophile* has always treated its readers as equals, like friends sharing information. Which is very, very different from our major competitor, which treats its readers with contempt. I got an interesting reaction from the students who take my "Audio Fundamentals" course. I have them go to the library and review the audio magazines—the college gets *Stereophile*, *The Absolute Sound*, *The Sensible Sound*, *The Audio Amateur*, *Speaker Builder*, *Gramophone*, and *Stereo Review*. This summer was the first time we had done this, and many of my students said *The Absolute Sound* is pompous, arrogant. At the same time, they said *Stereophile* seems on the level.

RD: They should read *The Audio Critic*.

GAG: I think that's very, very important and I really hope we keep in that direction.

JGH: We will.

JA: That whole attitude stems from Gordon.

JGH: And John has not changed that at all.

JA: As I said earlier, we're all drawn to *Stereophile* for similar reasons. I was drawn to *Stereophile* because when I first read Gordon—which was very hard, Gordon didn't make it easy for people to read *Stereophile* in England in the '70s—this was a man speaking my own language. He wasn't talking down to me, he was talking straight at me. It was obvious that with his experience and with his abilities, this was somebody I could learn from, but this man wasn't pompously standing back and saying "I know it all. Just read what I say and believe it." He was saying "This is where I'm coming from. Think for yourself." **S**

⁶ Unfortunately, we were too late. According to a report in the September '89 issue of the German magazine *Audio*, Gorbachev was recently presented with a Restek/Backes & Müller/Transrotor/SME/Ortofon system.



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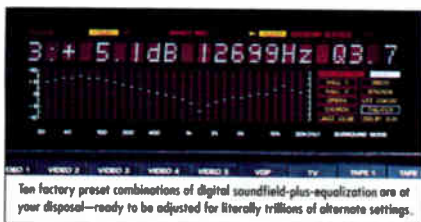
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LETTERS

We regret that resources not permit us to reply individually to letters, particularly those requesting advice about particular equipment purchases. Were we to do this, a significant service charge would have to be assessed—and we don't have time to do it anyway! Although all are read and noted, only those of general interest are selected for publication.

More record reviews?

Editor:

Consider this a vote for *more* record reviews (perhaps shorter) and *less* letters.

S. Clifton
New York, NY

What the hell is soundstage?

Editor:

What the hell is soundstage? I read about this in *Stereophile* but have never seen it defined, along with a lot of other audiophile jargon.

F. B. Cannonito, Ph.D.
Irvine, CA

Soundstage (*soundstāj*), n. *The illusion of a two- or possibly three-dimensional space created between and behind a pair of loudspeakers when a system plays back a two-channel recording that has been encoded so as to contain the necessary informational relationships between those channels (by use of an appropriate microphone technique, for example). Sometimes referred to, less descriptively, as the "stereo image." Ability of a system or component to create this illusion referred to as soundstaging (or imaging), though the verb "to soundstage" is not used.* —JA

An apology

Editor:

I feel I owe you and your staff an apology. A few months ago, I wrote a letter to *The Absolute Sound* in which I likened your publication to *Stereo Review*. [Mr. Knutson's letter, where he referred to our esteemed journal as *Stereo-review-phile*, appeared in *TAS Issue 57, p. 12.—Ed.*] I had been dissatisfied with several of your issues and equipment choices, and following the tone of much underground writing, I let a cheap shot fly. A friend of some of your staff called me and, during our discussion, explained the dedication of you and your people.

End of cheap shots. There is nothing like seeing your remarks in print to make you wish they were more tempered.

If the truth be known, I have been buying

Stereophile at the stands for a year or so now, and I felt I should 'fess up like a man and get a subscription regardless of my remarks. I find both underground mags to be indispensable, each in its own unique manner. I like the way *Stereophile* is published monthly and covers a large variety of equipment. I really appreciate your coverage of digital issues, and I read closely anticipating the day (or year) when I make the digital plunge.

I really like your explorations in the realm of testing. Aside from the peak-current issues, I feel the real difference between amps involves multiple tones modulating each other, which I believe happens when an amplifier is non-linear. I suspect much of the so-called above-hearing-range stuff modulates and creates byproducts in the very audible range. Keep chipping away at it.

Mark Knutson
Fridley, MN

Lifestyle mimicry?

Editor:

You now have all the toys and swelling subscriptions. Please, give up the mimicry of Harry Pearson's lifestyle. I mean, how many people can one man's plate feed?

Marc Rechan

Audio Systems Ltd., Richmond, VA
Hub? Actually, apart from trying to be a good writer and editor, and listening to as much live music as possible, attributes which are hardly HP's exclusive preserve, the only part of his lifestyle I would consciously mimic would be to drive a red Corvette. A car which is decidedly neato-bang, as New Yorkers would say. —JA

Something missing?

Editor:

I have enjoyed reading "my" first four issues of *Stereophile* cover to cover. In that period of time I have upgraded my old system to B&K, Adcom, and Precise Acoustics. Your articles and reviews were very helpful in determining which direction to take. I also found your classical recording reviews informative, especially Breunig's "Building a Library."

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I wish, however, that I could enjoy the publication even more. My problem, and I assume the problem of at least a small percent of your readership—everyone starts from the affordable to the expensive, from the simple to the complex—is that having just begun to read about and purchase hi-fi equipment, I am at a disadvantage in understanding the underlying concepts, definitions, and standards within which manufacturers build, reviewers analyze, and trained audiophiles listen to and enjoy reproduced sound. Would it be possible for you to start a series of articles that addresses the needs of the audio neophyte?

Thank you for having opened the world of hi-fi to my ears. I trust that you will continue to do so in the future.

“. . . And when she sang, the sea,
Whatever self it had, became the self
That was her song, for she was
the maker. . .”

—Wallace Stevens, 1934
Edgardo Tenreiro
Naples, FL

Lazarus defended

Editor:

Regarding Dick Olsher's review of the Lazarus HI-A amplifier in the August issue, I want your readers to know that I don't agree with his findings.

I work with live, unamplified classical music almost every day of the week. I have found Lazarus amplifiers and preamps to be completely musically satisfying.

It took a long time for me to find equipment I can live with, and now in a review I see it "shot down."

I encourage any audiophile to give this gear a listen. It is totally reliable and completely musically satisfying. (I use single-strand solid-core cable, maybe that makes a difference. I haven't found a multi-strand cable I can live with.)

Dana Ross
Los Angeles, CA

Why no Klyne?

Editor:

I read with interest the CES reports in the August issue. . . and was amazed that all four of your reporters failed to even mention what *this* attendee considered to be the highlight of the SCES—the Clearaudio/Klyne exhibit. Not only did both companies have new products

on display, their live exhibit was superb—by far the most natural and musical this listener heard at the show. It was probably one of the few exhibits that concentrated on producing *good sound* rather than *hype*—was that their failing? Or was it that they were being avoided? Whatever the case, it seems a disservice to your readers to drone on and on and on about nothing, when real news goes unreported. It's hard to believe that a few months ago a magazine could be ranting and raving about some flap over the Klyne SK-6, and then not even bother to follow up at the show! It's unfortunate, because if you had, you would have discovered the SK-6 has evolved into a unique and deliciously musical product, the System Six—an innovative new concept in preamplifier design—and, in this audiophile opinion, very newsworthy. But obviously you are more concerned about politics than really informing the public. I guess that's why I'm not a subscriber. I read for amusement rather than education—the latter one gets by *listening*.

So pray tell, dear Editor. . . are you and your reporters blind or just deaf?

Samual Webber

Portland, OR

I'm pretty sure they're not deaf, but as to blindness, it is an impossible task for even four writers to visit every booth and room at a CES in the three and a half days the show runs—I remember IAR Hotline's J. Peter Moncrieff complaining bitterly in print some years ago about the frustration this engenders in responsible journalists—and this has been exacerbated in the last two years by the fact that high-end distributors at the SCES are widely spread out, in geographical terms. It is unfortunate but inevitable, therefore, that even a lengthy show report like that which appeared in our August issue will have some important omissions. In the case of the Klyne, as with other products that were not mentioned, this was not deliberate; "political" bias is never a factor. It's a shame that Stan Klyne didn't alert any of the magazine's writers beforehand that Klyne had something hot at the show, but if at all possible, we will give a listen to the new preamplifier.

—JA

Error at the SCES

Editor:

The Summer CES article in the August issue of your fine magazine had a small error. The Foun-

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tain Head material that is being used by Well-Tempered, SOTA, and Mod Squad is *not* a DuPont product. Fountain Head is similar to Dupont's Corian but is manufactured by Nevamar. We are using Fountain Head, Corian, steel, and MDF in our new Reference Foundation loudspeaker supports.

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Jim Wohlford

Vice President, Sanus Systems
Little Canada, MN

Stick to hi-fi!

Editor:

I look forward to receiving *Stereophile* every month. I enjoy its editorials on hi-fi components. I became extremely upset while I was reading Lewis Lipnick's CES report in the August issue. I buy this magazine for its editorial comments on hi-fi equipment. I don't buy it for comments on unions.

Lewis Lipnick can have his views on the pro/anti-union question. It bothers me when he states just surface facts. He complains about all the exhibits having to be erected by union help. Who does he want to do the work? Non-union? The exhibitors?

The Massachusetts Institute of Technology conducted a study on the question of union vs non-union help. They found that the union help worked at a higher rate of speed, with better results. You get what you pay for.

In answer to the second question, would you rather have an expert perform a heart bypass, or a bystander that has seen it done a couple of times?

Lipnick's next complaint, "I heard several

stories of union help charging in excess of fifty bucks just to tighten a screw, or move an exhibit table ten feet," sounds like hearsay to me. I wonder if Mr. Lipnick would buy a pair of speakers that he *heard* were good.

The magazine is good when it sticks to hi-fi equipment. The Editors should try and keep the articles and reviewers on material that is pertinent to hi-fi equipment. Otherwise I'll take my Union wages and spend them elsewhere.

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James E. Berry

So. Weymouth, MA

Tramp the dirt down . . . ?

Editor:

Brian Lynch's letter in August about left-wing drivel reminded me of some of the trash that has been appearing in *Stereophile's* record-review pages in recent issues. If you're trying to one-up *TAS* in this regard, be assured, from this observer, that you're on your way to success.

I refer you in the first instance to Richard Lehnert's tacit approval in May (p.155) of Elvis Costello's wish for an early death to Margaret Thatcher. I wonder if Lehnert was as disappointed as Costello must have been when an assassin's bomb failed to blow her up in a hotel a few years back.

Then there's Kevin Conklin's remark about Glenn Miller feeding the fishies at the bottom of the English Channel. On the basis of that statement I imagine he finds it just as amusing to contemplate the thousands of English and American soldiers, sailors, and aviators who fed the fishies of the oceans as a result of WWII.

Conklin keeps up the good work by terming Hermann Scherchen a "crazy" German conductor. I've been reading record reviews for 40 years, including many that savaged a conductor's interpretation, but not one has ever used the word "crazy" to describe the conductor.

Both Conklin and Lehnert are quality writers. Unfortunately, the words taste and discretion appear to be unknown to their thinking processes. By the way, John, just what is the responsibility of the editor in these matters?

Sid Marks

Brooklyn, NY

Sid Marks, hub. The Sid Marks? Richard and I certainly apologize for unnecessarily offending the sensibilities of any reader. Given the evidently aching delicacy of Mr. Marks's sensibilities, I will go farther, and submit him for

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"International Audio Review", Hotline #43-45

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Neil Levenson

"Fanfare", Vol.10, No 4

CES — Summer '87

"Pure musicality is the only way I can adequately describe what I heard: no sensation of electronics or speakers, with believable sound staging and tonal accuracy... I think it would be safe to say that this represented the most 'music for dollar' at the show."

Lewis Lipnick

"Stereophile", Vol.10, No 5 Aug. 1987

CES — Winter '88

"The Death of Mid-Fi: The Big Chill in Vegas"

Michael Fremer

"The Absolute Sound" Vol.13, Issue 52, page 250

CES — Summer '88

We weren't there.

CES — Winter '89

"...I am pleased to note that the sound in the Kinergetics room was stunningly true to the sound of the original Steinway. Nice one, Ken and Tony!"

John Atkinson

"Stereophile" Vol.12, No 3, Mar. 1989

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inclusion in that benighted circle of protectors of the public taste that includes Tipper Gore, the Rev. Donald Wildman, and, of course, as its Victoria Regina, Jesse (Tobacco is Better for You than Smut) Helms. Damn, some people want to make the world boring. —KC

I don't understand how anyone could have read my Elvis Costello piece and come away thinking I hungered for or approved, tacitly or otherwise, of Thatcher's early death. You had to work pretty hard for that one, Sid.

—RL

Actually, I did think KC's comment was somewhat in bad taste but, hey, that's up to him: these people are hired to write the magazine for their experience, knowledge, and opinions, and I try not to fit the latter into the straitjacket of my own tastes and opinions. Should I, for example, have published Lewis Lipnick's anti-union grumblings in his Chicago report? The answer must be "Yes," no matter how I may feel about union membership—for a while, I was active in union politics—on the grounds that LL made a case for its relevance to the subject, which in this instance was the organization of the SCES. To do so, of course, may upset those who only want to read Stereophile for its views on music and components, but where such a matter significantly affects the high end, it must be reported. "Editor as Censor" is not a role I particularly relish nor see as desirable—see this month's "As We See It" for a longer discussion of these very issues. In view of the next letter, however, is it something that I should perhaps consider more seriously? —JA

An offensive ad

Editor:

I just received the September issue and made it no further than p.40, the full-page advertisement for Amrita Audio.

That is the most offensive advertisement! I cannot believe it appeared in the pages of your fine magazine. I have subscribed throughout the 1970s and, after a brief period of military duty, I resubscribed. However, this one advertisement is so offensive, I cannot continue to subscribe any longer.

Please cancel my subscription. I hope that this advertisement does not portend the style of journalism you are beginning to underwrite.

B.J. McLellan & Robert McLellan

Overland Park, KS

As Publisher, Larry Archibald is fundamentally responsible for overseeing the advertising side of the magazine. I have asked him, therefore, to answer the point raised by the McLellans over this Amrita ad, which I agree is in pretty poor taste. (It's also a stupid ad—maybe we should send Amrita a copy of David Ogilvy's Confessions of an Advertising Man.) However, before I hand the floor over to Larry, I would like to make the point that whether something represents a departure from normal standards of taste depends on what you call "normal." No, upon reflection, I still don't relish the idea of "Editor as Censor." Stereophile is written by and for adults. If, for whatever reason, a company decides to run an ad that a significant number of readers will find offensive, then a free and open marketplace will respond appropriately in that that company will suffer a loss of image and perhaps even sales. I think it more productive for the McLellans to actually write to Amrita to tell them that they find this ad offensive. —JA

Stereophile's policies with respect to accepting advertising are quite open-ended. As our statement above the Ad Index (next to last page in each issue) says, "Advertising published in Stereophile is accepted on the premise that the merchandise and services are accurately described, and are available to customers at the advertised price." We, like Harry Pearson, will not accept advertising for known carcinogens—by which is meant tobacco products—and I would reject advertising that attacks or smears a particular ethnic, religious, or racial group. We have in the past rejected advertising employing graphic sexual depictions. Nevertheless, as JA points out, our role is not that of censor. We examine the ads we publish prior to publication, but will not reject them on grounds of poor taste except in the most extreme cases. I saw the Amrita ad soon after we received it, and remarked on its poor taste. Aside from the questionable judgment displayed by the advertiser in associating his product with deceased animals and their burying grounds, I did not find that the ad maligned animals in any particular fashion, or in a way that defied the common taste to a degree strong enough to warrant rejection. We apologize to the McClellans for the shock they experienced, but I have to say that we'll run the Amrita ad again if Amrita decides to place it again. —LA



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Say what?

Editor:

It ought to be added to the letter of "our" Mr. Fremer (and the Atkinson; see *Stereophile*, July 1989, etc.) from the "knowledgeable" Pearson's *The Absolute Sound* because "our" Fremer, etc., leave designedly unsaid the most important things.

During 30 years different American, British, German, Japanese so-called scientific audio journals, so-called Hi-Fi journals, so-called audio companies have spread the idiotic revelations on transistors sound, valve sound, digital sound, TIMD, Fuzzy, etc., etc., etc. However, all such chauvinistic, charlatanic and ignorant journals/companies have never known even fundamental things in real Sciences such as Kotelnikov's and correct Kharkevich's "digital" theorems, non-linearity fundamentals, dynamic range for analog and digital, real causes of transistors sound nature, Rout of transistors, etc., etc., etc.

But such retarded charlatans (*JAES*, *HFN/RR*, Lipshitz, Buck, Clark, Fehr, Plunkett, so-called "presidents", s-c "papers-committees," so-called "conventions committees," etc., etc., etc.) have heard TIMD, even the couple of insidious electrons as transistors sound causes! Now such charlatans (see the AES "tube" workshop, 85th conv. without any scientific knowledge on such subject) conspired, began to speak: "Transistors distortions do not exist, We do not hear, and a digital is perfect, etc."

Why do we have such a metamorphosis? Because such absolute proofs of existence of real causes of transistors (and AES digital) sound have been furnished and such proofs show perfectly absolute ignorance, chauvinism, charlatanism of such charlatanic "uniques," "organizations." However, dear readers, how is it possible to admit such correct scientific denials . . . from such . . . American Russian for the western charlatans, chauvinists.

However, Mr. Fremer, etc. have been warned (in Aug.-Sept. 1988) that the above-mentioned AES international charlatans, thieves tried to entrap them for charlatanic purposes. But they have participated. Moreover, the real scientific, etc. proofs had been furnished in the above-mentioned time. Mr. Fremer uses ironically the word "scientists," but we guess Mr. Fremer, etc. have never seen real scientists in the audio.

The above-mentioned charlatans, "organizations" were and will be exposed publicly and

globally on AES conventions (New York-83rd, Hamburg-86th, globally, completely on New York-87th, 88th, etc.). We have turned out also AES ex-managing editor MacDonald and see next. In the future we will give the absolute proofs that the American, German, British, Japanese charlatans, journals, companies have never known even American fundamental things (even American people with hearing-aids hear some of the transistors distortions, see the Amer. book) in the audio from even American physical, non-charlatanic journals. In a few, several years you will see a lot of very interesting, unusual scientific things in the audio, new scientifically based revolutionary designs with even American, etc. components.

Now certain . . . editors, charlatans, parrots want to be clever after the facts and without any proper, legal reference. However, all so-called companies, editors, journals, etc. will pay for violations (we have all legal rights on many main things and nobody can publish, use (!) our revealed and many undisclosed materials without our permission) and our IISC organization and lawyers are collecting cases (see also *HFN/RR* May 1985, pp.21,23).

And retributions are just beginning (for the audio duperies of audio community of many years).

Dr. Yury Miloslavsky

New York, NY

As Dr. Miloslavsky's letter was accompanied by one from his legal representative instructing me to print it or else, I felt it appropriate not to alter one word in editing, even if intelligibility thereby suffered.

—JA

Great British Frauds?

Editor:

Would the distastefully anglophobic Clark Johnsen ("Letters," August 1989) be so kind as to let us know who (or what) the two remaining "Great British Frauds in Science" are, along with the venerable Sir Isaac?

David G. Wisler

San Pedro, CA

Garbage in/garbage out

Editor:

After reading Clark Johnsen's letter in Vol.12 No.8, I felt compelled to again write. Even as I enjoy basking in the warm glow of recognition afforded by Mr. Johnsen, I must respond to his inference concerning the "current American educational system." As a former teacher

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and the spouse of a professional educator, I take exception. Although it may be convincingly argued that this august journal is not the forum for discussing the faults and foibles of our public educational system, I will simply comment that there is not a damn thing wrong that cannot be immediately remedied by improving the quality of the parents producing the students. Garbage in/garbage out. 'Nuff said. (I will, in fairness, concede that the concept of a Liberal Arts education has been lost in the technological shuffle, much to the detriment of our society.)

If I may attempt to darken the already murky waters embarked upon by Peter Reichelt ("Letters," *passim*), he is correct in the assertion that the sound of acoustic (classical) music is a known quantity. Recorded classical music is rarely subjected to overdubbing and other travesties of the modern recording studio. All of the instruments involved are a part of the same acoustic space. As a result, reverberation times, reflected sounds, and the like sound consistent to the ear. I am sure many of your readers have heard for themselves examples of badly produced studio recordings in which care was not taken to acoustically match the overdubs to the original basic track. Classical music, even that recorded from several studio "takes," does not cause the listener's ear to become confused. It is a rare live rock recording that even remotely approaches listenable, let alone any real use in detecting the nuances differentiating sound-reproduction equipment. However, a well-recorded instrument can be useful if the listener is sufficiently familiar with its intrinsic sonic character. Regardless of the source, the fundamental question is one of timbral accuracy. Does a "Tele" sound like a "Tele"?

Musical instruments, whether they are acoustic or electric, do possess acoustic sounds of their own. Anyone who has ever played such an instrument (electric) knows this to be true from experience. Even the brand and type of strings used on an electric guitar can dramatically affect the sound, and this can be detected without connecting the instrument to an amplifier. Then the cable and amplifier further modify the sound. Players choose amplifiers on the basis of sound as much as a violinist chooses a bow or a woodwind player chooses a reed. Have you ever wondered (or cared) why such amplifiers as the Fender Twin Reverb, Mar-

shall Concert Stacks, or HiWatts have lasted so long? They have sounds of their own. JA is on target with his refutation of T4S's John Nork, at least in this regard. While it may be impossible to discern on a recording the amplifier in question, I think Mr. Atkinson would find it rather easy to tell if the player was using a different amplifier from his usual choice.

Gregory Campbell
Hancock, MI

Just when you thought it safe . . .

Editor:

Just when you thought it was safe to go back to the "Letters" column . . .

I regret to inform you that one more on rock as an acoustic standard is warranted. As a critic who's seen over 3000 sets of live rock 'n'roll in the past 13 years (by 600-700 bands in well over 100 venues) yet who has a healthy love for symphonic music, I think I have some points worth making.

To begin with, JA's extremely interesting response to Peter Reichelt's latest letter (August, p.23): while it is of course true that electric guitars have little or no acoustic signature, they have a distinct *electronic* signature imparted by the pickup. There's no mystery here; the double-coil "humbucking" pickup on a Gibson Les Paul is a very different beast from the single-coil pickup on a Fender, and the different constructions of Telecaster and Stratocaster pickups (or even early and late models of the Strat), and the resulting more subtle difference in sound, is well known. *This* is what JA is hearing.

As far as different guitar amplifiers imparting different sound, if JA can't hear that, too, he simply lacks the proper education. A week at CBGB (or the Santa Fe equivalent) should suffice. I vividly remember playing a new album for a roommate (like myself, a guitarist) to get his reaction to some particularly fine sonic-assault guitar, and his shouting "Marshall amp!" upon hearing the song's *first note*—which was admittedly a squeal of feedback. (It couldn't have possibly been a Mesa Boogie, the other current favorite.) While bass amps, which are more often solid-state, have less of a distinct character, there are actually guitar *effects* that one can spot right off—the Boss Chorus, for instance.

In his January letter, Mr. Reichelt uttered the



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heinous and all-too-common phrase "pop and rock," which is a little like saying "wrestling—both pro and amateur." I don't think he really needs to be reminded of the enormous difference between the two (despite the best efforts of the former to convince consumers that they are buying the latter). In pop music, the recording itself is the work of art (unlike traditional music, where it is, of course, the score, or jazz, where it is each and every performance); they are essentially studio creations which do not in any way (and are not intended to) represent a live music performance. They are thus, as many have correctly pointed out, worthless as an acoustic standard. What you hear when you see Madonna perform, for instance, is an attempt—ultimately doomed to failure—to *recreate* on stage what was *created* in the studio: strangely, the precise reverse of the dilemma that most great rock bands face.

Because there *is* still such a thing as genuine rock music, which can be defined as a style in which the musicians are granted a strictly limited degree of freedom to depart from or elaborate on the basic score, and indeed are expected to do so to generate and communicate excitement. The work of art is thus the *theoretical ideal* of the score (as played by that specific group of musicians). Thus the live performance and sound are preeminent, and the recording an attempt to capture them.

Mr. Reichelt correctly points out that most rock concert-goers hear the music through highly colored horn drivers. If his goal is to recreate the sound at the 47th row of Madison Square Garden, he may indeed be better off with Klipschorns. But there *is* an absolute sound for a rock band, and that is the direct, live sound from the stage, with the amplifier volumes determined by the acoustic volume of the drumkit (which can be extraordinarily loud) and only the vocals through the PA—which then stands in the same relationship to the singers that the instrument amplifiers stand to the musicians.

That is, indeed, precisely how all rock bands rehearse whenever possible, and it is often how they hear themselves on stage in their infancy and youth, before stages get large enough that instruments as well as vocals are needed in the monitors. It is also the sound of rock 'n'roll as played in tiny, hole-in-the-wall clubs. *All* the elements in the signal chain, at this point, have a distinct sonic signature.

Anyone who's heard a lot of rock 'n'roll in small clubs thus has a good shot at using it as a reference when they audition for equipment. All they need are one or two bands whose live sound they're intimately familiar with, and whose records they know were produced with faithfulness. Those lucky enough to have followed a local scene with some fervor have a good chance of satisfying these criteria. Boston, for instance, has at least two superb local producers in Rick Harte and Lou Giordano, and most of the top hometown bands have worked with one or the other. When I audition gear I use Mission of Burma's Rykodisc CD and the Lyres' *On Fyre* from New Rose.

These—especially the former—also put the lie to Mr. Reichelt's thesis that certain breeds of rock 'n'roll are invariably poorly recorded, and achieve their unique effect in part because of it. Maybe badly recorded music *does* sound better on lousy systems. But the Mission of Burma CD is about as visceral and powerful as rock gets—fierce, high-energy, high-entropy music—and most of it sounds glorious on a great system. Which is to say, maybe, that "the release of anger" can itself be "a sophisticated emotional and intellectual experience," rather than an alternative to it.

Indeed, the combination sounds like a description of rock at its best. Has Mr. Reichelt listened to "My Generation" or "I Can See For Miles" recently?

Which brings me to my last point. In comparing rock 'n'roll and "serious" music as art forms, Mr. Reichelt is forgetting all about Sturgeon's Law. "Ninety percent of everything is trash"; rock is no exception. The classical repertoire we all know so well is a carefully cultivated ten percent. Before he goes overboard extolling the virtues of classical music at the expense of rock, let him try confining his listening of the former to a single 20-year period.

Even then it would, however, be a rigged game. Thanks to the music and radio industries, ninety-five percent of the rock music worth cherishing simply doesn't get heard. One hopes that Jack Bruce's early '70s solo albums and the works of Mission of Burma, Big Star, and Pere Ubu, for instance, will be well-known classics 200 years from now; in the meantime, they couldn't be more obscure! Until Mr.

1 This letter was written *before* I discovered Beth Jacques's very welcome review in the back of the issue—a fine job, if rather too cautious in its praise.

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Reichelt has explored all *this* stuff, his view of the relative merits of the two styles is necessarily warped.

Eric M. Van
Brookline, MA

Richard goofs

Editor:

I enjoyed the article by Christopher Breunig on Sir Adrian Boult in your July 1989 issue. However, I have two comments:

First, RL's footnote stating that most of the recordings cited in the article are available only in the UK is incorrect. I do not know where Mr. Lehnert does his shopping for recordings; however, all of the Boult EMI recordings cited in the article are readily available on CD in the US. The Nixa label is admittedly a little harder to find, but I have also seen it carried in some of the better record stores in the US, and it is advertised in some mail-order CD catalogs. Granted, neither EMI nor Nixa is an American label, but their CDs are most definitely available outside of the UK. (Also, some of the older Boult recordings were available briefly in the US on the imported PRT label.)

Second, I was disappointed to read in the article that the Lyrita recordings will remain unavailable for the foreseeable future. It is true, of course, that many of the recordings in the Lyrita catalog have been superseded by newer recordings of the same works on Chandos, Nimbus, etc. However, newer is not always superior. Moreover, some of the works available on Lyrita are still unrepresented on other labels. I would urge that some enterprising recording company buy the rights to the Lyrita catalog and begin reissuing it on CD.

Richard S. Sandmeyer
Aberdeen, MD

While checking the US availability of the recordings mentioned in Christopher's article, and in the dearth of comprehensive classical record stores in New Mexico, I consulted the then-current Schwann catalog and published the results in my footnote. My apologies for any inaccuracies.

—RL

LSB goofs

Editor:

I thoroughly enjoyed reading Les Berkley's excellent review of two Bach harpsichord recordings in the August issue. However, the Wildboar recording engineer's name was misspelled throughout the article. (Michael Lynn's

name was correctly spelled in the heading.)

Mr. Lynn is an accomplished musician himself and approaches recording with a sensitivity to the music that is not always present in other recordings. Perhaps it is this sensitivity which results in the more reverberant acoustical environment of the Wildboar LP.

Roger W. Sherman
Seattle, WA

Gary goofs . . .

Editor:

Gary S. Krakow's review of Living Colour (August, p.191) was essentially on the money except for two aspects. First, William Calhoun may have received the Buddy Rich Award at Berklee, but he received it because he is a drummer. This should be obvious from the name of the award. More recently, Mr. Calhoun received the "Up and Coming Drummer" award from *Modern Drummer* magazine. Muzz Skillings is the bassist.

Second, for Mr. Krakow to compare Living Colour to Guns 'N' Roses is absurd: Guns 'N' Roses is a fad for 16-year-old kids. Living Colour has a valid message in their music.

As for the people who cannot deal with the fact that Living Colour is a black rock and roll band—that is their loss.

Steve La Cerra
Brooklyn, NY

. . . but wasn't scared

Editor:

I thoroughly enjoyed Gary S. Krakow's review of Living Colour's new album *Vivid* (August 1989, Vol.12 No.8), but Mr. Krakow seems to have some of his information mixed up. . . I thought it was great that Mr. Krakow discussed the White/Black issue the band has been facing and wasn't scared to talk about it. Keep up the good work.

Ben J. Hoffman

Young musician and percussionist
Columbia, MD

Time for a change?

Editor:

It's time for us to make a fundamental change in the way we do things. That picture of Mr. Thiel's CS5 crossover in August should be enough to scare anybody. What do you say we get together and do something about those silly passive crossovers?

There isn't a reason in the world for serious audiophiles to use single amplifiers and big,

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David S. Hall

David Hall, *President*

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ugly crossovers between their amps and speakers. It's just damned stupid a hundred ways. Passive crossovers ruin an amplifier's control over a speaker, sophisticated ones are heavy and expensive, they all must be compromised to a certain degree of electrical efficiency, eat power anyway, are nonlinearly microphonic; all things considered, it's a miracle that they ever work well.

And all this because people just want to hook up one pair of wires. What a hell of a price to pay for such a tiny convenience.

I propose, as an audiophile standard, one conventional dual-channel amplifier for each loudspeaker system. Let the loudspeaker designers do whatever they want to do within that standard. This will be an entirely optional alternative system, to be used whenever a designer considers it appropriate.

Is this arbitrary? Yes. Is it imperfect? Yes. Is it limiting? Yes. Is it a heck of a lot better than what we're doing now?

Yes.

Before anybody's argument reflex kicks up, what could you possibly say against this scheme that would make it not a terrific improvement over the way things are being done now? Bi-amplification would distinctly increase efficiencies, and generally render unnecessary the hysterically overbuilt amplifiers sometimes used to force dynamic systems into obedience² (other technologies are another story). Intermodulations would vanish to a surprising degree. With a stereo amplifier sitting behind each speaker cabinet, you wouldn't need much speaker cable, avoiding its problems, which are plenty. You could even choose appropriate high-frequency and low-frequency cables; experimentation would be fairly cheap fun.

A bi-amp system would, of course, require a specific active crossover for the top section/bottom section splits (three-way-and-up systems will still have some crossovers aboard, but greatly simplified ones). Of course, this is an area where a sloppy designer can screw up, but so what? *Nobody's* enough of a liberal idiot to throw out the baby for a reason like that (are they?). We can expect certain individuals to emerge as quality subcontractors for the system manufacturers. It's just not a problem

unless somebody makes it a problem.³

And hold on to your hats: It will be so easy to include application-specific tone controls in the active crossovers that their presence will become a matter of course. Compensation without degradation! A manufacturer can have a knob for controlling the treble edge that some people like, bass alignment filters; all for free in an environment of existing filters.

None of this stuff is news. It's all so promising that it sounds like a high-tech dream, and it's not at all. Teenage rock bands do it, it's common in car stereo, so where the heck are we? The only reason that bi-amplified systems aren't common in home stereo is that nobody's had the nerve to say, "Let's set this arbitrary standard, work with it, and we'll get generally better results."

Well, damn it, let's do it.

Let each of the better multi-driver speaker systems come with a black box; we'll put a nice little amplifier of our choice behind each cabinet. There will be immediate improvements in clarity and dynamics and efficiency. As development follows this path, we'll be far beyond anything possible with the restrictions of today's passive boat anchors.

Hilary Paprocki
Rochester, NY

Whither video reviews?

Editor:

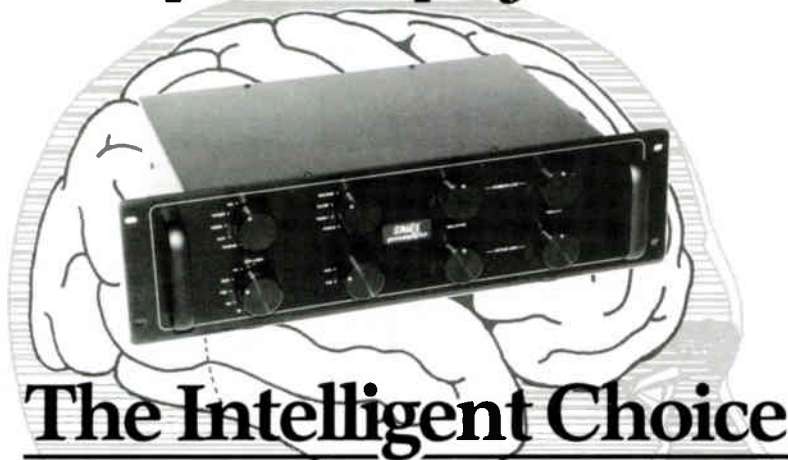
I feel compelled to write you for the first time with one comment and one correction. My comment is on the demise of *High Fidelity* magazine. In the August issue, you note your astonishment at the amount of coverage devoted to video. No, I am not going to engage in a diatribe on the increasing integration of audio and video. I agree with your comment, but as a videophile as well as an audiophile, I lament the passing of *HF*, because its reviews of video equipment were vastly superior to those in either of the mass-market video magazines. For example, *HF* alone measured the video frequency response of tuners in monitor/receivers, and VCRs.⁴ After all, what good is a monitor with 700 lines of resolution, or an ED-Beta, or S-VHS, or Hi-Band 8mm VCR, if the receiver portion doesn't even come close

³ Pardon the plug, but the people at Ashly are very smart and very helpful.

⁴ This is analogous to testing a receiver and forgetting to test the tuner in addition to the amplifier portion.

² This kills me. It's like compensating for a rubber driveshaft by bolting in a Hemi.

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to the 336 NTSC limit, but instead puts out a measly 200 lines of resolution, which, unfortunately, is the rule rather than the exception. So I, for one, do mourn the passing of *HF* for one of the very reasons you don't. (Of the two "videophile" publications, *Videofax*, which had outstanding reviews, is down the tubes, and *The Perfect Vision* (sister publication of *TAS*) publishes very intermittently, has few reviews, and suffers from the same one-person bias that characterizes *TAS*.)

My correction is on p.145, where the assertion is made that "Shure HTS is still the only major holdout in the Pro-Logic sweepstakes." This is not true. Fosgate also uses proprietary logic circuitry called Pro-Plus, based on the work of Peter Scheiber and Jim Fosgate. Pro-Plus is not similar to or based on Shure's Acra-Vector system; nor is it based on Dolby Pro-Logic. (For example, Pro-Logic decoders have a fixed release of one second, while Pro-Plus decoders have variable release times. Further, in the Wide mode on Fosgate decoders, they *alone* are capable of projecting a true stereo image to the rear channels.) While I appreciate that for a variety of reasons you may not have been able to test a Fosgate decoder for your article, it seems to me that within the context of the paragraph BS could have mentioned that Shure is *not* the only major Pro-Logic holdout.

Robert A. Whitehead
West Hartford, CT

Whither Videofax?

Editor:

I was just going through some old magazines and found a copy of *Videofax* #3/4. Whatever happened to it? Do you recommend any other magazine with a similar focus?

Fred Jeffery
Saugus, MA

Videofax, edited throughout its history by Marc Wielage, was briefly published by J. Gordon Holt, from 1986 to 1987 (though it had no connection, financial or otherwise, with Stereophile). The last address we had for it was P.O. Box 481248, Los Angeles, CA 90048-9743, but I understand that it has since been merged with the eminently readable *The Perfect Vision*, edited and published by Harry Pearson. An issue of TPV has not appeared for a while, but a recent editorial leader in *The Absolute Sound* stated that one was in preparation. A subscription to TPV costs \$22 and

is available from *The Perfect Vision*, P.O. Box 6384, Syracuse, NY 13217. In the meantime, the venerable JGH (in whose ears we trust) is publishing a videophile newsletter called Video Theater, available from 870 Crescent Drive, Boulder, CO 80303. (Again, this has no connection with Stereophile.) The third issue of Video Theater had just appeared at the time of writing and, according to JGH, a subscription costs "\$6 for 6 issues in the US, \$14 overseas (airmail), but will be going up to \$12 and \$20 respectively because nobody takes us seriously at our present ridiculously low rates."

—JA

TJN unfair to IDTV?

Editor:

I am responding to an observation Thomas J. Norton made in the August 1989 issue of *Stereophile*, because my experience at the SCES was quite different from his.

I also observed the Sony IDTV and was quite impressed by its performance. I am quite surprised by his pronouncement of expected improvements when HDTV makes its way into our hemisphere. Diagonally across from the Sony demonstration, Matsushita was showing its much heralded HDTV unit. While the wider aspect ratio of HDTV invalidates comparison of these sets with conventional television receivers of similar diagonal measurement, the fact that the top-to-bottom picture measurements of the Sony and the Panasonic display units were within an inch of each other does permit a fair comparison. The Sony's picture was sharper, more clear, and gave the *appearance* of greater detail. I went back and forth between the two displays a number of times to be sure my observations were accurate. When I asked the Panasonic representative if this was the quality of picture that would be available in the actual sets delivered, he proudly assured me that this was a working prototype of their best model scheduled for delivery. I found a number of other visitors to the show had the same reactions to the two displays that I was having. So much for the greater glory of future technology.

Back at the Sony display, I also found a 27" version of the IDTV. The picture was astounding, appearing even sharper than the larger-screen set. The Sony people told me that this set was currently on the market, only the \$4000 list price was a deterrent. After shop-



Silver Seven-t

NEW.



Bob Carver

I've just designed a new solid state amplifier. In many ways, it's my best work and I'd like to tell you about it.

I've given my new solid state Silver Seven-t more absolute maximum output current into low impedance reactive loads (including 0.5 ohms) than almost any amplifier I know of: 50 amperes. In fact, Dan D'Agostino's BIG Krell is the only one that tops it.

Not only that, I've also given the Silver Seven-t more output voltage than any other amp except my own Silver Seven Vacuum Tube Amplifier (which beats it, but only by a few volts). Nobody else's amp that I know of has more output voltage — and that includes the new OTL tube amps on the market.

I can get all this voltage and current because I have a great patent, the Magnetic Field Power Supply. In updated form with lots of energy storage, it easily produces *five times* as much current as any other power supply of the same manufacturing cost.

But Bob, how does it sound?

Beyond the sheer power required for explosive transients and rolling thunder, the ability of an ampli-

fier to reproduce the subtle, dimensional shadings of a delicate soundstage depends on its transfer characteristics (a scientist would say *transfer function*). I've given my new solid state amplifier a transfer function that comes as close as I can possibly make it to my Silver Seven Vacuum Tube Amplifier.

No, they are not *exactly* the same. But with production nulls at approximately 40dB, they are very, very close. So close that if I close my eyes and drop my concentration for a moment, the transistor version can completely fool me into thinking I'm listening to the vacuum tube Silver Seven.

Like the Silver Seven, the Silver Seven-t is a mono amp design, so you will need two for stereo; the pair costs \$2,000.00.

Until my next ad, warmest regards,

Bob Carver

Bob Carver

P.S. If you'd like to know more about transfer functions, voltage and current, and the Silver Seven-t, please write to Carver Corporation, Literature Department, P.O. Box 1237, Lynnwood, WA 98046.

CARVER

ping around, I found the set at a few dealers with an actual selling price ranging from \$2500 to \$3000. With a money-back satisfaction guarantee from my local dealer, I reached into many pockets to come up with the sum. I have not been disappointed.

Although a 27" screen is far from huge, the viewing experience is quite rewarding. Watching a good laser disc with the lights switched off and the Dolby Pro-logic⁵ unit switched in, the screen seems to grow enormously in size. Even the smallest dot in the fine print of the credits is clearly resolved. Since this dot is actually smaller than the fine detail normally observable in a scene on the large movie screen, I suspect that HDTV may be overkill in the resolution area, while ultimately disappointing in its aspect ratio. Most proposals do not even fill the normal wide-screen ratio, let alone the width of blockbuster Cinemascope-style movies still being filmed. I expect to be quite content with IDTV for some time to come.

Martin P. Neudel
Chicago, IL

What should we review?

Editor:

In your August "Letters," Anthony Mattina suggests that those readers who are looking for a better selection of affordable equipment read *Stereo Review*. Give it a break! Your recent reader survey (Vol.11 No.10) indicated that the majority of readers would be better served by an "enhanced" selection. It appeared that 68.3% of those responding found the Audio Cheapskate to be the most helpful and informative among all of your reviewers. It was also noted in this survey that over half of those who responded have systems valued at less than \$5000. (Consider also that some of this \$5k is in the form of signal processors, cassette decks, and even hi-fi video.) Sorry, folks, but this amount of money does not buy state-of-the-art sound reproduction. Nor does it correspond to the level of equipment most often reviewed. It is actually rather unfortunate that your editorial policy appears to parallel the thinking of people like Mr. Mattina, as eliminating columns like the Cheapskate does an obvious

⁵ Yes, I did say Dolby Pro-Logic. Since almost all theaters in this country are equipped with Dolby Stereo units, as are the majority of theaters in the advanced nations of the world, this is the steering logic that directors and professional sound mixers will be addressing for some time to come.

disservice to most readers. It would appear that more than half of your readers should instead subscribe to *Stereo Review*, at least according to Mr. Mattina. The loss of these readers would probably put you out of business!

The bottom line for these readers is that *Stereophile* is one of the few magazines that evaluates equipment for sound quality. Just because most audiophiles cannot afford state-of-the-art megabuck components does not mean they lack ears for accuracy. If you really want to serve what appears to be a majority of readers more effectively, your review policy should seek a better balance between the state of the art and what is affordable to most of those readers.

There are many good components priced between cheap mid-fi and the ultimate high end that are not being evaluated for sound quality, but I personally am not offended when they do appear in your magazine. Stop catering mostly to the elitist audiophiles (they are not the bulk of your support), many of whom feel the need to ridicule others for not living up to their standards (a disturbingly common occurrence in your letters column). Most average audiophiles who read *Stereophile*, at least the ones I know, aspire to own the ultimate in high-end gear but must make compromises due to economic factors. What they do not wish to do is lower anyone else's standard.

Dennis L. Chase
New Cumberland, PA

Affordable or SOTA?

Editor:

My feeling is that *Stereophile* should review anything that has stirred an interest in the audio community, and/or that would be of use to its readers. But as far as inexpensive gear is concerned, I feel that space should be allotted to only that equipment which represents exceptional value. I think *Stereophile* should do more to seek out such equipment, but I—and apparently many other readers as well—am not really interested in reading about, for example, inexpensive and not particularly successful loudspeakers.

Peter Aizupitis
Arlington, VA

See this month's "As We See It" for a discussion of the issues raised by Mr. Chase's and Mr. Aizupitis's letters.

—JA

Get Organized!

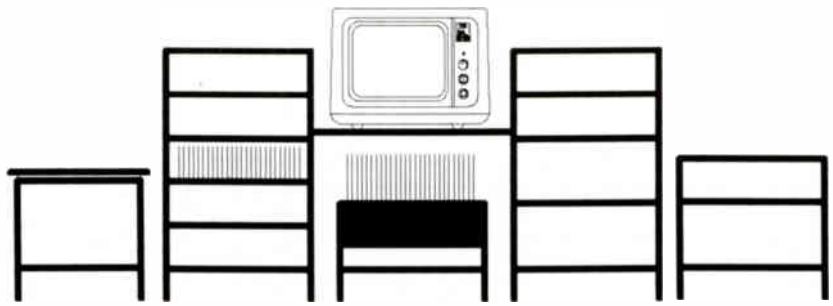
New Products from Sound Organisation

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You've probably seen the SO Stackers around. With a variety of base units and add-on shelves, they allow you to customize the configuration to suit your system. Now SO introduces the **Video Bridging Unit**. This shelf actually bridges the gap between two sets of SO Stackers, providing a convenient shelf for your video monitor. Just the thing to house your audio/video system. And, since you can add more stackers later, you're always ready for that new piece of equipment.

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Theta helps out

Editor:

Following Lewis Lipnick's review of the Theta DSPre in the March issue, some of your readers may be concerned as to the quality of Theta's service. Four grand is a lot to spend for a preamp from a new company. My story may be of some help.

I purchased a DSPre from an audio store in Akron, Ohio on December 16, 1988. Upon getting it home and in my system, there was a loud scratching sound in the left speaker when the volume or balance was adjusted. I called the store and talked to the salesman who sold me the DSPre (who also happened to be the owner of the store). I've made the drive from Pittsburgh to Akron quite a few times in the past couple years, purchasing components from this store. I thought the salesman/owner would want to rectify my situation quickly. Well, he said they were very busy (holidays and all), and I should be talking to their serviceman.

The serviceman was sure I didn't know what I was doing. After playing "20 Questions" with him, he finally agreed there may be something wrong with my DSPre. He said they were very busy (holidays and all), and I should wait a month to send him the DSPre. I agreed to this. After all, if he was going to work on my \$4000 preamp, I didn't want him mad at me. A friend who was also a DSPre owner suggested I give Theta a call.

Mike Moffat answered the phone. I told him of the left-channel noise. He said he had not seen this in any other DSPres and wasn't sure where the problem was coming from. He wanted me to send him my DSPre so he could duplicate the left-channel noise. He did not want the store where I purchased it to work on it. He said he might need a few days with my DSPre to get things right, and if he couldn't, he'd ship me a new one. He then asked if I would wait till the Las Vegas show was over because he was working to get a large number of DSPres ready for the show. This was fine with me. Then he asked for the serial number of my DSPre—883506—and told me this is a coded number—mine was the 6th DSPre made in the 35th week of 1988. This DSPre had apparently been shipped to the store in early October, which put me off a bit, because I ordered it in the beginning of October and the salesman/owner had told me it would take two weeks to come. (I then called the store every

week till December 15. When I talked to the salesman/owner on Dec. 15, he said my DSPre had just arrived. When I arrived at the store to pick up my DSPre, the store no longer had a demo DSPre.)

Mr. Moffat decided to take care of my DSPre immediately and asked me to ship it to him Federal Express second-day air. He paid the freight in both directions, and asked me to call him collect if I needed to call again. Two days later he called to tell me a resistor had gone south. He replaced it and did two upgrades at no charge. He said with the upgrades my DSPre sounded ". . . awesome." He was right!

Mike George
Pittsburgh, PA

PS: I no longer have to take three-hour drives to escape Pittsburgh's audio desert. I found an oasis in Better Sound Concepts. Their staff is friendly, knowledgeable, and service-oriented.

Discman disappointment

Editor:

I bought a Sony D-25 Discman on *Stereophile's* recommendation, and while I am certainly not disappointed, I am not as delighted as you would have us readers be. (The player is a D-25 because that has supplanted the D-15 you recommended in Vol. II No. 9 and Vol. 12 No. 4, and is 4x-oversampled rather than 2x-, thus should sound better.) I thought the sound was not in any way comparable with my Mission DAD 7000, which I bought several years ago. The D-25 is coarse, and sometimes tends to shrillness. The little light on the screen does not come on when the charger is not plugged in. The controls have the confusion that all Japanese products have because they offer things that no one could possibly want.

I will use the D-25 with pleasure, but thought that someone should express a less enthusiastic feeling for this little machine. It will serve nicely on vacation, which is why I bought it.

Edward H. Bennett, Jr.
Lake Forest, IL

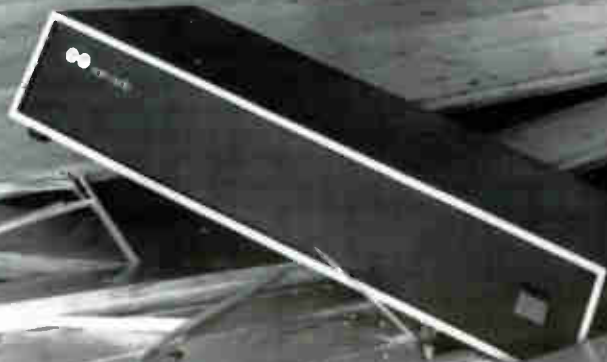
Discman repairs #1

Editor:

In January I replaced my first-generation Technics portable player with a Sony D-15. Apart from the sound and a slight increase in tracking problems, the D-15 solved most of the inadequacies of the Technics. But after four months the D-15 started shutting off for no reason.



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Now it has spent more than two months at a service center recommended by Sony (20 minutes on hold), which could not fix it. And now it has been sent to the factory for repair. Tomorrow I will be going on my vacation without it. I am told I will have to pay at least one-third the original price to have it fixed. For this I have paid a \$25 deposit. I must be patient, and understand. Denon made adjustments on my DCM-555 in 2½ weeks, 10 months after I received it, for a \$5 shipping fee.

Patience and understanding are necessary, but I hope that Sony will understand that I don't intend to recommend their products or buy another.

Stephen Sweigart
Cherry Hill, NJ

Discman repairs #2

Editor:

When I read Bill Sommerwerck's review of the Sony DT-10 (in May 1989, Vol.12 No.5), his comments about the D-7s hit a raw nerve. I had the misfortune of buying first a D-5 and then a D-7s. Also, it seems that I had the misfortune of being younger than 21 and was not a contributing editor to a high-end audio mag. To make a long story short, both the D-5 and the D-7s were "below average quality." The D-5 lasted a year and three months (I wrote it off as being new technology, since it was one of the first produced), and the D-7s, held in high esteem by many, lasted *exactly* until the warranty ran out and then could not be used. When I brought in the D-7s to the store I had purchased it from to get a new one or at least to get it fixed, I was told (and I quote), "Go to hell, kid." When I tried to get some satisfaction from Sony, no reply was given. It seems that being an adult (as I am, now) and an editor entitled Mr. Sommerwerck to special treatment not given to me. I would be quite pleased if you would publish this letter in *Stereophile*. To say the least, I have not bought a thing from Sony since.

Richard Myers
Beachwood, OH

Regarding the letter from Mr. Bennett, the fact that we recommended the D-15 highly cannot be taken as a guarantee that its replacement will be even better due to its use of 4x-over-sampling rather than 2x. Would that life could be that simple!

When it comes to the letters about limited lifetimes for Sony Discmans (Discmen?), I

should point out that, like Mr. Sommerwerck's and Mr. Myers's, my Sony D-7s (bought at retail) died after only 20 months' use, and that rather than pay a stiff repair fee, I bought a different machine. Perhaps the issue here is that, like an inexpensive watch or camera, a portable CD player should be regarded as a disposable item—if it breaks, throw it away, buy another. The cost of the skilled labor to repair the component is out of proportion to its purchase price. However, I forwarded copies of these letters to Mark Finer, Sony's spokesperson: his response appears in this month's "Manufacturers' Comments."—JA

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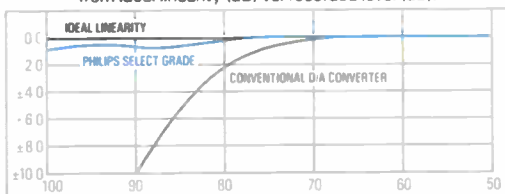
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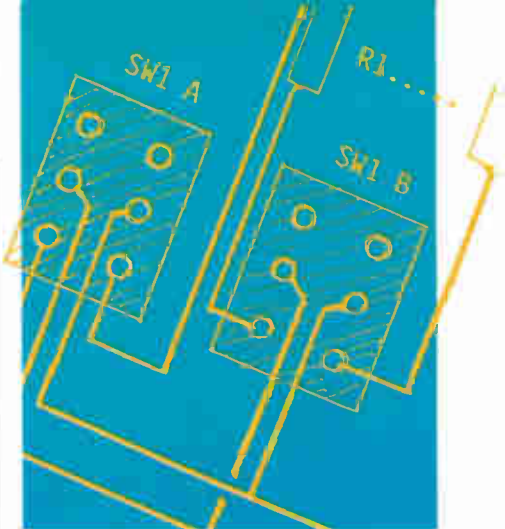
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UPDATE



USA: John Atkinson

According to a report in *This Week in Consumer Electronics (TWICE)* in September (Vol.4 No.36, pp.5 & 46), an American company called Finial Technology was to launch a laser-optical LP turntable at the Tokyo Audio Fair in October. "Wow!" I thought. "That's what all of us analog addicts have been waiting for!"

But this concept seemed vaguely familiar. Hadn't someone already launched a turntable that played LPs by reading the grooves with a laser?

Why, yes.

In the very first issue of *Stereophile* that I edited, Vol.9 No.5 (August 1986), we ran a story by J. Gordon Holt on how impressed he had been by the sound of a turntable that used a laser to read the mechanical groove modulations. We even made it the cover story because the turntable was due to be launched before the end of that year. The company was called Finial Technology. Then I turned to p.41 in the January 1989 issue of *Stereophile* to read "Now that the Finial Technology laser turntable is available through at least a handful of dealers..." However, in the February 1989 issue of the magazine (p.46), readers were told that "Finial had decided that the player was too expensive to produce and had abandoned the project, dismissing the relevant staff."

Could it be that the Finial Technology due to launch an optical turntable at the Tokyo show was the same Carillon-owned Finial Technology that confused journalists and consumers alike by holding two press conferences within a seven-week period at the end of last



Finial's LT-1 Laser LP player

year, first to announce that production samples of the turntable had reached dealers, second to announce the cancellation of the whole project?

Why, yes.

Only now, it appears that the projected retail price for the optical turntable is to be "in excess of \$20,000" rather than the original \$3786—I loved the confidence Finial showed by quoting an illusory price to all four significant figures—and that it is to be manufactured in Carillon's facility in Japan rather than in the US. In addition, the *TWICE* article indicated that Carillon was preparing to sell the 35 production prototypes that had been made before the plug was pulled on the entire project. *Stereophile's* Peter Mitchell will be reporting from the Tokyo Audio Fair in the December issue, so we shall see how "real" a product the Finial turntable appears to be. In the meantime, Peter offers the full story behind the Finial's revival below. Carillon's Jacques Robinson went on record in *TWICE* to say that the Finial turntable would be demonstrated at the January 1990 CES but "probably in a private hotel suite. . . to avoid distracting dealer attention from the firm's ADC hi-fi line."

In view of this product's history, I am not going to hold my breath waiting for a review sample.

USA: Peter W. Mitchell

In this Halloween season, when ghosts arise from the grave and walk abroad in the land, the story of the month has to be the return to life of the on-again off-again Finial Laser Turntable. Production plans, dealer appointments, and retail price (\$3786) were announced by Finial a year ago, but only 35 were built and only about half of those worked correctly. (The miniature optics in the tracking head proved unexpectedly difficult to align.) Thanks to that and other problems, the company decided that the retail price would have to be doubled. Since there "obviously" would be no consumer market for an \$8000 record player, Finial canceled the turntable last January. But three years of advance publicity had built up high expectations among LP collectors, and a crash of disappointment resounded around the world.

Finial hoped to sell the design to a larger company with the financial and engineering resources to manufacture the turntable efficiently, but no attractive offer emerged. Meanwhile, requests continued to flow in from potential customers, including both well-heeled record collectors and institutions attracted by the promise of wear-free play of unreplaceable LPs. The message that Finial heard, both from eager customers and from consultants, was that this product must not be allowed to

Pedigree



In Britain – home of many audio aristocrats – one name is legendary. So seminal, in fact, that several dictionaries list “Tannoy” as the synonym for “sound system.”

62 years after its founding, Tannoy remains the loudspeaker of choice for audio professionals. More recording studios choose Tannoy for their monitors than all other brands combined. It is no coincidence that 98 of the 100 top-selling albums since 1983 were mastered on Tannoys. In 1988 the industry recognized Tannoy’s accomplishments by making it the first loudspeaker to receive the prestigious TEC award, created “to honour the audio industry’s greatest achievements.”

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die, and some customers would pay almost any price to possess it. This persistent demand, especially from audio professionals and institutions, convinced the company to look harder for a way to produce the turntable, not as a mass-market consumer item but as a special-order industrial product. Production has been moved to Japan, where aligning the optical head shouldn't be difficult for technicians used to the tiny optics in CD players. The bad news is that since the laser turntable will be produced in small quantities and will be sold mainly to people for whom cost is no object, the price will be a cool \$32,000.

How can the price of a product jump by a factor of eight? The answer has to do with a basic change in marketing philosophy, from a "consumer" product to a limited-production device for a special market. (Some high-end audiophile products also fall into the latter class, for example the Wilson WAMM speakers and Mark Levinson power amps, for which the total market may be only a few dozen or few hundred units rather than tens of thousands.)

The laser turntable was planned as a consumer product, meaning that the million-dollar development cost did not have to be paid back out of early production. The initial price was set as low as possible in the hope that a reasonably large number of audiophiles (a few thousand) would buy it. With the resulting cash flow the turntable then could be re-engineered for efficient mass-production in Japan, cutting the manufacturing cost in half. That version, priced under \$1500, would sell in large enough quantities to pay back the development cost and make the company truly profitable.

But when production difficulties pushed the price up and undermined this plan, Finial concluded that the turntable had no future as a consumer product—especially since many new recordings aren't even being issued in LP form. It is being revived for a market of a few hundred, perhaps only a few dozen, customers who need to play existing libraries of unreplaceable LPs. Since mass-production is no longer contemplated, Finial chose a price that will pay back the development and tooling cost even if only a few dozen are sold.

In normal product marketing, prices are affected by "demand elasticity": lower prices stimulate increased demand, which enables manufacturing to become more efficient. In theory there is an optimum price point for each

product at which the number of sales and the profit per unit combine to generate maximum overall income for the company. Airlines are masters of elastic pricing; when you fly from L.A. to New York, the fellow in the next seat may be paying two or three times as much as you for his ticket. The 250 seats on a plane take off and land at the same time but are priced at a dozen fare levels, each with different restrictions. It's unfair and often frustrating, but it works; planes carry fewer empty seats and airline profits are up.

With expensive products there is a price level above which elasticity vanishes or reverses, so that demand actually rises with price. This occurs occasionally in high-end audio: a \$6000 amplifier becomes desirable precisely because it is so expensive. (Never mind that the selling price can be totally unrelated to manufacturing cost. There is also an unconscious assumption that if it's that expensive it *must* be good.) Exotic cars like the Ferrari Testarossa have a similar cachet; their inaccessibility to ordinary mortals makes them more desirable.

At \$32,000, the laser turntable is now in that realm. Finial expects to sell a few dozen turntables to sound-archiving museums, recording studios, radio stations, and to a few wealthy LP collectors. Some of the world's wealthiest audiophiles are in Asia (notably in Japan, Hong Kong, and Singapore); so Finial is re-launching the laser turntable at the Japan Audio Fair.

The market for this luxury product may be larger than Finial suspects. It probably deserves a spot in this year's Neiman-Marcus Christmas catalog, next to the sable coats and jewel-encrusted cigarette lighters. The combination of its exotic price and its unique status as the world's only light-beam turntable ought to make it a natural for Texas millionaires, for oil sheiks in Iraq and Saudi Arabia, and for gadget-loving show-business folk from Johnny Carson to Stevie Wonder, who will also value the Finial turntable for its CD-like operating convenience and its built-in tick-and-pop filter.

Many potential customers for the laser turntable don't care whether it equals a Goldmund, or even a Linn, in sonic refinement. Nevertheless, we will try to obtain one for review. If Finial sells enough turntables to non-audiophiles to pay back the development cost, perhaps next year the price could be cut to a level that mere audiophiles can afford. You won't be able to audition it at your neighborhood audio

salon anytime soon; but if you're seriously interested, you can see and hear the turntable at Major's plant in Sunnyvale, CA. (The nearest major airport is in San Jose.) Call (408) 720-9800 to make an appointment, and bring your most challenging records. If you only want background information, you can buy the owner's manual for \$100.

Jitter correction again

My curiosity was stimulated by Bob Harley's note on JVC's K-2 digital interface (September, pp.36-47) and his observation that timing jitter can alter the decoded sound even though it does not introduce code errors. Searching through back issues of a Japanese trade magazine, I found several references to this problem in recent articles about CD-player design.

As it turns out, the Kenwood "digital pulse axis control" (DPAC) circuit that I described here in August (and whose operation is similar to the K-2 interface) was not the first attempt to stabilize the time-axis of the digital pulse signal before decoding. The "digital sync" IC in Sony's top-of-the-line two-piece RI CD player accomplishes the same function, regenerating a clean pulse-code signal that is precisely synchronized with the decoder's master clock.

Several manufacturers became aware of time-axis problems when they began using fiber-optic links in addition to (or in place of) copper-wire connections for the digital signal. Evidently the photocouplers used in many optical links, while fast enough to handle a 44.1kHz signal, are not fast enough to handle the 8x-resampled output of the digital filters in many recent players. Therefore Pioneer's DAC-equipped integrated amplifier contains both an "optical transmission distortion correction circuit" and a narrow-band PLL (phase-locked loop) that stabilizes the timing of the recovered pulse code. Kenwood's DPAC also contains a narrow-band PLL just ahead of the D-to-A converter, for the same reason. Fisher's top CD players have a jitter-rejection circuit connected to the digital interface transmitter that drives its digital outputs.

Several articles noted that vibration of fiber-optic cables can be a significant source of timing jitter. Other sources include power-supply noise, ground-circuit noise, and sample-to-sample variation in the time needed by the digital filter to do its re-sampling calculations and

interpolations. So even though the digital signal coming off the disk is stabilized in every CD player by a crystal-controlled buffer before it goes to the digital filter, it may acquire new timing irregularities by the time it gets to the D/A converter—especially if the D/A is in a different box, separated by interface circuits and a coaxial or optical cable that is being vibrated by your woofers. This may help to explain why, in some comparisons involving theoretically superior outboard D/A converters, the CD player's built-in DAC has sounded better.

One effect of timing jitter is directly observable in the output waveform. If the digital code for a pure high-frequency signal (say, 20kHz) is modulated by relatively low-frequency jitter (500Hz, for instance), then examination of the decoded waveform with a spectrum analyzer reveals the presence of sidebands at 20kHz plus and minus multiples of 500Hz. This is a form of intermodulation distortion; in fact, the measured output looks remarkably similar to an analysis of the scrape flutter in an analog tape deck!

There appears to be a broad consensus among leading Japanese designers that timing jitter is a significant source of sonic aberration, although we don't fully understand why. It remains to be seen whether all jitter-compensating circuits are equally effective, whether a standard test can be devised to disclose a player's relative immunity to jitter effects, and whether CD Soundrings have any sonic effect (for good or ill) in a jitter-corrected CD player.

DAT SCAMS?

Can the initials of the DAT one-copy scheme, SCMS (Serial Copy Management System), be turned into a pronounceable word? A similar problem arose a few years ago in the computer field, concerning the SCSI interface that provides a convenient plug-in connection for hard-disk units and other accessories. Two solutions were proposed based on the insertion of a vowel sound: SeCSI, pronounced "sexy" (appropriate for a connection), or SCuSI, pronounced "scuzzy." Oddly, the latter is more widely used, though the actual performance of the SCSI interface is fine.

Of several possible pronunciations for SCMS that come to mind, I like "scams," reflecting the fact that this copy-protection system actually provides very little protection against piracy—which is appropriate since the problem that it

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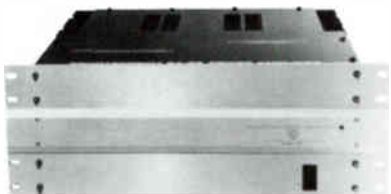


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was devised to solve was largely imaginary in the first place.

Incidentally, while the recording industry is withdrawing its active opposition to DAT recorders, no major record company intends to produce quantities of digital tapes for sale anytime soon. Aware that the SCMS circuit implicitly authorizes home copying of CDs, some executives don't want to support the DAT format until new laws impose royalty taxes on blank tapes—a proposition that Congress probably won't look at again for at least two years.

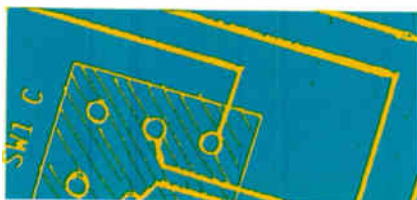
Shortly after the midsummer DAT compromise was announced, Tandy chairman John Roach endorsed it. In a published interview he added "We believe it does lay the foundation for agreement on CD as well, so we are ecstatic with the progress that was made." If the RIAA's sudden acceptance of the Philips one-copy proposal after two years of stalling was motivated by a desire to establish a precedent that could be applied to Tandy's THOR and other home-recordable CD systems, that goal may have been achieved.

Tandy's April 1988 announcement of its THOR recordable CD system suggested that the recorder and discs could be available as soon as Christmas 1989. That's not going to happen; the most likely target date is about a year away, *ie*, before Christmas 1990. But even if all the technical details are worked out, you might not be able to buy it then. One lesson of the DAT wars is that new technologies are governed as much by political economics as by engineering. Tandy may have the first home-recordable CD system, but it's not the only one in the works, and other manufacturers are unlikely to stand idly by while Tandy sells THOR to the world.

Recall that Philips first announced its Compact Disc in 1978, but discs and players didn't appear in stores until 1982-83. During that interval Philips negotiated a technology-sharing agreement with Sony, many parameters of the system were improved, and international committees selected the CD over other proposed digital audio disc (DAD) systems as the world standard. In a similar vein, there will be pressure on Tandy to withhold its THOR system from the market until international standards are adopted for the home-recordable CD. So while a Tandy-only THOR system could be marketed next year, we may have to wait several more years for an industry-standard system

incorporating technology from Philips and Yamaha as well.

What would people do with a home CD recorder? The conventional assumption in the recording industry is that CD recorders, like DAT decks, would be used mainly to copy CDs. The mental image that causes bad dreams at CBS is that of a teenager (or a professional pirate) buying one \$14 Springsteen CD and copying it onto dozens or hundreds of \$5 blank discs for resale. If that's what people want, they don't have to wait for THOR, or for an international standards conference. The technology exists today to produce the CD equivalent of a dual-well cassette deck for copying CDs. With no need for THOR's erasability, the duplicator would simply be a CD player with its digital output connected to a Taiyo Yuden CD-R recording deck. The latter is currently being produced only for professional users, but if the THOR system doesn't appear next year a consumer CD-R recorder might be produced to fill the gap, with a SCMS chip to limit the number of CD copies.



USA: Robert Harley

Classical music fans in Southern California were due for a shock at the time of writing: KFAC, the area's venerable all-classical-music radio station, was to stop broadcasting classical music sometime in September. Instead, the station's new owners intended to adopt a pop/rock format in the search for greater profits. This move will leave Los Angeles as the only area in the US with more than a million in population without a commercial classical radio station.

KFAC began broadcasting classical music in 1931 and has become an institution to Southern California music lovers. With over 800,000 listeners, KFAC commanded a sizeable audience and, consequently, advertising revenue. In fact, the station's advertising time was nearly always booked, resulting in a healthy operating profit of from \$2-\$3 million per year. With statistics like these, the inevitable question is:

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Why must KFAC die? The answer lies in a complex web of corporate greed, government deregulation, and the skyrocketing value of media commodities.

In 1962, KFAC was bought for \$2 million by Cleveland Broadcasting. By 1986, its value had increased to \$33.5 million. That was the price paid for KFAC by Edward Argow and Louise Heifetz, daughter-in-law of the famed violinist Jascha Heifetz. The new owners had no intention of selling the station, but they were made an offer they couldn't refuse. On January 18, 1989, Argow and Heifetz announced the sale of the station to the Dallas-based Evergreen Media Corp. for \$55 million, a new record price for a classical music station. With that large a cash outlay, Evergreen Media Corp. could not recoup its investment from a station earning "only" \$2–\$3 million per year. The company decided to scrap KFAC's format, listeners, and nearly 60 years of good will in favor of competing in the highly profitable rock radio market.

This strategy of buying a station solely for its antenna, license, and facilities is known as "buying a stick." ("Stick" is radio industry jargon for a station's transmitting antenna.) "Buying a stick" is analogous to a recent trend in Beverly Hills in which a perfectly good home is bought, then immediately demolished to make way for a mansion. Evergreen Media Corp. was not interested in classical programming. Rather, they were willing to pay that huge price for a "stick" in Southern California.

It was apparent that the new owners had to generate more income than KFAC's classical format was earning to pay off the debt incurred by the \$55 million purchase price. This huge price tag is partially a result of the Federal Communications Commission's decision in 1982 to drop the so-called "three-year rule." This rule stated that a radio-station owner could not resell the station for at least three years, discouraging speculators from buying and reselling stations for quick profit. When this rule was abandoned, smaller stations with modest profits became a hot commodity, driving up prices.

One beneficiary of KFAC's switch to a rock format is KUSC, a mostly classical public station that broadcasts from the University of Southern California. In addition to donating many rare records to KUSC, KFAC is urging its listeners to switch to KUSC. With only 318,000 listeners, KUSC could be in for a windfall. How-

ever, some industry analysts think that LA won't be without a commercial classical station for long.

Whatever the underlying forces that drove classical music from the Los Angeles airwaves, the fact remains that KFAC's demise is a blow to the cultural vitality of Los Angeles. On KFAC's last two days of classical programming, at the end of every disc jockey's shift, the program director had scheduled Haydn's Symphony 45, better known as the "Farewell."

UK: Ken Kessler

Xenophobia has nothing to do with my feelings that the two most important hi-fi launches at the 1989 Berlin show were British. With all due respect to the myriad German loudspeaker manufacturers showing wild and wonderful products, few if any are distributed beyond the country's borders. I admit that companies like Delec (a gorgeous full-remote-control preamp) and Einstein (the cleanest electronics ever produced) have potential beyond the Fatherland, but none of the German firms in the specialist hi-fi halls have the global recognition of Linn and Celestion. And both of these companies showed products which will "kick ass" in their respective sectors.

Linn showed (behind closed doors) a pre-production sample of the Linn Basik turntable first mentioned at the summer CES. I'd spent the intervening two months wondering what the company would produce, and they shattered my chances at becoming hi-fi's Nostrodamus by delivering something totally unlike that which I and others had imagined.

Not that we should be adjudged fools for anticipating a suspensionless, electronics-free Axis. After all, the target price is something like 70% of the Axis, so ditching the electronics and the subchassis architecture should be enough to produce the necessary savings. Instead, the Basik is an all-new turntable, and I'll stifle my disappointment until I hear it playing.

Disappointment? Well, yes. What greeted me in a private conference room on the Linn stand looked just like the new Rotel turntable at £80 (\$130) less. Only the Rotel is a chunky, solid piece of equipment while the Linn can at best be described as flimsy. But first the good bits:

The Basik comes fitted with the new Akito tonearm, the replacement for the Basik Plus. Among this arm's refinements are a fixed head-

shell, fatter armtube, ballrace bearings, and what seems to be more robust construction. The Basik is supplied without a cartridge. The platter is a slightly thinner and therefore lighter version of the Axis platter, with the sensible cost savings of an unpolished underside. The belt and felt mat are as per the Axis and LP12, while the bearing is the same as that of the Axis. Motor is the familiar 115V device installed with a dropper resistor, while the on/off switch resides under the edge of the platter.

The rest of this two-speed belt-drive deck is a mix of the good and the tacky, especially when compared with the Axis itself or with the less expensive Rotel, the AR (with its true suspension), the beautifully constructed Regas and Revolvers (the former coming supplied with one of the best arms on the market), various Thorenses, and a host of others.

Item 1: The Basik features a cast, machined-plastic stepped pulley and inner-platter/hub. (Speed change is *à la* AR and Rega, by manually moving the belt.) Metal fittings at this price do not seem unreasonable, but I await the inevitable sonic justification.

Item 2: The turntable rests on three solid-rubber, nonadjustable feet, replacing the complex ones fitted to the prototype. I'll assume that they sound better.

Item 3: The base itself is made from relatively thin, folded Medite instead of the solid blocks seen on other suspensionless designs. A spoon-shaped tin thingie covers the motor and wires under the plinth.

The end result is a lightweight product which, I imagine, will inspire Linn to issue a missive about how wonderful featherweight technology is for budget turntable design. If I sound cynical about this, keep in mind that these feelings come only from examining rather than listening to the product. But for whatever such impressions are worth, I have come to expect something more substantial from specialist-sector budget turntables and from Linn themselves. A British dealer who examined the deck when I did and who sells an awful lot of Linn equipment was utterly disappointed that the deck should look (I said "look," not "sound") like such bad value next to the Rotel and Revolver. What it points to is an illustration of the UK market, wherein—for many customers and dealers—a Linn badge is all that's needed to confer worth.

I may be wrong, and this turntable could

perform like a dream. That presupposes a belief that the bearing is everything, but nothing surprises me anymore. I just didn't expect that a company like Linn, so enamored with its reputation for engineering, would deliver a product which appears to so cynically wear its cost-cutting on its sleeve. You can expect at least one magazine to give this product the kind of reviews clergyman will reserve for the arrival of the Messiah, while a core of dealers will be choosing the colors of the Porsches for which the Basiks will pay. Even though it could be argued that this turntable should have been released 10 years ago, it will still garner limitless sales throughout the CD era, because Linn, along with McIntosh and Quad, inspires the greatest brand loyalty in the business. It's just too bad that the possession of a captive audience breeds complacency.

No such feelings are inspired by the launch of Celestion's range of hybrid ribbon loudspeakers. The UK's best-kept secret of 1989, the Celestion 3000, 5000, and 7000 offer down-to-900Hz ribbon technology at prices which will astonish those who want but cannot afford Magnepans and Apogeos. Then again, the new Celestions won't compete with the all-panel types because they're box systems and cannot emulate certain panel properties. No, the Celestions are going to wreak havoc in the \$800–\$2000 sector for box-type enclosures, because of a very simple rule of customer psychology: the customer either wants panels or boxes, and trying to convince him otherwise is a waste of effort. I don't expect that anyone will choose these over the Magnepan MG2.5/R or Apogee Stage One. . . or vice versa.

Celestion's range of ribbon/cone hybrids consists of two models but three designations: the slightly dearer 5000 is simply a walnut-clad version of the black 3000. This system features the ribbon and an 8" bass driver in a stand-mounted enclosure, while the floor-standing 7000 adds a second bass driver working up to 300Hz; the primary bass driver, as in the 3000/5000, operates up to 900Hz.

What Celestion has done which is so remarkable—noteworthy even at a German hi-fi show which played host to at least 20 ribbon hybrids from Philips and Grundig through to a dozen non-exporting specialists—is to eradicate all of the negatives associated with ribbon systems. The speakers are sensitive and easy to drive, eliminating the need for high-priced



Celestion System 3000

amplifiers. They're small enough to slot neatly into a spot which previously held a conven-

tional system. They have no apparent hot-seat. They go loud. They look terrific without appearing too radical for the box-oriented. The transition between ribbon and cone is virtually undetectable.

Add to that bi-wire/bi-amp facility, a gorgeous dedicated stand for the 3000/5000, prices (at least in the UK) way below the usual high-end tariff, and a badge which indicates permanence and wide dealer network, and you've got a formula hard to defeat.

The ribbon itself is the subject of a patent application, so I'm going to stifle my concerns about its originality and see what the patent offices decide. Forgetting about that aspect for the time being, one can recognize the brilliance of the Celestion product by the delectably sensible way in which designer Graham Bank dealt with the ribbon's dipole nature by fitting it to its own separate enclosure-within-an-enclosure, in which the rear radiation drifts back harmlessly to the rear of the cavity. The ribbon is mounted on the front inner corner, the speakers being supplied in mirror-imaged pairs, with their centers aimed toward the listener. The only siting restrictions involve placing the systems some 6" from the back wall. The further apart you place the Celestions, the wider the stage. I'll find out how far you can go before creating a hole in the middle when I review them for the January issue of *Hi-Fi News & Record Review*.

Okay, I shouldn't judge the sound heard at either an official demo in a terrific room with unfamiliar material, or a private demo in a crummy room with my own preferred listening matter. Even so, I'm prepared to dub these as the most important new British loudspeakers of 1989. (Although the nifty budget Celestion 3, also launched in 1989 and reviewed in last month's *Stereophile* by JA, is turning out to be the fastest-selling budget speaker in a decade.) Having lived with Apogees for five years, I have some idea about the capabilities of ribbons and—though the Celestions do not offer the "disappearing" capabilities of panel systems—I hear so much to remind me of ribbon systems that I find it hard to accept that the sounds issue from boxes.

As I mentioned before, the Celestions are going to make life very difficult for companies offering similarly priced and sized conventional systems. The Celestions are so fast and (by box standards) transparent, with top-to-

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bottom coherence of such a high order, that I'll be stunned if these don't win awards all over the place.

Any sighs of relief issued by me don't indicate that I'm about to change my Apogee Divas for Celestions. Rather I'm relieved because I can now report on a product about which I've had to keep my mouth shut for six months. And that, for me, is a Herculean task. Especially when news of the product deserves to be shouted from the rooftops.



Omtec Jubilee power amplifier

West Germany: Markus Sauer

The mid-fi market in Germany has fallen on some hard times lately—for the same turnover, a dealer has to sell four or five CD players today, as opposed to one in 1985. But judging from conversations with dealers and show exhibitors, the high-end market seems relatively unaffected. Mind you, that means the market as a whole, not individual brands. And since there are always more manufacturers trying to get a slice of a market that is growing slowly, if at all, some of them are bound to suffer (in '88, the high-end industry as a whole had a turnover of around \$55 million in Germany).

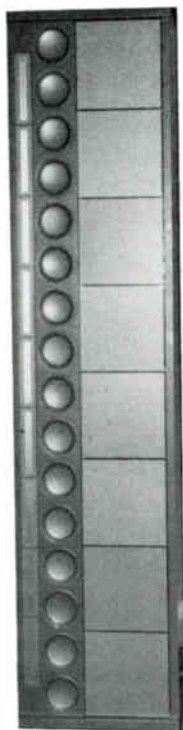
Which means I got mixed signals at this year's High End '89 show in Frankfurt. While most dealers were reasonably optimistic, manufacturers tended to be more cautious. The buying public, however, seemed positive enough. The high end may be starting to break out of the enthusiast ghetto—more and more people seem prepared to spend large amounts of money on equipment. I suspect CD plays a large part in this—when was the last time you were allowed feelings of superiority over the long-term enthusiast by buying something with excellent convenience features?

On to the show proper. Attendance was up, demonstration quality down from last year, I felt. Nevertheless, some exhibitors managed to put together decent-sounding systems. Worth of special mention here, I think, is German electronics manufacturer **Omtec**: not only did they have a fine system (Roksan Xerxes, SME V, vdHul MCI, phono pre "antares," line pre "VA 602," power amp "Jubilee," TMR 1 loudspeakers, and Isoda cables), but the young operator showed real musical taste. This came as something of a relief; I have grown to despise *Jazz at the Pawnshop*, which was this year's favorite piece of software. And to think, the organizers had even gone to the length of recording a double album/single CD of fine acoustic music, which could be bought in every room, especially for this show. The rationale behind this was to provide a common factor for the different demonstrations. In principle, a neat idea. Unfortunately, because of some petty disagreements (too childish to relay here), very few exhibitors actually used these discs (of course, there may have been other reasons; some of the systems would have been shown up rather cruelly, I suspect).

The most significant new product at the show came from a new outfit called **Einstein**. I have told you before that because of the economics of the high end in Germany, our contributions to this noble passion tend to cluster in the *very* expensive end of the market. While the name chosen for the product range does imply a certain lack of humility, the big news is that these are going to be mid-priced components; a very well-thought-out integrated amp has almost reached the shops ('89 production was sold out before the amp was officially introduced), and is scheduled to sell in the \$1200 region; a CD player and a tuner will follow early next year. These will be joined by a two-way speaker of the same brand, which was designed by Christian Yvon, the man behind the outrageous Goldmund Apologue. I'll provide you with more details soon.

The second most significant product was a new turntable from **Thorens**, the TD 2001. This is a completely new design which marks Thorens's return to the analog trenches. If all goes according to plan, I'll have a lot more to say about this in my next Update. US price will be around \$800, and worth it.

ATL showed some intriguing new speakers working on the line-source principle. The bass

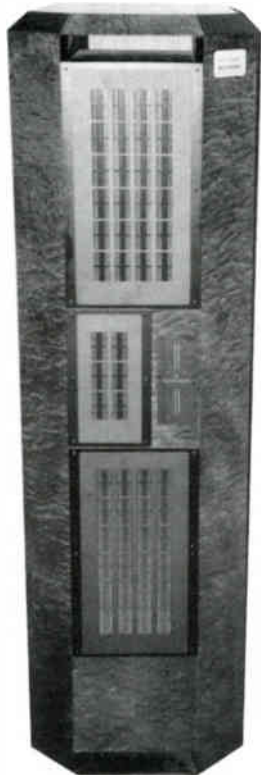


ATL loudspeakers

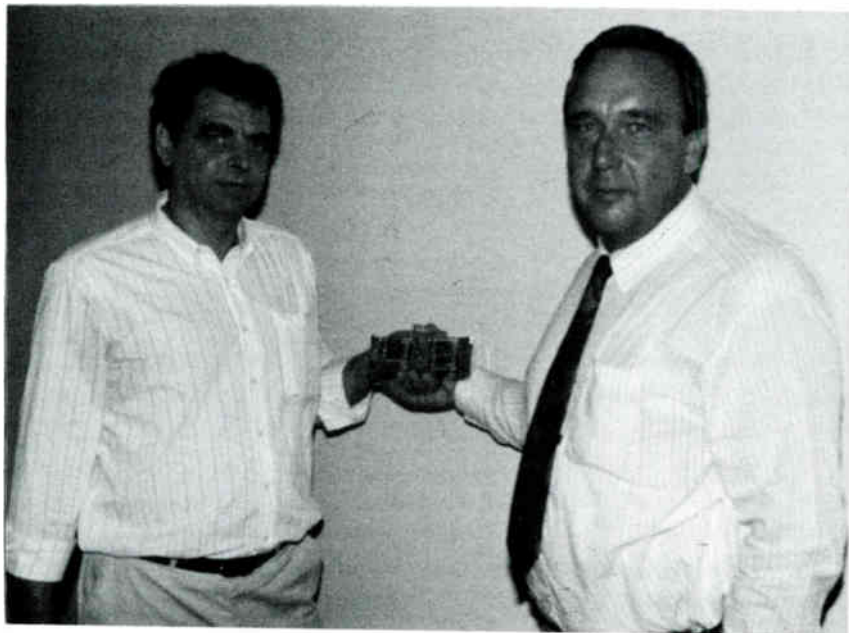
drivers are moving-coils, but the membranes are square pieces of a ceramic compound, mounted in a vertical line. **Audio Physic** and **newtronics** showed speakers which, although quite dissimilar overall, had one thing in common: the use of two smallish bass drivers, mounted on opposite sides of a slim column, near the bottom of the speaker. This seemed to be a worthwhile idea: opposing forces in the cabinet, and a known loading from the floor; both speakers shared an even, quite well-extended response in the bass and good clarity and dynamics. **TMR** introduced a new speaker which consists of a twin-driver bass/mid module, a soft-dome tweeter, a separate midrange enclosure, and an ionic tweeter module. You can start with just the bass/mid and dome tweeter and work your way up to the full system; prices will be between \$3k and \$7k. **Fischer Audio**, who had stolen last year's show with the introduction of the \$80,000 Pegasus active speakers, seems to have evolved into a major player: their speakers have earned some rave reviews, and their sales are quite impressive, too. The electronics of this range

are designed by Walter Fuchs, one of the most experienced designers in Germany.

TDL's German distributor, Axel Oberhage, has created new cabinets for the big transmission lines. While the interior remains unchanged, the looks have undergone a radical revision. It seems the traditional TDL look, more or less unchanged from designer John Wright's IMF days, wasn't too popular with houseproud German customers. The finish is now superb. And while he was at it, Oberhage effected some minor ameliorations in driver layout (the mid/treble drivers are now offset to give asymmetrical reflection patterns) and created a semi-active version of the Monitor (second from the top of the range); he worked with Helmut Brinkmann, one of the longest-serving designers in our high-end scene, to create a dual-mono amplifier *per side*, meaning that the bass driver is driven actively (with some intelligent contour-shaping of its response) while the rest of the chassis are driven by the second half of the amp. Oberhage says John Wright was



Fischer Audio's Amthæus

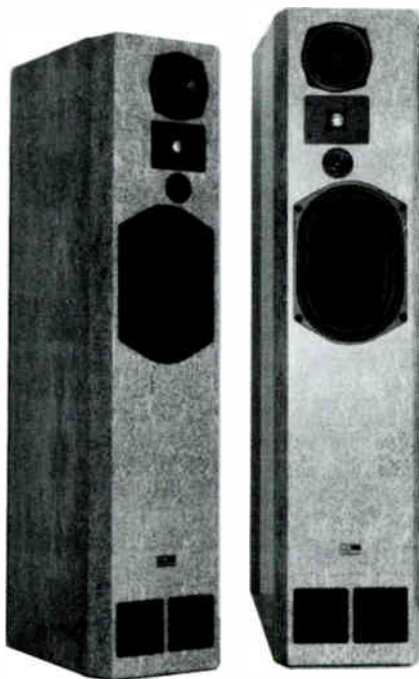


Peter Suchy and Martin Frobe proudly holding the tube Harmony (with its Telefunken mic triodes)

astounded to hear his babies sound this good. You can order both the new cabinets and the electronics via TDL's US agent.

Clearaudio's Peter Suchy has kept pretty busy these last few months. While his cartridges remain unchanged (he's toying with a new stylus shape, but cannot get it with the kind of finish he demands yet), the tube Harmony has been finished (it fits on top of the Souther TQ1), a couple of turntables have been designed but turned out to be too expensive for production to be worthwhile (pity; magnetic bearings and innovative features galore), so he breathed on the unique **Boomerang** record deck, an earlier version of which was shown at last year's SCES, took on distribution of the new **Wolcott** speakers from the US (which may or may not incorporate the cleverest tweeter loading ever devised), has a new **RCA** connector featuring 114 separate beryllium springs, and I hope reading this sentence leaves you struggling like I was when presented with all this info. . .

Klumo had a new tube monoblock, the Linnet. **Kebschull** has done a Levinson, meaning that designer Manfred Kebschull has left the company under not entirely amicable circumstances, I'm told; production continues more



TDL Monitor Active

MAGNEPLANARS

Top Choice of Tough Customers

FROM STEREOPHILE, VOL. 12, NR 1 (JAN. 1991)

the stereophile readership survey

TOP 30 LOUDSPEAKER BRANDS

Brand name

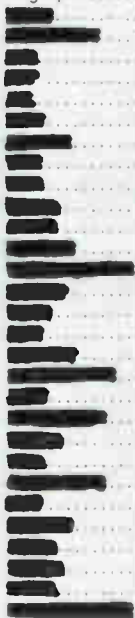
Magnepan

Percentage
of Stereophile
readership
owning brand

6.9%

Percentage of
speaker owners
that would not buy
the product
if they had it
to do over again.

1%



MAGNEPAN

1645 Ninth St., White Bear Lake, MN 55110



Burmester 838 tuner

or less unchanged. On the accessory front, I want to mention just three items: **WBT** introduced a new speaker-cable binding post with standard 19mm spacing, the WBT 0730 (how do they come up with all those snappy references?); **L'espace** is a new cable from France; it is adapted from a cable developed for the European rocket project Ariane (I have already tried this at home; in the right system it can be superb); finally, a young man in Germany, **Thomas Labusga**, sat down for some serious mathematics in the world of Fibonacci numbers to create new diffusors. He had a nasty surprise when he discovered that RPG had already done something similar in the US, but recovered from the shock when he found the existing RPGs to be relatively crude (his words, not mine). Anyway, his are less aesthetically intrusive, being made of transparent acrylic.

A gold star must go to **Infinity**, who had by far the most professional demonstrations; not only did they present the new Kappa 5 and -001 series, they also sold IRS pinups, Infinity key hangers, and Infinity lighters; plus, they didn't disturb fellow exhibitors with the high sound-pressure levels generated in their rooms, but rather disturbed themselves in adjacent rooms. Suffering from this were the nice **Piega** speakers (from Switzerland), handled by the same distributor, which have a very good ribbon tweeter as their distinguishing feature.

Mission (from the UK) showed the new Cyrus Signature electronics, which seem to be a rather cynical attempt to sell the known amps at 60% higher prices for a few upgraded mechanical parts, such as sockets. Oh well, maybe they'll surprise me by being significantly better. **Accuphase** premiered the C-11/P-11 pre/power combo. **Royd** (from the UK) showed their new, top-of-the-line Apex speakers which should be a significant event in Linn/Naim circles. Speaking of which, the new appearance of the **Naim** range raised more than a few appreciative eyebrows, but the long-awaited 52 preamp was kept in storage for the Penta show in London, a month later. [A report by Ken Kessler will appear next month. — Ed.]

Copland (from Denmark) showed a new tube integrated amp. **Lectron** introduced both a new hybrid integrated, the JH 30, and a pair of big tube monoblocks, the JH 80 (\$10,000+). The JH stands for Jean Hiraga, the French tube maven. The design of the JH 30 looks extremely interesting, and I hope to get my hands on one soon.

While in the UK amp manufacturers are branching out into speakers, in Germany speaker manufacturers are branching out into electronics. **T+A** (yeah, I know, I know, they'll have to change their acronym if they want to trade in the US) has been particularly successful in this; others, like **Backes & Müller** and



Burmester 878 power amplifier with new suspension

Quattro II... Numbers that count.

The STAX CDP Quattro II is hardly the sole 18-bit, 8-times-over-sampling compact disc player on the market. What makes it preferable to the others?

Readers of this publication can no doubt recall that the most demanding listeners found earlier 14-bit and 16-bit designs notably deficient in the retrieval of low-level details, particularly those conveying the ambience of the recording site. As maker of the world's most revealing headphones, STAX has demonstrated an understanding of the nuances of recorded sound that, culminating in the unequalled SR-Lambda Signature, uniquely qualifies this company to extract more information from the compact disc medium.

The heart of the Quattro II is its 2 ladder-network-type 18-bit D/A converters, externally bit-trimmed for full accuracy and low-level linearity—one per channel, to prevent phase differences between left and right signals. The most obvious virtue of the 8-times-oversampling approach is that the filtering of the digital output can be kept simple, resulting in a treble as precisely detailed as it is lacking in so-called digital asperity. Similarly, the down-to-DC bass response delivers the performance the digital format has always promised.

Other niceties abound. The master clock, the base timer of digital data reconstruction and D/A conversion, is run from an isolated power supply to avoid timing glitter. This clock generator is not located in the player section, permitting a jitter-free resampling (D/A) timing pulse to be fed directly to the DAC sample-and-hold I-V converter. The fixed direct output proceeds immediately from this I-V point—no DC-cut capacitor or DC-nulling feedback servo.

Digital audio is, simply put, numbers into music. Whatever compact disc you choose, the STAX Quattro II allows those numbers to count for more—more information, more detail, to move you closer to the original musical experience.



Pictured: CDP Quattro II high-resolution compact disc player. Photo: Ken Fabrick.
For a full-line brochure, please send \$5.00 to:
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écouton, look set to follow suit.

The problem with writing a show report such as this is that I'm forced to be highly superficial and brutally selective, leaving out much that might be worthy of mention. But, on the other hand, the coming year's worth of

Industry Updates is assured. All in all, the theme of this year's show was one of evolution rather than revolution. The high-end industry seems to concentrate on the refinement of the advances made through the scrutiny of "passive" components and such like. No bad thing.

USA: J. Gordon Holt

Tera 621C TV monitor—color balance (see review, p.150)



Fig.1 Black and white movie, *Mr. Hulot's Holiday* (Criterion LV), tweaked JVC left, Tera right. (All pictures taken with daylight color transparency film.)



Fig.2 Highway scene (LaserVision Associates of Pacific, Demo 1), tweaked JVC left, Tera right—note color cast of macadam road surface and background mountain haze.



Fig.3 *Raiders of the Lost Ark* (Paramount LV), tweaked JVC left, Tera right—what color is his jacket? It's supposed to be gray.

Let Aragon save you from Digital Hell. The D2A will Convert you.

An Interview with Anthony Federici, President of Mondial Designs Ltd.

Q. What is "Digital Hell"?

- A. There are three forms of Digital Hell. 1) Having to spend thousands of dollars to get the highest technology CD player. 2) Discovering there has been another major improvement in digital two months after purchasing a CD player. 3) Trying to decide what to do, while the recording industry is trying to decide what to do with DAT.

Q. How does the Aragon D2A save you from all this?

- A. First, the least expensive CD player using the same digital converter, over-sampling and filtering chips is over \$4,000. The D2A is even superior because of Theta Digital's reclocking circuitry, which reclocks the digital bit stream to better than one nanosecond accuracy. Second, to protect you from the rapid advancements in digital, the D2A uses a separate circuit board for the digital portion and the IC's are inserted with plug in modules. Therefore, no matter what advancements or changes occur in digital, the D2A can be easily upgraded to new technology. In other words it's a convertible converter. Third, the D2A will also convert, with the same quality and accuracy, CD's, DAT's or the audio portion of satellite transmissions or video discs. CD players with digital bit stream outputs are available for under \$300.

Q. What do you have to pay to get all this?

- A. At present, you can be saved from digital hell for \$995. We are struggling to maintain the price in the future, but I cannot guarantee it.

Q. Since the D2A has Theta Digital designed circuitry, IC's found only in over \$4,000 CD players and it's only \$995 you must have skimped on the analog portion?

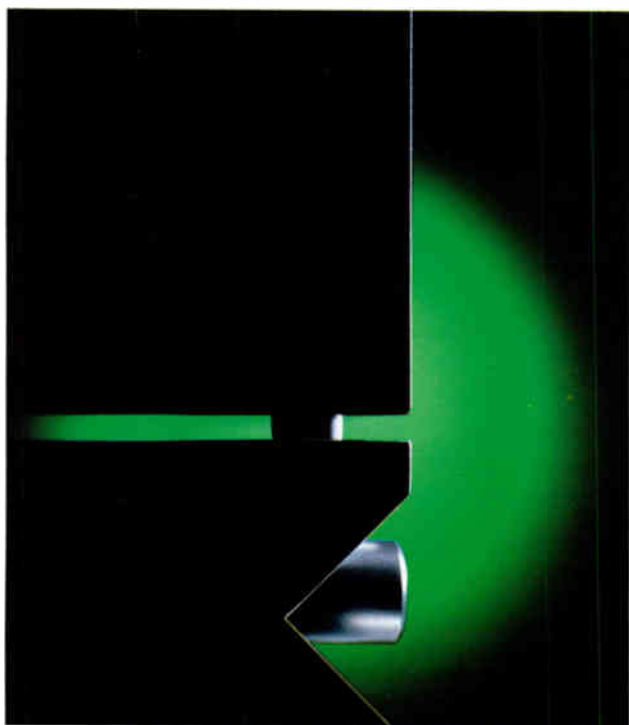
- A. Oh ye of little faith. When it comes to Aragon quality, I don't compromise. Knowledgeable audio reviewers, from around the world, have deemed Aragon components the biggest bargain in high end audio.

Q. O.K. prove to me you didn't compromise?

- A. O.K. try this litany. The AC power supply is in a separate chassis to eliminate magnetic radiation and noise. It mates with the main chassis via a swiss made connector with gold plated contacts. Only fully rectified and filtered D.C. voltage enters the main chassis. 11 separately regulated D.C. power supplies are employed giving completely separate supplies and dual mono operation to the DAC's and the analog section. The unique analog section employs no op amp IC's. It is fully discrete and class A. This analog section actually utilizes Aragon phono circuit topology. The result is exceptionally musical with wide dynamic range and very low noise. The sonic integrity of the analog section is then maintained by encasing the digital circuit board in a zinc chromated metal shield to prevent RFI radiation. The input and output connectors are chassis mount gold plated, from Tiffany. The D2A accepts any combination of three digital bit stream sources, two coaxial inputs and one optical fibre input. In addition, it has a digital tape output and the absolute phase can be inverted from the listening position via remote switch. The D2A is manufactured by a U.S. medical and military contractor to one of the most stringent standards in the world. We then take a component which sonically belongs in the world's finest audio systems and machine a 3/8 inch aluminum faceplate so that visually and aesthetically it also belongs in the world's finest systems.

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Law Kong Ink Audiophile Magazine, January 1989

...the Aragon preamp is now my choice for under £1500 (\$2,700).

Ken Kessler HiFi News & Record Reviews, March 1989

That's the kind of design it is: it sounds right from the very first note. More correctly, it doesn't really sound much at all.

Alvin Gold HiFi Answers, December 1988

So, you see, to purchase the highest quality amp and preamp combination you can spend well over \$10,000 or well under \$3,000. The choice is yours.

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THE AUDIO ANARCHIST

Sam Tellig copes with Audio Dilemmas

Larry Archibald once told me that I managed to find myself on the horns of every hi-dilemma there is.

Do I like electrostatic or cone speakers?

Both. I like the transient speed and openness of electrostatics, but with most electrostatics I am bothered by the limited dynamic range and a certain vagueness of imaging, which I think comes along with a dipole. Sometimes I would rather listen to a good cone speaker, especially certain models from Spica, Spendor (the LS3/5a), Celestion, Monitor Audio, and Acoustic Energy, all featuring excellent, pinpoint imaging.

CD or LP?

I flip over the convenience of CD and the fact I don't have to flip over the disc. But I find, still, that LPs, at their best, sound superior. The problem, of course, is that most LPs and CDs, for that matter, do not represent the particular medium at its best. Better a well-recorded CD than a mediocre LP.

Every time I make an improvement in my CD playback system—the British Fidelity Digilog, for instance—I manage to make an even bigger improvement in my analog front end—for example, substituting the SME 309 arm for the Rega RB300 arm on my AR ES-1 turntable.

I go down to Definitive Hi-Fi, in Mamaroneck, New York, and hang out with Lars, Lou, Steve, Tony, Jeff and the rest of the Thursday night 'philes. We have the Mike Moffat Theta processor to listen to, as well as the new Krell Digital. Then proprietor Rudi Kothe puts a record on the Versa 2.0 and it's all over—analogue is still king, and everyone agrees, including digital-loving Lars: "The best sound I ever heard in my life," said Lars, the other night, after WQXR disc jockey—excuse me, radio personality—Steve Sullivan had finished tweaking the VTA of the van den Hul Grasshopper on the Versa 2.0.

I wonder how a Shure V15 Type V-MR might sound in the Versa 2.0. I don't think I shall get the chance to find out. I also wonder how substituting tube amps for the Krell Reference Monos on the Wilson WAMM would affect the sound of the system. The Krells sound cold. Maybe the Krells are too good: too much detail.

Or maybe they're just cold. Was it my friend Mario who said that an amplifier reflects its designer's personality—warm or cold, depending on whether the person was? Yes, it was Mario, whom you'll meet again in a moment.

Before I forget, I want to tell you that the British Fidelity Digilog, reviewed last month, is sounding even better after a longer burn-in. The soundstaging has improved—deep, wide, spacious, lots of "there" there. And that sibilant smear I complained about last month—well, that's diminished.

I still think the Theta and the Krell processors do better, but at \$995, the Digilog is an outstanding buy. Of course, you could wait to see how those new players and processors with single-bit conversion perform. But I wouldn't rush to buy one of the first Bitstream units. It's new technology—may take time to get it right. The good thing about Bitstream may be that it allows inexpensive Japanese CD players to sound okay—less chance, perhaps, of a player's DACs being misaligned. If you're interested in the Digilog and you like the way it sounds, go for it. Remember, though, that its improvements might be subtle and noticeable more over time—like several weeks—than they are over a few minutes in a quick A/B dealer demo.

There are other dilemmas, too. Sure enough, Larry's right. I am caught on the horns of all of them. Moving-magnet *vs* moving-coil cartridges. You thought that one was settled, right—like direct-drive turntables *vs* belt-drive. Well, the other day, I tried the Shure Ultra 500—hard to find now, but a bargain if you can buy one cheap, like under \$200—on my new SME 309 arm. The result? Magnificent. Maybe I lucked out and got the VTA just right without any fooling around. I hear a smoothness I do not get with moving-coils. On the other hand, the moving-coils may retrieve a little more detail. But, as JGH has asked, what do you want: detail or music? If you want music, you might opt for a Shure.

Shure gets a bum rap from everyone. Audiophiles are down on them because they're so cheap—the V15 Type V-MR sells for a typical street price of \$129. Not that most of these

'philes have actually heard the V. And if they have, it's probably in a grotty arm on a budget table in a Cheapskate system. Put the V in a Rega RB300, or better yet in an SME 309, and you may be amazed at what it can do. Cheap arms can make the Shures sound hashy, harsh in the treble. It's not the cartridge; it's the arm.

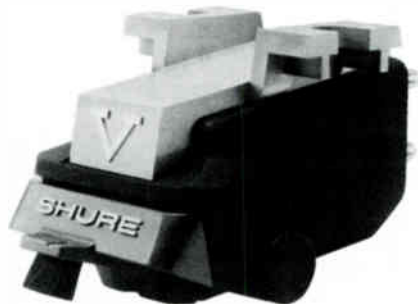
High-end dealers are down on them because they would be lucky to make \$10 margin selling a V15 Type V-MR; you can buy it almost as cheaply as they can! That makes it a terrific recommendation in my book. If they carry the V at all, which is doubtful, they are not eager to demo it against, say, a \$1200 moving-coil, on which they might make up to \$600 margin.

Here's another reason to go for a Shure: record wear. There isn't any with a properly maintained Shure. I've been using mostly Shures since 1958 and I have, in all that time, *never* worn out a record. True, I have so many records that I'm not likely to wear out an LP with any cartridge, but my library wasn't always so large.

Last summer, I visited our esteemed editor JA in Santa Fe. He played some records on his Linn. They were all worn—every one. Not from neglect, but from cartridge gouging: low-compliance moving-coils that just scraped their way through the vinyl! Now tell me: what's worse? Losing a little detail by using a Shure, but saving your records? Or extracting a little more detail with a low-compliance moving-coil but rendering your records so worn that you soon won't want to listen to them with *any* cartridge? With most of your LPs now irreplaceable, give this one some thought. I have, and I'm sticking with Shure.

In the September '89 issue a reader wrote and asked if I really meant it that a typical moving-coil, in a typical audiophile's system, might last six months or so. I *did* mean it. That's how long most of my tweak friends seem to keep a particular moving-coil before replacing it with another. Some 'philes spend \$2000 a year, year in and year out, on moving-coils. This is insane.

Buy a Shure V15 Type V-MR and you can rejuvenate it instantly with a \$79 replacement stylus (typical street selling price, again). Incidentally, the replacement stylus for the Type V-MR will fit in the Ultra 500 cartridge



Shure V15 Type V-MR cartridge

body and work perfectly, so far as I can tell. What's more, because a Shure tracks so lightly and so well, the stylus is usually good for at least 1000 hours *vs* maybe half that time for a low-compliance, poor-tracking moving-coil.² At \$79 for a replacement stylus, that's 8 cents an hour to run your cartridge. If you buy a \$1200 moving-coil and use it for, let's say, 500 hours, that's \$2.40 an hour. It costs you 30 times as much!

Here's another audio dilemma: Cables and interconnects. Don't you just love it when some writer ties himself in knots by listening to a half dozen or so interconnects? Many of the differences are so minor and, in many cases, differences from one system to another will swamp them so as to render the writer's views virtually worthless.

I do love the way certain audiophile cables and other accessories can muck up the sound of your system, and at considerable cost. Talk about dilemmas—spare yourself this one.

For instance, I tried a Sumiko Premier Phono Interface Box on my SME 309 arm, with a Classé DR-5 preamp. What did I get for my pains? RFI. Specifically, shortwave radio interference from Voice of America and the Christian Science Monitor World Service. I knew something was wrong when I heard the words "Mary Baker Eddy" between movements of a string quartet.

I removed the PIB and installed the cables that came with the SME 309 arm. I still got

¹ To add just a word in my record collection's defense: a lot of my records are just plain wore out from being played a lot. And the indefatigable Sam visited *before* I started the habit of cleaning my discs with the Nitty Gritty machine. —JA

² This would seem like an ideal opportunity to plug Denon's vintage DL103D MC, which I believe is still available. I recently set one up in my wife's system—it had been sitting in my spare parts box for the last seven years—and was astonished to find that it tracked better (in an Itok arm mounted on an LP12) than any cartridge I had ever owned (apart from the Shure so beloved of Mr. T). Sure, it sounds a little polite, with its recessed mids and rather woolly bass, but it even handled the 80µm tracks on the Ortofon test record with aplomb! —JA

Here's a book about an upgrade that's so good and costs so little, high-end autosound installers don't want to hear it—or even about it!

Killer Car Stereo on a Budget

Now you have a simple choice when it comes to upgrading your car stereo. Instead of paying a few thousand to a good high-end dealer, you can pay only a few hundred. With a good in-dash unit in place, you need only follow author Dan Ferguson's instructions for buying and replacing your front and main speakers, and adding the killer—a subwoofer with enclosure, power amp and crossover.

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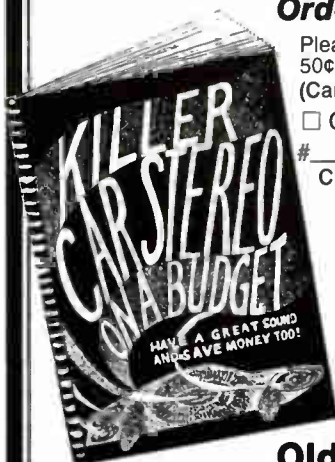
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Old Colony Sound Lab

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some shortwave RFI which I eliminated by using only one of the SME cable's two ground wires—this at the expense of some slight added hum.

That's not all. Every cable I used with the PIB sounded worse than the supplied SME tonearm cable, which was free, so to speak. The SME cable was smoother by a long shot. True, I only tried four cables with the PIB, but none was up to the subjective performance of the SME cable. A dealer, though, could make some extra bucks by selling you a PIB and an extra cable and having you leave the excellent SME cable in its box.

Want to foul up your sound? It's often easier to do it with expensive audiophile interconnect or cable than with cheaper wire products. Do you find that MIT Shotgun speaker cable rolls off the highs? Of course, if your moving-coil weren't so peaky and your speakers weren't so hot in the treble, you wouldn't want that cable rolloff. Put a pair of MIT Shotgun cables on a pair of Vandersteen 4As and you may hear what I heard: dullsville. But the MIT Shotgun is the so-called "industry standard"; dealers love it not only because it's so profitable, but because it is pre-sold to audiophiles.

How about AudioQuest cable? I tried some AQ Clear Hyperlitz, and I thought the cable screwed up the sound of a pair of VTL 80Wpc monoblocks driving Thiel CS1.2s: the speakers sounded grainy and gritty. The sound was . . . well, confused. The opposite of clear. Say what you will about the Thiels, the speakers are *not* inherently grainy, gritty, and "confused"—just the opposite. They are clean, clear, coherent. Not with the AQ garden hoses (12" lengths, which was all I needed). I told Jim Thiel about this. I also told him about 18-gauge Radio Shack solid-core, which was wonderful, again in 12" lengths. He told me they use 18-gauge solid-core cable to wire the interior of the speakers! I got a longer sample of the AQ Hyperlitz Clear—10' lengths—and used them with the Classé Audio DR-8 power amp and a pair of Epos ES-14s. I never heard the Eposes sound so bad: hashy, shrill, metallic, grundgy, awful. I knew the speakers were good. I also knew the amp was okay.

What did I do to get relief? I changed the speaker cables, at first to Mission Cyrus solid-core. But don't count out the AQ Hyperlitz Clear, because as of this writing, I'm using them again! Meanwhile, I found yet another expensive way to foul up the sound of my particular

system. This time it was Cardas Powercord II—the Greek Golden Mean stuff—in 6' lengths powering the Classé DR-5 preamp and DR-8 power amp. I was troubled because the Classé gear did not sound as good in my home as it had, in several installations, at last summer's Chicago CES.

I fixed the problem by substituting plain old Belden cable for the Cardas cords. Of course, you may love what the Cardas cords do in your system. One thing's for certain: a power cord can change the sound of a piece of equipment. And for many audiophiles, any change is immediately labeled an "improvement." But is it? I wish I could recommend a good cheap interconnect. No such luck. One guy tried that, but he couldn't get any support from dealers. So he jacked up the price. Want to know who it was? Nah, I don't want to tell you and hurt the guy. He's a small manufacturer, and besides, his interconnects are still reasonably priced, by comparison—and quite good.

Actually, I can recommend a reasonably cheap interconnect. It's any reasonable-quality RG-59-diameter microphone cable, along with instant gold-plated RCA plugs from Music and Sound. Best part of this is, you can cut off the connectors and re-cut the cable if necessary to any length. The shorter the cable, the better. Any good microphone cable should work with these connectors and produce acceptable results.

As far as uncheap interconnects, my current favorites include AudioQuest Lapis and Cardas Quadiink. I'm using Lapis between my preamp and power amp, and the Cardas cable between my Digilog and preamp. I'm not certain I couldn't have done equally well for a lot less money, though.

Lars, the wire freak, has come up with a recommendation for speaker cable—this is actually from Dave Magnan, the maker of Magnan Series V—or is it VI by now?—a favorite interconnect among NY-area tweaks right now. The speaker cable is specially prepared Mogami Neglex 2477. The stuff retails for under \$1.50 a foot. You need a double run, which brings the cost up to just under \$3 a foot.

Here's what you do. Cut off about 6" of the black outer sheath, exposing the outer wires, the shield. Peel back this wire—beautiful oxygen-free copper—and twirl it together. Now cut off about 3" of the inner sheath, exposing the inner wire. Wrap some electrical

tape around the bottom 3" of the outer shield. It's important to about leave 3" of the center sheath intact to help prevent the wire from shorting out when you do what I'm going to describe next.

Do what I just said with two runs of the Mogami. Now, carefully combine the inner core of one run with the outer shield of another, making sure that the words "Mogami Neglex" run the same way on both outer sheaths, because this stuff is highly directional. The word "Neglex" should face the power amp; in other words, the words on the sheath should run toward the speakers. Crimp on some spade lugs and tape over any exposed wire.

Lars and I demonstrated some of this to a third 'phile, Bill, who had just purchased—well, had just purchased a very expensive pair of "industry standard" speaker cables. Probably cost him the better part of a week's pay. This poor 'phile was astounded at how much better the Mogami sounded—smooth, open, airy, detailed.

The problem with the Mogami, aside from the pain in the butt of preparing it, is that the bottom end is not so good. So here's a cable you can perhaps use if your system has too much bass: a tone control, if you will.

Tell you the truth, I'm not using the Mogami at the moment. I just received a pair of Spica Angelus speakers—Quads are out, Angeli are in. The Mogamis just didn't cut it with these Spicas, ah, speakers—no bass. I tried Kimber Kable 8TC, and that was a considerable improvement: more bass, along with excellent smoothness and detail. Kimber makes some nice, reasonably priced Kables, and I note that a lot of equipment manufacturers use Kimber in their own systems. Ray is one of the few Kable manufacturers who actually makes his own stuff—most of the rest buy it and have their name put on it. Sometimes, I hear, they buy some military surplus cable super-cheap and put their name on it. When they exhaust the supply, they buy a different surplus cable, put their name on that, and then announce a dramatic product improvement.

I could never leave well enough alone. I was sitting there looking at the AQ garden hoses—you know, the Hyperlitz Clear, which had sounded so awful on the Eposes. I decided to try them on the Angeluses. Guess what. I liked a lot of what I heard.

There was a dramatic improvement in bass, for one thing—and this is welcome with bass-shy speakers like the Angeluses. And I wasn't so troubled by a harsh, hashy sound in the upper registers as I was when these cables were used on the metal-dome-tweeter-equipped Eposes. I left the speakers on all night to help break in the cables—allow the dielectric to form, allow the speakers and the cables to get to know one another, or whatever. And, so help me, the next morning as I listened to my Haydn and read the *New York Times*, the cables sounded smoother than the night before. Someone once told me that it takes weeks, not hours, for the dielectric to form on some of these complex cables, like the AQ Hyperlitz Clear. I'll keep you informed.

One thing is certain about the Hyperlitz Clear: these cables do *not* roll off the highs. I think I can say this, too, about them: they are better suited to speakers whose high-frequency response is not tipped up—speakers like the Spicas, for instance, or the Vandersteen 2Ci's or 4A's, or even the Quad ESL-63s, rather than speakers like the Thiel CSI.2s or the Epos ES-14s, which sport metal-dome tweeters.

You can see the problems in writing about speaker cable. What will sound good—or right, or whatever you want to call it—in one system may sound very wrong in another. To make matters worse, cables may need to take several weeks or even months to break in, and most reviewers going through a whole bunch of cables won't have the time to break them in properly.

Here's a way I think you can save money on speaker cables. Buy a pair of mono amps and put them right behind the speakers. Then run the shortest length of speaker cable possible. I was able to run about 9" of wire from the VTL monos to the Thiel CSI.2s, for instance, and for this application Radio Shack 18-gauge solid-core was fine. I find this cable considerably less satisfactory in longer runs—9' or 10', for example. You lose bass, you lose dynamics. But for short runs, cheap solid-core cable can work fine. Practically speaking, short runs are only possible with monoblocks.

Now, my final audio dilemma.

You guessed it. It's tubes *vs* solid-state. It's a debate which will never be resolved, certainly not here. There are certain solid-state preamps and power amps which can sound tubelike—close to tubes but not quite the same. The B&K

ST-140 is one of them, but it's woolly in the bass and not particularly transparent: sweet and spacious as hell, though. I mean, heaven.

But none of this gear—although I haven't heard the Levinson stuff at length—strikes me as being as musical as, say, a good tube amp. I never hear magic with solid-state. Never. Not with Krell. Not with Rowland. Not with Classé.

It's tubes for me. I find that almost any tube amp will create moments where the system disappears or transcends itself and I am made to feel a part of the music and the performance. The last time this happened to me was with a pair of VTL 80W monoblocks. True, good solid-state gear is more gutsy, has more balls, more power and more punch. But the VTLs could transcend themselves, and none of the solid-state gear could. Ugly little suckers, though, and for that reason alone I couldn't keep them.

Another recent experience helped confirm me as a tube believer. George Bischoff's Melos ST-90 tube amp—soon to be upgraded and reviewed in this column!—sounded, to me, more musical driving a pair of Martin-Logan Sequel IIs than all of Dan D'Agostino's expensive solid-state Krell gear driving the Martin-Logan Statement.

Well, good news. I have in the house at the moment four speakers which should do very well on tubes—the Spica Angeluses, the Vandersteen 2Ci's, the Epos ES-14s, and the Mon-

itor Audio 7s. I can't wait to hear what happens when I put them on promised gear from MFA, Quicksilver, Melos, and—get this—*Air Tight!* Yup, I told Larry Archibald that if Olsher gets Air Tight before I do, I quit. Sorry, Dick, but you do seem to get all the tube goodies. As I write this I have a photo of the Air Tight ATM-2 pinned to my board—a \$6000, 80Wpc beauty with KT88 output tubes. Dick, you can have the ATM-1, if you like. Others lust after cars . . . or women. I lust after tube amps.

I feel sorry for my friend, poor Mario, who lusts for tubes, just like me. But Mario let himself be talked into buying a pair of B&W 80Is, which need to be driven by solid-state. Every time he hears tubes I think he wishes he owned another speaker. At the moment, he's driving his 80Is with a pair of solid-state amps called Photons.

"How are your Protons this week, Mario?" "Pho-tons," says Mario, hard, like he's going to place my feet in shoes of cement, something he has threatened many times to do.

"When are you going to invite me over to hear your Futon amplifiers?" I ask.

"He bought them in a mattress store," lights up Lars.

"Screw you guys! You haven't even heard these amps and you're crapping all over them. Besides, if I invite you guys over, you'll do what Tellig here does with Lars's ESBs." True enough, I probably would.

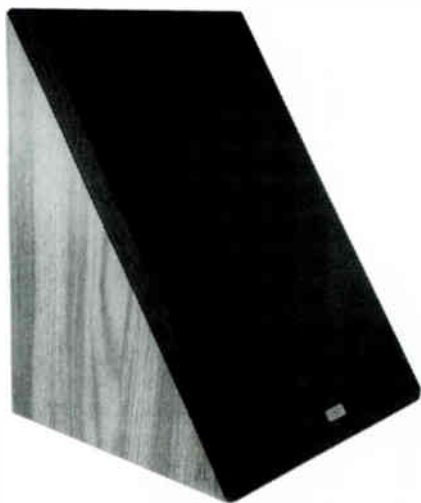
Lars, too, likes tubes, having owned Quicksilver monos and Jadis JA-30s, the latter not being up to the job of driving his power-hungry ESBs. Just as Lars has convinced himself that the ESBs are fine speakers, he has also convinced himself that Krells are king.

One day, late last summer, Lou and I were spending a Saturday afternoon at Lars's lair, drinking beers, and sweating as the Krells put out their awesome amount of heat. Dan should offer a mod: each KMA-160 to come equipped with its own built-in room air-conditioner.

I was making faces.

"What are you grimacing about? The ESBs are good speakers," chirped Lars for the two-thousandth time.

Lou's face is lighting up, enjoying every minute of it, when Lars's eldest son shows up with one of his friends. What has this friend done? He has, just moments ago, purchased a B&K ST-140, on my recommendation no less, plus a pair of Spica TC-50s, which I can also recom-



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mend to you. He has them in his car.

"Hey, kids, how would you like to hear the Spicas on the Krells?" "Sure," chorus the kids.

"How about it. . . Dad?" Lars nods his head, and the Spicas enter the listening room. It's almost six o'clock and nearly time for us to leave, so we have just a few minutes with the Spicas, which aren't even broken in and certainly not optimized in the room.

"They sound glorious," I say. "Boy, now I know how good your Krells really are." "They do sound exceptionally smooth," agrees Lou.

"What you and I are hearing, Lou, is a quality I value highly in loudspeakers: it's called 'absence of wolf tone.'³ Why don't you get a pair of these, Lars, and review them for Sweden? I think the Swedes would think these swell. What do you think, Lars?" Lars is silent.

"I wonder how many ESBs are sold in Sweden," ponders Lou.

"Lars," I say, leaving the house, "it's been a great afternoon. I really enjoyed the chance to hear those Spica TC-50s. Those Spicas are terrific speakers."

Stop Press!

I have just seen a copy of a September 1, 1989 memo from Joe Harley, of AudioQuest, presumably circulated to at least several cable manufacturers. This is in response to two recent cable articles in *Audio* magazine.

The cover letter is particularly interesting—it is *not* intended to appear in *Audio* or anywhere else, for that matter. I quote, in part: "The following is a revised letter to *Audio* that (we hope) all cable manufacturers will sign.

"We have decided not to use the ACMAC name or any other name for the wire group. The feeling was that it might be perceived by the general public that a formal wire 'cartel' had been established."

I wonder where anyone would get *that* idea!

The letter to *Audio* itself is too long and, in any case, not appropriate to print here—its being addressed to them, not to us. But I shall quote the letter's concluding advice to consumers on cables, which is: "listen first, think second." That's exactly what I've done. Listen first, think second. I think that some of these expensive interconnects and cables have, at one time or another, made my system sound worse.

I am not arguing with the premise that different interconnects and cables can alter the sound of one's system—indeed, many equipment manufacturers talk openly about interconnects and cables as "tone controls." My recommendation is that audiophiles fool around first with relatively inexpensive cables and interconnects, to find those that are most satisfactory. Just because a product costs more does not mean it will sound better.

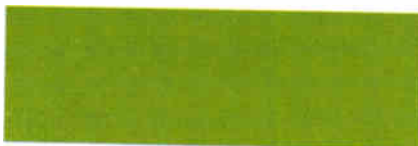
My quarrel with cable manufacturers possibly is about what I consider to be the high and sometimes exorbitant cost of certain products. For instance, over \$200 for a power cord that any sane person—*ie*, non-audiophile—might assume should cost less than a tenth that much. (Granted, it probably costs more than you might think to have the power cord assembled: \$10 to \$12 labor cost is one figure that I hear.) Why *can't* we have more really good, cost-effective cables and interconnects?

No doubt this magazine will be hearing from the "wire group," which is so anxious not to be perceived by you and me as a "cartel." I'm sure all of this works out to the consumer's benefit. I'm equally sure that someone is going to write in and call me a commie or something. Wrong. I'm a registered Republican.

Why am I so riled up about this? Easy. I think of my good friend Bill, who spent \$2500 on a set of cables and now has them up for sale—he'll be lucky to get \$1000—because he is more pleased with \$20 worth of Mogami Neglex.

I don't know how much I'll be writing over the next few months. I plan to visit the Soviet Union for part of November—as you read this, I may be packing my bags. Maybe I can find some promising speaker wire over there. (Thin chance!) One reason I'm going is to check out things for my Russia Tour next spring. Meanwhile I'm getting all this tube gear together, and with so many changes in my system, I have to listen first, write second.

If you'd like information about the tour, which departs on March 29 and returns April 9, please write Russia Tour, P.O. Box 1198, Ridgefield, CT 06877. I'll let you know right away if space is still available. **S**



³ See *The Audio Anarchist* in the October issue, p.71.

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An Amplifier Listening Test



It is always a matter of great interest when a difficult question, in this case the audibility of differences between amplifiers, is put to an empirical test. When the question is tested by such intelligent, knowledgeable, and unbiased investigators as John Atkinson and Will Hammond (see the July issue of *Stereophile*, Vol. 12 No. 7, p. 5²), the interest is even greater. Unfortunately, when the test turns out to have been flawed by errors in design and in use of statistics, as was the case here, the disappointment is also even greater. In this article, we first explain the statistical errors and present a reanalysis using the correct statistics. We then report a study that corrects some of

because we usually cannot digest or remember an entire data set and thus need some smaller set of numbers that adequately characterize the important features of the set. That is why we have such things as batting averages for baseball players. A full set of data listing times at bat and hits (in what inning, against what pitcher, etc.) would tell a lot more about

William P. Banks and David Krajiček run a repeat of *Stereophile's* blind comparison between VTL and Adcom amplifiers,¹ with surprising results

the flaws we find in the *Stereophile* study and shows that the audible differences between the two amplifiers are much greater than the original study implied. Finally, we conclude with some brief reflections on approaches to investigating the listening qualities of amplifiers.

Two statistical problems in the *Stereophile* listening test completely invalidate the conclusions. The first is JA's inappropriate application of the chi-square test—but before discussing the flaws in the use of the test, we should briefly explain what this test is. In statistics there are two kinds of data analysis: descriptive and inferential. A descriptive statistic is exactly that: a number or set of numbers derived in some way from the data to give a succinct description of an important aspect of the data. For example, the various kinds of average, such as mean or median, are descriptive statistics that express the central tendency of the data. Descriptive statistics are very important

the player, but that's too much to remember unless you happen to be an idiot savant or an obsessive fan. The single number, the batting average, is an adequate characterization of the batter's ability for most purposes.

An inferential statistic is fundamentally different from a descriptive statistic. It attempts to go beyond the given data to infer whether a pattern of data is a result of some underlying cause or whether the pattern is merely the result of chance. A deep insight about the nature of truth is embodied in inferential statistics. The underlying logic of inferential statistics recognizes that absolute certainty can never

¹ This article was originally submitted as a letter to the editor. Because of its length, however, and the fact that the authors carried a considerable amount of additional work, I decided that it would best appear in its current form. —JA

² See also "Letters," October 1989 (Vol. 12 No. 10), pp. 23–43. —JA

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(See New York Magazine, September 4, page 57)

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be obtained; the statistics are designed only to estimate the *probability* that the observed pattern is due to chance. Thus, using inferential statistics we can calculate that the probability of a pattern resulting from chance is less than some amount, say, less than 1 in 20 or 1 in 100. What such a statement means is that, by our best estimate, chance alone would produce the pattern less than once in 20 or once in 100 tries.

The chi-square is one such inferential statistic. We cannot take the space here to describe how it works, but suffice it to say that the test depends on a number of reasonable mathematical assumptions to estimate the probability that a pattern of data is simply a result of chance. If these assumptions are violated, the estimate is highly questionable.

One of these assumptions, and a very important one, is that observations that enter into the calculation of chi-square must be independent. This is the assumption that was violated in the *Stereophile* test. It is incorrect to treat each response of a subject as a separate, independent observation for chi-square testing of significance. Why? Because each observer's seven responses are influenced by that observer's biases, accuracy, and any other inherent characteristics he or she may have. The chi-square test looks to see if the obtained results deviate from chance expectations. If the entries come in nonindependent "clumps," then the test is likely to show that the results differ from chance only because of the non-independence of the samples, not because of any real differences.

To put this matter in more intuitive terms, counting every observer response as an independent observation is very much like letting people vote more than once in an election. If *everyone* votes, say, seven times, the winner will still get the same proportion of the votes, but the result will seem more impressive and contrary-to-chance than it really was. The inflation of votes creates a serious statistical problem because the inferential techniques take advantage of the fact that, as observations increase, random events tend to average out. As numbers increase, for example, flips of fair coins tend to approach a 50:50 ratio of heads and tails. In ten flips, a finding of 60% heads would not be very surprising, but if the 60% held up over 1000 flips, the probability that the coin was fair would be extremely low. Likewise, a small percentage difference from chance is much less remarkable with 505 observations

(the actual number of listeners in the *Stereophile* study) than with 3530 (the total number of responses in the study: 505 listeners times 7 judgments minus five missing responses). It is 505, not 3530, that is the correct number for estimation of randomness in this case. Consequently, the observed findings are less reliable than was thought. *How* much less, we will consider later.

Our point about the proper use of chi-square is, by the way, quite well established statistically and not a matter of debate. The error made in this analysis is a very common one and is frequently singled out for discussion in statistical textbooks. For example, in his authoritative 1981 statistics text, Hays warns that "caution may be required in the application of chi-square tests to data where dependency among observations may be present, as is sometimes the case in repeated observations of the same individuals." Earlier, in his classic statistics text, McNemar (1962) pointed out that the assumption of independence is "violated when the total of the observed frequencies exceeds the total number of persons in the sample(s)." Such is the case with the data used in the *Stereophile* test.³

The other error in the analysis of the *Stereophile* amplifier test derives from the unequal *a priori* presentation probabilities of "same" and "not same" trials. Mr. Hammond is correct in stating that if people were guessing randomly, this should not make a difference in the results. However, they were *not* guessing ran-

³ With respect to the authors (who, of course, have probably forgotten more about statistics than I ever learned), I find this too strict a guideline. I strongly feel that each test *should* be considered independent. (My co-worker Will Hammond is adamant that the randomization of our tests would have successfully counteracted any tendency for dependency among the observations to develop.) Yes, if one person takes the test seven times, he or she doesn't change attitudes and preconceptions. But there was no causal relationship between any individual test and the ones that preceded and followed it. For example, assume that I took the blind test 10 times and scored 10 correct identifications of "Same" or "Different." As I understand Professor Banks's argument, this would count as *one* test for determining significance, not 10, due to the fact that all my responses would be governed by the same factors inherent in my listening and decision making. But surely common sense would dictate that, assuming that no extraneous factor had crept into the test (such as a difference in level or audible noise between the two samples), that this 100% scoring would not have been due to chance but to a real audible difference, and that the number of tests would have to be considered as 10 rather than 1. (10 out of 10 is significant; 1 out of 1 is not.) Certainly statistician Herman Burstein, in his analysis of the data in October ("Letters," p. 37), implicitly agreed that it was the number of tests, not the number of participants, that should be considered as the total for testing significance. Regarding the use of the chi-square test, Will Hammond actually used a different test for significance for the bulk of the analysis.—JA

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Lewis Lipnick—Stereophile, Vol. 10, No. 9, December 1987

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domly, but rather had a very strong bias to say "not same." When these two deviations from 50/50 exist, predicted performance obtained by pure chance can differ greatly from 50%.

We will use some intuitive examples to explain how this works before we consider the amplifier test. First, let's assume that about 80% of the population is right-handed and 20% is left-handed. Suppose you were given the telephone book for a small city and asked to guess for each listing whether the person was right- or left-handed. How well would you do? If you guessed "left" and "right" equally often you would categorize exactly 50% of the people correctly: 40% of the people would be correctly named as right-handers (*ie*, half of the 80%, or 0.5×0.8), and another 10% of the people would be correctly named as left-handers (0.5×0.2). If you were clever, you could do much better by categorizing them *all* as right-handers. That way you would be 80% correct: All of the right-handers would be correctly categorized for a score of 80%, and none of the left-handers would be correct, but since they make up 20% of the population, your accuracy would stand at 80%. To put it another way, without ever testing anyone for handedness you would still correctly categorize them 80% of the time. Clairvoyance? Of course not! With probabilities as skewed as this, 80% is exactly what is predicted.

Just for one more example, let's look at an in-between case: What would happen if you guessed 80% right-handers and 20% left-handers? This works out to be 68% "correct," not quite as good as the too-clever 80%, but much better than the mythical 50% "chance." Here is how the 68% is achieved: For the 80% of the population that is right-handed, you will guess that 80% are indeed right-handed and that 20% are left-handed, for an accuracy of 64%. For the left-handers, since you have no way of knowing who they are, you will also guess that 80% of them are right-handed. You will be wrong on them, but you will garner another 4% correct because you will guess that 20% of them are lefties, and $0.2 \times 0.2 = 0.04$. Hence, the total is 68%. Clearly, if we were testing to see if your ability to classify people by handedness was better than chance, we could use 50% as chance only if your guessing probability was 0.5 for left and 0.5 for right.

In the present case, we have to consider that 30 out of 56 (or 53.6%) presentations were

different amplifiers and 26 of 56 were the same. If an observer guessed "different" on every trial without even listening, he or she would necessarily get a score of 53.6% correct. Given that they actually guessed "different" 63.1% of the time and "same" 36.9%, how would they do by chance? Let's figure it out. On the 53.6% of the trials in which the amplifiers were different, people would be assumed to guess that 63.1% were different, for an overall correct classification of 33.8% ($0.536 \times 0.631 = 0.338$) of the total. On the 46.4% of trials where the two amplifiers were the same, people would be assumed to guess that 46.4% were "same" ($46.4\% = 100\% - 53.6\%$), and they would pick up another 17.1% (0.464×0.369), for a total of 50.9%.

So, if observers did *not even listen* to the amplifiers but simply guessed that 63.1% were different, they would get nearly 51% correct in this study. What we need to know is how much better they did by listening and whether the improvement is more than what chance would predict. People actually got 52.3% correct. They therefore did 1.4% better than chance expectation. Note that the reference point that corresponds to chance is 50.9%, not 50%.

To test whether the 1.4% improvement is statistically reliable, we need to use the chi-square test correctly. The unit of analysis is the individual (of which there are 505) rather than the response. Our test used the data in fig. 2 of the *Stereophile* article, which shows the proportion of observers who got zero correct, one correct, two correct, and so on. We converted these to frequencies and compared them with the appropriate distribution with $p = 0.509$ rather than 0.5. (This is like assuming that we are flipping a slightly unfair coin.) When all this is done, the chi-square is equal to 4.23. For a sample this size, the result indicates that this distribution of responses falls at about the 75% probability level. To translate the exact meaning of the test into plain English, the chi-square value indicates that *strictly by chance* we would expect to obtain a distribution at least as extreme as this one 75% of the time. In even plainer English, this means that the results don't mean anything at all!

For another way of looking at the results, consider just what a mean difference of 1.4% means in this case. It is consistent with the hypothesis that 1.4% of the population could

judge correctly while the remaining 98.6% could not. In other words, all we need is about seven people out of the 505 to judge correctly for this mean difference to be generated. The remaining 498 might as well be deaf.

Given that the results came out as they did, can we conclude that the differences between the amplifiers are not audible? That is, of course, one possible conclusion, but a null result such as this raises many questions and alternative hypotheses and is essentially uninterpretable. While a positive result points to one or to a small set of conclusions, a null result tells us very little. Anything that can mess up a study can cause a null result. It is much easier to run a flawed study than a valid one and hence very easy to get a null result. (For this reason is it virtually impossible to publish a scientific paper that reports a null finding.)

In this case some factors that could have led to a null finding can be suggested. An obvious one is the listening conditions. With over 50 listeners packed into the testing room, we would assume that only a few were in a position nicely located between the speakers without a human body in the way. Another factor, characteristic of all the comparative listening tests we know of, is the relatively brief 90-second exposure each observer had. As Atkinson pointed out in the introduction to the *Stereophile* study, it may take listening sessions much longer than 90 seconds for differences between amplifiers to be apparent. Still another problem could result from people being influenced, consciously or not, by the gestures, body language, and possibly even by visible response-sheet answers of others in the room. If people are more concerned with their neighbors' subtle cues than the sounds they are supposed to be listening to, accuracy could very well fall to chance. Finally, we believe that design problems similar to those found in this study could either obscure real differences or create artificial ones.

One problem we have found in most of the amplifier tests we have read has to do with the particular selections of music used for "same" and "different" trials. In virtually every case a given selection is presented to listeners in either a "same" trial or a "different" trial, but not in both. This procedure creates a problem because a given piece may incline the listener to judge "same" or "different," whatever the truth may be—possibly because the selection's

auditory characteristics are difficult to remember or because of any of dozens of extraneous factors known to affect perceptual judgments of this type. It is clear that a problem is created if a selection that biases a listener to say "same" is played through two different amplifiers; the bias will cause most people to give the wrong answer, and overall accuracy will seem worse than it really is. If, on the other hand, this selection is played twice through the same amplifier, the bias will cause listeners to give an answer that falsely inflates their accuracy. Biases of this sort should average out over a large set of selections, but studies of amplifier audibility tend to use such a small number of selections that a strong bias for one or two selections can greatly affect the results. An alternative to using a large set of selections is a design in which each selection is presented, to different listeners, in both a "same" and a "different" trial. The study we report here used such a design, which we will describe below.

A repeat test

In order to overcome some of the flaws in the *Stereophile* study, we decided to set up a more nearly ideal testing situation. We purchased an Adcom GFA-555 power amp and a pair of VTL Monoblock 300s (both used, both checked out as up to current specs). Testing took place in a classroom at Pomona College that had been outfitted for listening and recording for a different project. This room had nonresonant masonry walls, ceiling, and floor, as well as a nonresonant (but not very effective) dropped acoustical ceiling. It was carpeted, and bats of jute rug pad were used to reduce reflections and to cover the windows and stifle their resonances. The signal source was a VTL-modified Magnavox CD player that fed the two amplifiers in parallel through an attenuating network with film resistors and Bourns potentiometers, the pots being used to equalize the effective gain for both amps. Before every listening session we equalized the outputs of the amplifiers at 1kHz, using a Fluke digital true-RMS meter accurate to three significant figures, and with the amplifiers driving the speakers. Mogami Neglex was used for all interconnects, and all connections were soldered. The outputs of the amplifiers were fed through very robust 250-amp switches. The VTLs' outputs were switched to a 16 ohm load when it was not driving the speaker; the Adcom was not loaded when it was not driv-



Vacuum Tube Logic 300W monoblock power amplifier



Adcom GFA-555 power amplifier

ing the speaker. Cardas cable was used for all speaker cable. Several short pieces of cable were needed for the switching box, and two 18' lengths of Cardas Hexlink fed the speakers, Martin-Logan CLSes. We chose the CLSes because they are uncolored and transparent speakers that seemed likely to reveal differences between the amplifiers—also because we had no access to a B&W 801 of the kind used in the *Stereophile* test.

The listening panel consisted of eight people. Of these, three had long-term interests in high-fidelity sound and had "high-end" systems at home. The rest were recruited from those working in the building during the Summer. These five had interests in audio and music but were not consumers of high-end equipment. People were given the test either singly or in groups of two. They were well-positioned with respect to the speakers and, when two were tested at the same time, they sat so as not to be able to observe each other's reactions or responses (the room was very dimly lit).

The test consisted of eight pairs of excerpts from the same pieces of music (we used a wide variety of music—send SASE c/o *Stereophile* and we will provide the list or any other infor-

mation you may request). Of these eight, four pairs were played through the same amp and four were played through different amps. To make everything nice and symmetrical, two of the four "same" pairs used the VTLs both times and two used the Adcom; for the "different" pairs, two had the VTLs first and two had the Adcom first.

Our design was intended to cope with the problem that some musical selections might be easier to categorize than others, or that some selections would bias people to guess "different" or "same." As mentioned, such differences among the selections could spuriously inflate or deflate the accuracy of our listeners—we have no way of knowing which—and with only eight selections such effect would be unlikely to average out. We therefore assigned each musical selection to all four possible different combinations of amps. Each pair of excerpts was therefore presented in four different ways (to different listeners, of course). Each listener heard all eight selections, but a given selection was "same" with the VTLs used twice for one group, "same" with two Adcoms for another, "different" with the order Adcom-VTL for another group, and finally "different"

with the order VTL-Adcom for the last group. Thus, there was a total of four groups, each with two listeners in it, in a very well-balanced and controlled design, with every piece of music presented in every condition.

Results

Under these conditions, the arithmetic mean accuracy was 75%, which is 25% better than chance—considerably better than the 1.4% over chance of the *Stereophile* study.

Performance for the eight listeners broke down as follows: One got them all correct, four got seven out of eight, one got six correct, one got four, and one got only two correct. A distribution like this is probably better represented by the median than the mean. The median accuracy is 84.4%. A third common measure of central tendency, the mode, is 87.5% correct.

Comparing this distribution to the appropriate binomial distribution (*ie*, the prediction based on chance) using the chi-square test, we get a chi-square of 90.14, which indicates that the observed distribution will be produced by a totally random process less than once in a thousand times. That is, if we repeated this study 1000 times with people who could not discriminate the amplifiers, only once would we get results this extreme. There is a *caveat*, however, associated with the chi-square test, and that is that it is unstable and possibly untrustworthy with a very small sample, such as the one we used. An alternative test for small samples is the Kolmogorov-Smirnov test. Applied to these data, this test puts the chance expectation well beyond the level of one in 100.

What accounts for the difference between our study and *Stereophile's*? There were two clearly audible differences between the amplifiers in our system that may have been reduced in the *Stereophile* test. The most prominent difference was in the highs. Sometimes—especially with cymbals and brushes—the Adcom's highs sounded ragged compared to the VTLs,' while on some material they simply sounded a bit louder. On most but not all classical music this difference made the VTLs sound more natural, but on the popular selections it sometimes gave the Adcom a little more excitement. The other difference, more subtle, was in imaging. The VTLs had a slightly deeper image and tended to define individual sound sources better than the Adcom. Thus,

for example, with the VTLs one had the sense that individual voices in a chorus could be separately attended and placed in space, even counted, if one had the patience. The Adcom, while extremely clear and detailed, gave this sense less often.

Conclusions

These differences cause us to speculate that an important reason for the low identification accuracy in the *Stereophile* study was the crowded conditions in the listening room. Informal reports from those who participated in the study suggest that highs may have been muffled by people and couches placed very close to and in line with the tweeters. For those farther back in the room, attenuation of highs by all the bodies and tweed jackets in the way must have been severe. If the highs were significantly attenuated, important differences between the amplifiers could have been reduced to inaudibility.

The packing of the room must also have reduced the audibility of the differences between the amplifiers in imaging. Standing far off-center in our listening room caused the images to compress and rendered the already subtle imaging differences between the amplifiers impossible to detect. Many of the listeners in the *Stereophile* study were non-optimally situated for good imaging, and the attenuation of highs probably also affected imaging by degrading important stereophonic cues in the high frequencies.

Despite our presentation of what may seem a thoroughgoing pan of the *Stereophile* study, from the way it was designed and executed to the analysis of the data, we applaud the study as an honest attempt to get an answer to a vexing question. Audiophiles and high-end journals have claimed to find significant audible differences between amplifiers that have no major measurable differences in electrical characteristics and that short-term listening tests with blind or double-blind controls often cannot discriminate. The blind controls are intended to ensure that only the sound of an amplifier, not its appearance, price, or reputation, will influence the listener's judgment, and when non-blind reviews purport to find differences between amplifiers with equivalent electrical measurements, the more hardheaded among us are prone to attribute the differences to the influence of the non-audible status fac-

tors normally unavailable in a blind test.

However, there are too many nagging suggestions of real amplifier differences to allow the hardheaded but open-minded observer to rest with this judgment. One of these is nicely put in John Atkinson's comments in the preface to the *Stereophile* report. Having been unable to distinguish an expensive amplifier from a moderately priced one in a blind test, he sold his own expensive amp and replaced it with a cheaper Quad 405. He later came to regret this decision as one of the worst he had made in audio. It seems reasonable to conclude from this and many similar accounts that long-term listening to an amplifier will reveal characteristics and annoyances that are extremely diffi-

cult to detect in a brief session. With this conclusion we would venture the further suggestion that one attribute of a "golden ears" listener is the ability to be annoyed in a few minutes by amplifier traits that take weeks to annoy most people.

How, then, is one to show differences among amplifiers without giving listeners a month for each comparison? We consider the *Stereophile* test to be an honest attempt to find a reasonable way to do this. That study apparently assumed that the trick is to use a large sample of listeners—this being a common experimental approach to measuring small effects. Our study showed that a large sample is not necessary, only a clean design. **S**

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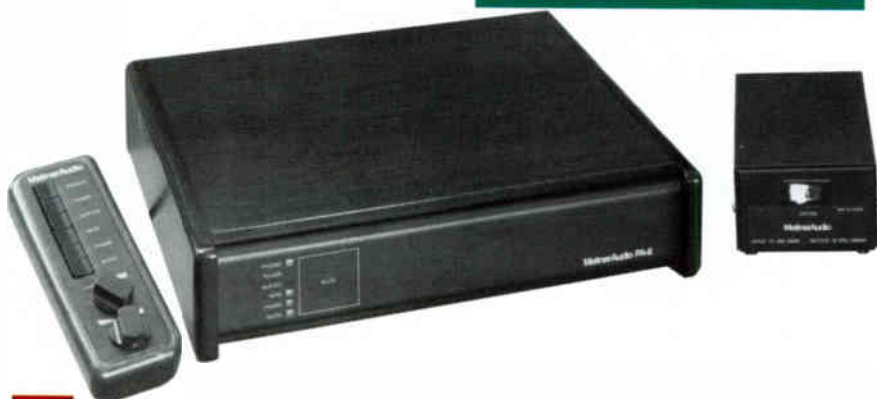
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STEW GLICK



I year ago, following repeated suggestions from audiophiles across the country, I invited *Stereophile* readers to share with us details of their systems and listening rooms and to recommend dealers they have found to offer service and appropriate guidance. Not only would the information prove fascinating in its own right—audiophiles just love hearing about each other's systems—but I hoped that it would enable us to build up an anecdotal database about what components best work with others. So, to start this irregular series, here is reader Stew Glick from New York State. And if anyone else would like to have their system featured in the magazine, please send me full details of your system, room, musical and sonic tastes, accompanied (preferably) by black-and-white photographs. Mark the envelope "A Matter of Taste."
—JA

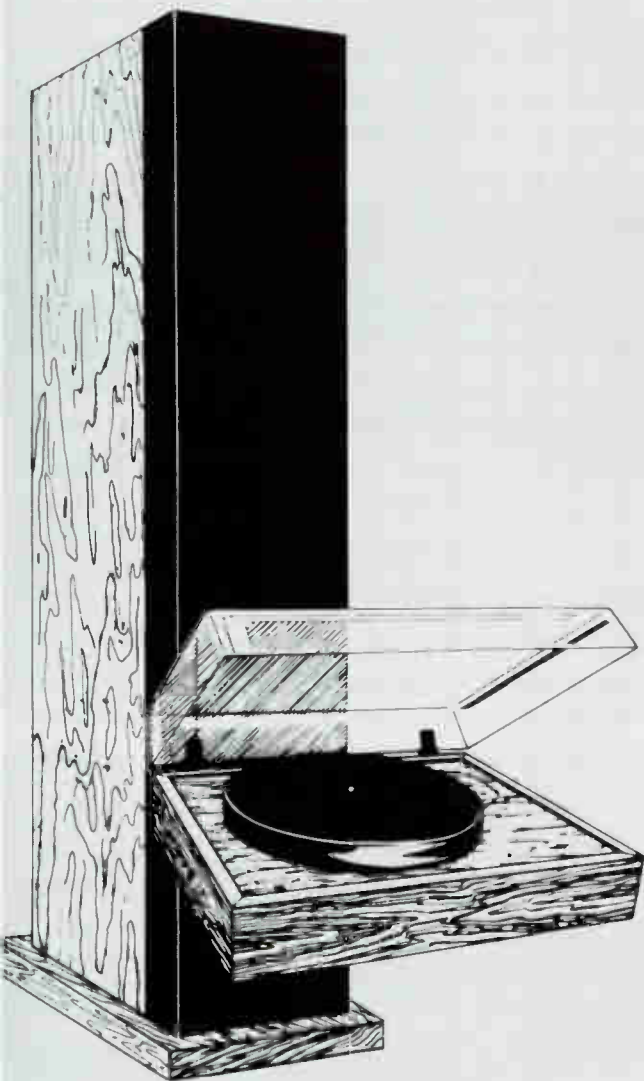
Many of us who read *Stereophile* appreciate the "Letters to the Editor" column as much as any other aspect of the publication; I for one am grateful to John Atkinson for recognizing this, and for allowing more space to be dedicated to the sharing of experiences at the consumer end of the hi-fi spectrum.

To begin, the room I use for listening is about

10' x 16' x 8'; rather on the small side, to say the least! The floor is carpeted concrete, and the front wall—the one near where the speakers reside—is also concrete for about a third of the way up. Small rugs hang on either side of a curtained window centrally located on the front wall, and there are also several area rugs on the side walls. The back wall, behind the listening position, has a closet hidden by a curtain taking up about two thirds of it. There are three 2' x 4' acoustic tiles on the ceiling just over the speaker positions. Major acoustic treatment is provided by a set of Tube Traps in each of the front wall corners, with one 11" stack between the speakers and enough 1" Sonex to cover an 8' x 4' area on both side walls beginning from the front wall; the cement part of the front wall is covered with four 2' x 2' pieces of Sonex, combined with some straight 2" foam. The room probably sounds obscene from an aesthetic point of view, but even friends who have no idea what is going on in there find it rather neat and sort of artistic. As you can see, much attention has been given to the room acoustics. Some people believe this is about 70% of the battle for good sound. Suffice it to say, it is very, very important, and no doubt especially so in a room as small as mine.

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Meitner STR50 power amplifier

some years ago, I needed to start a system from scratch—she parted with our gear. (She loves music as much as I do—maybe even more so.) After hearing the original Mission CD player, I decided to concentrate on that medium rather than try to build up a new record collection; some may still argue the point, but the writing was on the walls. (I might point out that, having owned a Linn LP12, Ittok tonearm, and various acceptable phono cartridges, I am not totally ignorant of what a decent analog front end is capable of.) That said, the hi-fi equipment, which resides on two Sound Organisation tables next to the listening hot seat, consists of the following: a Meitner CD3 CD player from Museatex, a pair of Translinks (also by Museatex), a passive volume pot from Electronic Visionary Systems (the pot is by Penny & Giles, internal wire is Distech platinum, and connectors are Tiffanies), a System 6000 controller by Celestion, and a pair of Meitner amps, the STR55 and STR50. The speaker system is—if you haven't already guessed—a System 6000 by Celestion; the STR55 drives the SL600s, and the STR50 powers the 6000 woofers. Speaker cables and interconnects are from Museatex.

I purchased the amps just when they were updating the STR50. It was recommended by Kurien Jacob of Meitner that I could use an STR50 on the woofers with no loss of quality from not updating to the STR55, since the bass in both amps is virtually identical; a demo

STR50 was available at a savings, so I bought that instead of a second '55. Private listening is via Stax Lambda Professional headphones driven by their dedicated class-A amp. All electronic components are plugged into an Isobar filter and spike protector by Triplite, and four Sorbothane feet sit between the CD player and table. Most of my discs have CD rings (the original Sims version), as my previous player—a Euphonic Technology ET650Mk.II—did not have the technology incorporated in the Meitner player for disc stabilization.

I came upon the SL600s through *Stereophile* and through a wonderful review by Ed Mendelson in *TAS*; when reviewers from two different publications could agree upon the reference quality of a component—and buy it—then it seemed worth looking into. Besides, remember the size of my room. I went through various amps (B&K ST-140, ARC D76 updated with Wonder Caps, as well as an Adcom GFA-555 to drive the woofers) before coming upon the Meitners, again with the help of *Stereophile*, *TAS*, and the audio dealer I've been working with. The Celestion/Meitner combination works extremely well; the Meitner really does seem to be the best of both worlds—tube and solid-state—in sound quality, and using the STR55 on the 600s with the STR50 on the woofers produces a seamless "whole" to the sonic picture. (And, yes, the Meitner produces deeper, better-defined bass than the Adcom.)



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Just as an aside, let me say that anyone not familiar with the Meitner amplifiers should really check them out. Kurien Jacob told me that the STR55 will drive 90% of the speakers on the market, and of course the MTR101 would—I assume—take care of the rest. To say that these amps are the most beautiful and yet unassuming pieces of audio gear I have ever come across would be a gross understatement; the fact that they can provide state-of-the-art sound is almost like an added bonus! (A definite Wife Acceptance Factor of 100%.)

The 6000 woofers came as an add-on when I was able to afford them. Much of the reason they work so well in my small room is attributable to their flexibility and control by design, including the crossover unit. Also, Celestion will eliminate much of the guesswork in setup if you send them pertinent room dimensions. A really neat computer program spits out frequency-related graphs, with angles and distances for woofer placements to get those results. Of course, you aim for the flattest response in your room through scoping out the graphs, finding the one with the flattest, most even response, and then arranging the woofers at the angle and distances specified for that graph. The 600s, since they sit on pillars which can be turned independently from the woofers, can be rotated to optimize depth and sound-staging characteristics for one's own situation. The System 6000 is a very intelligent, well-thought-out design which contributes enormously to the excellent results I've been able to obtain. Thanks to Martin Colloms for his thorough (as usual) review of the System 6000 in *Stereophile* (Vol.10 No.2), as this led me to believe that very positive results could be gotten with this woofer system.

For some time and until recently I had been enjoying the Euphonic Technology CD player. A Meitner CD3 player was ordered a couple of months before production began. The Meitner Player did not come easy, to say the least. Production was very slow, as each unit is built virtually from scratch. (This player is not your usual modified Magnavox!) When a unit was finally sent to my dealer some five months after my initial order had been placed, UPS lost it in transit to me. About a month later I received another unit; that one refused to play a disc, and was promptly returned to the factory. Brian Gammon of Museatex was quick to help me out, and sent me another unit as fast as he could. Whew! You



Celestion System 6000 subwoofer/speaker

must be wondering if all this aggravation—not to mention the costly phone bills—has been worth it. Well, first of all, if one thinks the Meitner amps are beauties, wait 'til you set your eyes on this baby! Anyone who is not crazy about the high-tech look of even the most costly CD players is in for quite a treat. Mahogany trim and case, smoked-glass top, a brass weight which helps to gyroscopically balance the disc, etc., etc. Nice... but what does it sound like? The CD3 presents a soundstage that fills the room from top to bottom and side to side, as well as having great depth on recordings possessing these attributes. Bass is astonishingly deep and defined, and tonal color is as good as any fine moving-coil setup I've heard. It presents the music in such an immediate fashion (probably due to its transparency and focus) that you are instantly involved in the performance—drawn in by the sheer power of the

music. But wait, this wasn't to be a review of the new Meitner player! Sorry; it's such a new kid on the block, I thought I might digress for a moment.

The best words I could use to describe the sound of the system I have are coherent and seamless from top to bottom, utterly transparent, and, above all, musical, with nothing "offensive" happening at all; never any boominess in the bass or harshness in the high end—two things I find particularly irritating. Some may find the sonic picture, when portraying a large bombastic orchestral work, to be on the "small" side. This tends to be true only with orchestrated works, but it gets no complaint from me since, again, the room is small and the music I tend to listen to most presents itself in quite lifelike proportions. Actually, all the equipment mentioned above seems to be present almost in spite of the musical performance; it all just fades into the background and doesn't get in the way of the music, which is, I guess, how it should be. On to the music.

I'm pretty open to almost any kind of music. I do find myself very sensitive to the higher frequencies though, and tend to stay away from situations where loud, distorted sounds abound. (I've had to use earplugs when exercising at the health club on several occasions. I'm not being a snob; it's painful otherwise!) Blues, R&B, jazz, solo acoustic guitar, some country, rock 'n' roll, some classical—whatever it is, if an artist is sincerely conveying something (even if it's just fun), I'll listen. I don't have any opera, but not totally by choice; I think I would need to educate myself to really appreciate what it's about.

On the subject of recordings used for reference purposes, I agree with both J. Gordon Holt and John Atkinson. I like putting on a simply recorded disc of piano or acoustic guitar or the like when listening seriously to a component. It helps to tell me what is going on in a way that complex, "artificially" produced recordings just cannot convey. But if a system cannot play music I enjoy listening to in an acceptable manner, what good is it? So, I'll listen to my favorite discs as well! Connecting with the spirit of the musical event is also where it's at (I hope you all agree). Here is some of the music that I've found to be particularly helpful (and fun!) when listening to components: John Williams: *Portrait of John Williams*; Archie Shepp/Horace Parlan: *Trouble in Mind*; Oscar Peterson Trio: *We Get Requests*;

LA Four: *Going Home*; Ray Brown: *The Red Hot Ray Brown Band*; Ry Cooder: "The Thirteen Question Method" on *Get Rhythm*; The Persuasions: *No Frills*; Joni Mitchell: *Blue*; and check out these two cuts off of Bruce Springsteen's *The Wild, The Innocent and the E Street Shuffle*: "Wild Billy's Circus Story" and David Sancious's intro to "New York City Serenade"!

I would like to use this space to thank the dealer who has helped me to put all this gear together; without his sobering views, I believe money would have been wasted along the way. Tom Busselle runs a business called The Audio Doctor. I know this sounds weird, but this guy not only cares about good sound, he seems to care even more about the customer! Besides firsthand experience over several years, I've even had numerous friends tell me how he advised them *against* a purchase (of an item he carries!) because he felt it was not necessary in their situation. You may not agree with him, but he'll tell you honestly how he hears it; he's unique among audio dealers, and I hope you print this; he deserves the attention. He can be reached at: (417) 345-7245; P.O. Box 380, 1518 W. Commercial, Buffalo, MO 65622. **S**



"The effect of cleaning a record with the Nitty Gritty is astonishing" John Atkinson

I reached for my British RCA pressing of *Casino Royale*, well-chewed by countless cartridges and the ravages of the elements for 22 years. The background groove noise was not particularly high in level, but had a gritty quality. Just one clean on the Hybrid 2 reduced this to an occasional minor tick, taking the background noise below the level of the intrinsic master tape hiss.

Please read the full review in the March issue of *Stereophile* (1989). Five models to choose from, starting at \$270.

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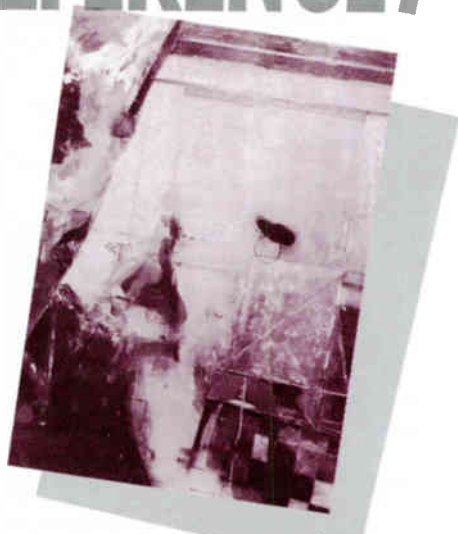
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Tired of commercial recordings that stubbornly refused to deliver accurate sound quality and soundstaging, *Stereophile's* editors commissioned Water Lily Acoustics' Kavi Alexander to capture the sound of flute and piano with accuracy, honesty, and integrity. (See *Stereophile*, September 1989, Vol.12 No.9, p.66, for the full story.)

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EQUIPMENT REPORTS

NAKAMICHI 1000 R-DAT RECORDER

Robert Harley

Two-chassis digital audio tape recorder (R-DAT format) consisting of separate tape transport and digital processor. Digital processor specifications: D/A converter section (44.1kHz sampling frequency): 8x-oversampling digital filter with dual 20-bit calibrated DAC. Frequency response: 5Hz-22kHz \pm 0.5dB. S/N Ratio: > 106dB. Dynamic Range: > 100dB. THD: 0.0005% (1kHz). THD+Noise: 0.0015% (1kHz). Channel separation: > 106dB. A/D converter sections (after A/D and D/A conversion at 48kHz sampling frequency): Frequency response: 5Hz-22kHz \pm 0.5dB. S/N Ratio: > 95dB. Dynamic range: > 95dB, THD: 0.001% (1kHz). THD+Noise: 0.003% (1kHz). Channel separation: > 85dB. Digital input: 75 ohm coaxial/EIAJ optical x3 (switchable). Digital output: 75 ohm coaxial/EIAJ optical x3 (switchable). Line input (balanced): 50mV (-18dB record level max)/40k ohms; unbalanced: 50mV (-18dB record level max)/25k ohms. Line output (balanced): 2V (0dB/100ohms) fixed, 2V max (0dB/100ohms) variable; unbalanced: 2V (0dB/1k ohm) fixed, 2V max (0dB/1k ohm) variable. Sampling frequencies: 32kHz, 44.1kHz, 48kHz. Dimensions: 17 $\frac{1}{8}$ " (435mm) W by 5 $\frac{1}{4}$ " (133mm) H by 14 $\frac{1}{8}$ " (370mm) D. Weight: 38 lbs 9oz (17.5kg).

Tape transport specifications: Sampling frequencies: 32kHz, 44.1kHz, 48kHz (32kHz and 44.1kHz digital input, 48kHz analog input). Tape speed: 8.15mm/s. Digital input: 75 ohm coaxial/optical (switchable). Digital output: 75 ohm coaxial/optical (parallel). Dimensions: 17 $\frac{1}{8}$ " (435mm) W by 5 $\frac{1}{4}$ " (133) H by 14 $\frac{1}{8}$ " (370mm) D. Weight: 35 lbs. 4oz (16kg).

Supplied accessories: full-function wireless remote control, aluminum transport cover, two digital coaxial cables, two digital optical cables, blank 120-minute DAT cassette, prerecorded DAT cassette, cleaning cassette, polishing cloth, batteries. Price (complete system): \$11,000. Approximate number of dealers: 25. Manufacturer: Nakamichi America Corporation, 19701 South Vermont Avenue, Torrance, CA 90502. Tel: (213) 538-8150.

Think back for a moment to 1973. Richard Nixon was President, the Vietnam War was still raging, and cassette-deck technology was primitive, offering decidedly low-fi performance. Then, in a surprising move, a small company that supplied tape transports on an OEM basis to many well-known Japanese manufacturers but had never made a product under its own name, introduced a no-compromise cassette deck that defined the state of the art in cassette decks for the next decade. The Nakamichi 1000 cassette deck was born, and with it a new chapter in the history of high fidelity.

The Nakamichi 1000 cassette deck was a milestone in audio technology. It represented a complete rethinking of what could be achieved with a narrow tape running at 1 $\frac{1}{8}$ " per second. It was the first machine to use three heads, and achieved a then unheard-of frequency response of 35Hz-20kHz \pm 3dB. Even more surprising, however, this remarkable product was the first offering from a company whose name was unknown to American con-

sumers. Mr. Niro Nakamichi, President, tried to sell the idea of a no-compromise tape machine to the manufacturers who used his OEM transports. When all the major companies rejected his idea, he decided to make his dream cassette deck and market it under his own name. Many industry observers thought Nakamichi was committing financial suicide: Who would buy a \$1300 cassette deck to begin with? And from an unknown company?

We all know the rest of the story. The Nakamichi 1000 was extraordinarily successful, both technically and commercially. It explored the upper limits both of cassette performance and of what people were willing to pay for such performance. Nakamichi's timing couldn't have been better: the machine launched Nakamichi into the burgeoning cassette deck market just as this relatively new product category was about to explode. Suddenly, the Nakamichi name became synonymous with high-quality cassette decks. Since then, Nakamichi has expanded its product line to include CD players, amplifiers, and car stereo.



Nakamichi 1000 R-DAT transport

What does all this have to do with a new Digital Audio Tape recorder in 1989? Everything. The fact that Nakamichi's new DAT machine, like its legendary predecessor, bears the model designation 1000 reflects their attitude toward this new machine. Nakamichi feels the 1000 DAT recorder will set a benchmark of performance for many years, just as the 1000 cassette deck did over 15 years ago. The decision to invoke the 1000 moniker was not made lightly. According to Mr. Nakamichi, the 1000 name was chosen "after long and difficult deliberation."

There are many parallels between the 1000 cassette deck and the 1000 DAT recorder. Just as the original 1000 introduced a new level of technological sophistication to cassette technology, so does the new 1000 to DAT technology. The machine is loaded with design innovations that put it decidedly ahead of other DAT machines. Indeed, Nakamichi was the first DAT-machine manufacturer to offer for sale in the US a unit that could digitally record a 44.1kHz sampling-rate signal. There had been a tacit agreement that DAT machines would not have this capability, to prevent digital-to-digital copying of CDs. Despite threats of lawsuits by the RIAA (Recording Industry Association of America, a fervent anti-DAT group), Mr. Nakamichi felt that "intentionally crippling the capabilities of a machine like this was a compromise I simply couldn't make." Subsequently, however, an agreement was reached between DAT manufacturers and the record industry to allow 44.1kHz digital recording. In a break with the established DAT standard, the 1000 does not allow four-hour recording on a 120-minute tape. This is accomplished in other machines by reducing the sampling rate to 32kHz and quantization to 12-bit. Nakamichi felt the

greatly reduced performance did not justify the extended playing time. The 1000 will, however, record a *digital* signal at 32kHz/12-bit from DBS (Direct Broadcast Satellite).

The Nakamichi 1000 Digital Audio Recording System consists of two chassis and a wireless remote control. One chassis, called the 1000p, contains the analog and digital processing circuitry, while the other houses the tape transport. Both units have identical dimensions and look very similar. Before discussing the construction and technical details, I must comment on the 1000's styling. It is striking. I have never seen an audio component that attracts the eye like the 1000. Finished in brushed aluminum with soft, rounded edges, the 1000 exudes a futuristic elegance.

Digital processor

The digital processor is the control center of the 1000 and the interface between the DAT transport and preamp. During playback, the processor receives a digital input from the transport and converts the multiplexed data stream to two analog outputs. While recording, it receives an analog or digital signal and outputs a digital signal to the transport for recording on a DAT cassette.

The processor can accept up to three digital inputs, selected from the front panel. Since all inputs use the industry standard S/PDIF (Sony/Philips Digital Interface Format), a CD player or second DAT machine with digital-out jack can be decoded by the 1000p. A dubbing switch provides copying between two of the digital inputs in either direction. This multiple-input feature with dubbing greatly increases the 1000's versatility. Owners can bypass their CD player's D/A converter and take advantage of the 1000's decoding section. In addition, it



Nakamichi 1000p
digital processor
and remote control



is a simple matter to copy from CD to DAT in the digital domain and monitor the signal without constantly changing the hookup.

Just above the input selector switches are an output level control and left and right input-level controls. A large knob at the far right is the master record-level control. These record-level controls function only when recording an analog input signal. When making a digital-to-digital copy, the DAT tape will have the same level recorded on the CD: from CD master tape to CD to DAT copy, ones and zeros are transferred unchanged, meaning that there is no change in level. The 1000 has vertical peak-reading meters toward the left side of the front panel. The meter's dynamic range is 60dB, with an overload indicator. A switch to the right of the meter turns the meter off, on, or selects a peak-hold function. Above the meter switch, another small switch selects emphasis on or off when recording. During playback, control bits in the DAT subcode automatically engage the de-emphasis circuitry if the recording was made with pre-emphasis. Because de-emphasis in the 1000 occurs in the digital domain, it should have better performance characteristics than analog de-emphasis circuitry. Pre-emphasis is a high-frequency boost applied to the signal before the A/D converter. A reciprocal curve is introduced in playback (de-emphasis) to restore flat response. Like emphasis in analog tape recording (NAB curve) and phono playback (RIAA equalization), emphasis in a

digital system improves overall S/N ratio. The fourth and bottom switch in this row selects between the processor's analog and digital inputs.

Above this row of switches are four LEDs. One of them illuminates to indicate a preemphasised signal, the other three show sampling frequency. A headphone jack and headphone volume control are provided at the far left of the front panel beneath the power switch.

The 1000p features a modular design to accommodate future upgrades as A/D- and D/A-converter technology improves. The three main boards, D/A converter, A/D converter, and digital interface are easily removed from the rear of the chassis. The A/D board has balanced and unbalanced inputs, selected by a switch located between the output jacks. Similarly, balanced and unbalanced outputs are provided on the D/A board. In addition, the D/A board has one extra set of RCA outputs to provide both fixed and variable unbalanced outputs. The digital interface board has coaxial and optical inputs and outputs labeled DAT 1 and DAT 2. A third coaxial/optical digital input, labeled "source" is also provided. Finishing off the back panel are two unswitched AC outlets.

Construction quality is impeccable. The chassis is made from brushed aluminum as thick as $\frac{3}{16}$ " in some places. A removable top panel is held by screws plated to match the exterior finish. Internally, solid copper and heavy copper plating are used extensively for electromag-

netic shielding.

In many products, one can get a feel for the designer's attitude by looking at small details the consumer would never see. Often, minor aspects of construction or design are compromised in the belief that they will not significantly affect performance or sales. On the other hand, some products reflect a dedication to quality and craftsmanship that extends far deeper than the consumer will ever notice. The Nakamichi 1000 definitely falls into this latter category. Some of these touches are described later in this review.

Tape transport

The Nakamichi 1000 Digital Audio Recorder, as the transport portion of the 1000 Digital Audio Recording System is known, records a digital signal input to it, usually from the 1000p digital processor. Its back panel has one digital input and output, selectable between optical and coaxial.

Looking at the transport's front panel, one immediately notices the clear window to the left of the cassette loading door. This window exposes the rotating head and transport mechanism. Everyone who comes in the test lab/listening room is fascinated by the tiny guides, loading arms, and head drum visible through the window. Nakamichi couldn't resist showing off their tape mechanism, which is unlike that of any other DAT machine. Users who prefer not to witness the machinations that bring them music can install a solid aluminum door (supplied) in the window's place.

The front panel's 43 (!) controls (buttons and switches, not including LED indicators) look intimidating at first glance. However, the controls are logically laid out; using them becomes second nature after a short time. The panel's far right side contains all the subcode programming features unique to the DAT format. The 1000's subcode programming facilities are quite sophisticated. During the pause between tracks, a code, called a "Start ID," is automatically written in the DAT subcode area. The Start ID identifies the beginning of a track for later search and random-access play. In a feature unique to the 1000, the user can select the threshold at which the Start ID is written, either -40dB or -60dB. Alternately, the automatic insertion of the start code can be turned off, allowing the user to write a Start ID code manually by pressing the "Write" button. If a Start

ID code is mistakenly written, the "Erase" button removes it. Another Start ID feature, called "Renum," allows a Start ID number to be changed. If, for example, a CD is recorded with automatic insertion of the Start IDs but there is a segue between tracks five and six, all Start IDs after track six will be misnumbered. The manual "Write" feature, in conjunction with "Renum," can be used to correctly identify each track's beginning and number.

Similarly, the "Skip ID" write button will identify portions of the tape to be skipped during playback. A switch turns the skip function on and off. Like the Start ID code, Skip IDs can be erased and rewritten. Skip ID codes are particularly useful for playing back tapes of unattended radio broadcasts: commercials are easily identified and expunged. The Nakamichi 1000 has one other subcode programming feature I have seen on no other DAT machine: an end-of-tape marker. If an entire tape was not used in one recording session, the end-of-tape code makes finding where you left off easy. A "Search" button next to the End controls automatically finds the End mark on the tape. In addition, the auto-rewind function can be triggered by an End marker. End codes can be written and erased manually. All the subcode functions described are accompanied by LED indicators to show what code is written where.

Just above the subcode programming section, a row of numbered buttons selects tracks for searching or random-access play. These buttons are very similar to a CD player's random-access controls. A numeric LED window displays search and random program-play status. All subcode functions and indicator LEDs are repeated on the infra-red remote control. Incidentally, the remote control is finished in the same brushed aluminum as the processor and transport, and has the same elegant feel.

The lower middle portion of the front panel houses the tape transport controls. These are all the functions one would expect on a tape machine (play, fast forward, etc.), with the addition of "F. Skip" and "R. Skip." The F. Skip and R. Skip controls shuttle the tape forward or backward to the first detected Start ID. Alternately, pressing this button twice causes the transport to search for the second start ID, three times for the third start ID, and so on. A source/tape switch is conveniently located next to the transport controls. This selector

switch is used just like a source/tape switch on a three-head analog tape machine for off-the-tape monitoring.

Extensive tape-counter facilities are provided. An LED numeric display above the transport controls can be switched between four counter modes: Counter, Program Time, Absolute Time, and Time Remaining. One of four LEDs illuminates to indicate which tape counter mode is selected. Program time and absolute time are dependent on that information being written in the subcode, while counter and time remaining are not. Time remaining, an extremely useful feature, is calculated from the differential hub speeds of the DAT cassette.

Finishing off the front panel are six LEDs that indicate sampling frequency, the presence of a copy-prohibit flag, emphasis, and whether the incoming digital data is acceptable for recording. A fader up/down rocker switch is provided for smooth fade-up at the beginning of a recording and fade-down at the end. The fader operates in the digital domain.

Digital processor: technical description

Like its namesake the Nakamichi 1000 cassette deck, the 1000 DAT recorder is packed with innovative electronic and mechanical designs that set it apart from other DAT recorders. It is clear that Nakamichi wanted to build a machine that would maintain its technological leadership for many years.

Let's start with the A/D section, a major source of sonic degradation in any digital audio system. One problem with A/D converters is called quantization error. During A/D conversion, a number representing the amplitude of the analog audio signal at sample time is assigned to each sample. With 16-bit linear quantization, the converter must select a number between 0 and 65,535 to represent the signal's amplitude. A problem arises because an audio signal's amplitude is infinitely variable and may fall between two quantization levels. The converter's digital output is thus an approximation of the actual amplitude. Further exacerbating this problem is the non-linear nature of A/D converters. The jumps between quantization steps are not evenly spaced, due to chip-manufacturing imperfections, causing further quantization error. This error is particularly noticeable at low levels as a "granulation"

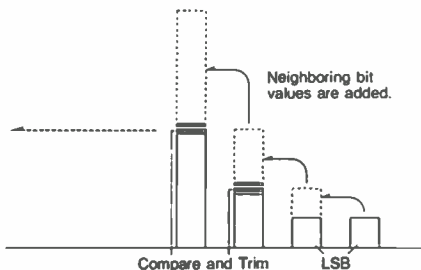


Fig.1 Nakamichi, A/D converter auto calibration

or "sandpaper" noise.

Nakamichi has taken an interesting approach to reducing this problem. The 2x-over-sampling A/D converter has a self-calibration feature, activated every time the 1000p processor is turned on. The 1.4-second process calibrates the quantization increments between all 16 bits, resulting in reduced quantization error. The process is shown in fig.1. The values of the A/D converter's two Least Significant Bits (LSBs) are summed to produce the value of the neighboring bit. The summed reference value is then added to the value of the newly calibrated bit to produce the new reference for the neighboring bit. This process is repeated for the remaining bits. The result is uniform amplitude steps between quantization levels. Although the A/D converter performs 16-bit quantization, the auto calibration system is said to produce 18-bit resolution.

Because A/D (and D/A) converters change their characteristics with temperature, optimum performance is achieved only after the unit is warm and has reached thermal equilibrium. Consequently, the 1000's A/D auto calibration feature should be used after the unit has been on for at least an hour. Recalibrating the converter is accomplished simply by turning the power off, then on again. I was unable to see what converters were used because the chips are covered by metal shields.

The goal of reducing low-level quantization artifacts in the A/D converter is paralleled in the D/A section. All DACs have linearity errors that generally increase as signal level decreases. Linearity error is the difference between the actual amplitude of the recorded signal and the DAC output. This problem is particularly acute when the signal drops to such a low level that only the last few LSBs are toggled. Manufacturing tolerances create real performance differences, even among chips from the same batch.

To improve D/A conversion linearity, Nakamichi has come up with an interesting design. To keep low-level signals away from the LSBs on the DACs (where the greatest error is), each channel uses two D/A converters (actually, both portions of a Philips TDA1541 S1 Crown dual DAC). The first DAC receives the 14 Most Significant Bits (MSBs) from the 20-bit digital filter, while the second DAC receives the remaining 6 bits. These remaining 6 bits, containing low-level signal information normally subject to corruption by a DAC's linearity error, are instead input to the MSB inputs of the second DAC. This scheme keeps the signal on the upper bits of the DACs, where conversion is performed at a higher level of precision.

It is apparent that Nakamichi places a high priority on conversion linearity: the 1000 uses an additional method to reduce DAC linearity errors.

Each DAC is individually measured using a 22-bit, high-precision, scientific A/D converter. The measurements are repeated 10 times and the average linearity error values for each bit stored in a ROM (Read Only Memory) chip. The ROM chips are programmed with calibration data unique to each DAC. During D/A conversion, this information compensates for the DAC's intrinsic linearity errors. The gain of the second DAC that receives the 6 LSBs is also stored in ROM to smoothly merge with the main DAC's output. In theory, the 1000's D/A converter section should provide nearly perfect conversion linearity. The dual DAC with ROM compensation scheme is shown in fig. 2.

The 1000's D/A section also incorporates a glitch-cancellation circuit. This circuit generates a timed, inverted pulse to cancel each predicted glitch.

On the question of whether audible degra-

ation occurs even without a change in the digital code, Nakamichi firmly believes it does.¹ According to Nakamichi, jitter "can have a pronounced effect on sound quality." For this reason, the 1000 incorporates a circuit they call the "High-Precision, Twin-PLL Digital Audio Interface." According to Nakamichi, this circuit removes jitter components and controls the timing of the output signal.

On the analog side, component quality is very good, with oxygen-free polystyrene caps and metal-film resistors. The switching relays are nitrogen-filled, with two gold-plated contacts (one contact is redundant) to reduce the chance of a poor connection. In addition, the motion of the contacts wipes clean the connection every time it is engaged. This type of high-grade component is usually found in computers.

The power supply is quite hefty, with dual transformers and large filter caps. The three-pin voltage regulators have unusually large heatsinks. A copper plate that forms part of the inner chassis separates the power supply from the A/D, D/A, and digital interface boards. Overall, I was very impressed by the parts quality and solid construction of the 1000. It is as beautiful inside as outside.

I was, however, concerned to find Signetics NE5532 op-amps in the input and output sections, not discrete class-A circuitry. When so much attention has been lavished on this no-compromise machine, I thought it odd that op-amps had been chosen for the critical analog section. However, my feelings about op-amps may be unfounded: in my review of four integrated amplifiers in Vol.12 No.9, I preferred the sound of the Creek 4140 to that of the Audi-

¹ See September's "Industry Update."

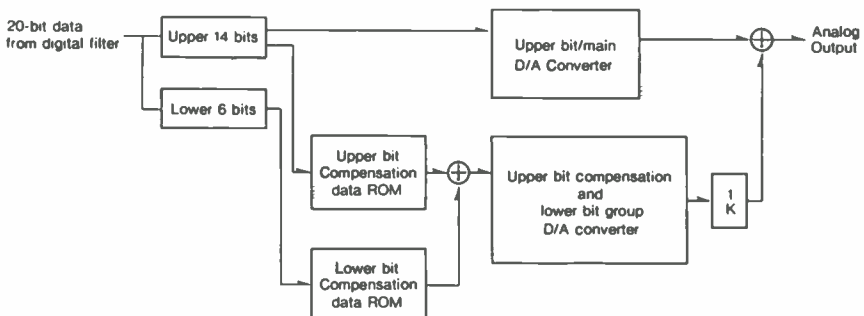


Fig.2 Nakamichi, block diagram, 20-bit calibrated DAC

olab 8000A. The latter uses discrete class-A amplification, while the Creek uses the 5532 op-amp. I have heard good and bad sound from both circuit types, and am beginning to think implementation may be more significant than the amplifying device.

The 1000's meters merit discussion. The dual 32-segment LED display is excellent, with wide dynamic range and fine resolution, especially at low signal levels. The selectable peak-hold feature is especially useful when setting recording levels. The overload indicator comes on when five successive samples are at maximum modulation.

Tape transport: technical description

Perhaps the most remarkable aspect of the Nakamichi 1000 is its radically different tape mechanism. Most DAT tape transports have been adapted from video-recorder technology, notably 8mm video. Nakamichi created a new transport from scratch, designed with digital audio recording in mind. This transport, called FAST (Fast Activated Stationary tape guide Transport), represents a significant improvement over video-based DAT tape-handling systems.

A video-based DAT transport, shown in

fig.3, relies on incline guides on either side of the rotating head drum for aligning the position of the tape against the head. These guides move back and forth each time the tape is loaded against the head, increasing the chance of reduced positional accuracy. The FAST mechanism uses two stationary head-guide blocks for tape-to-head alignment, reducing the possibility of tape misalignment. Each guide block has three guide pins to establish the correct tape slant and height, and to absorb any deviation in loading-pin position. These pins are made from a proprietary, graphite-impregnated plastic.

The tape-loading arms differ significantly from video-based transports. In a conventional mechanism, the loading arms move at a constant, low speed. The 1000's loading arms move with varying force and speed, set to ideal levels during the tape-loading cycle. The loading arms move slowly to remove the tape from the cassette, speed up, then slow down before the pinch roller engages and the loading arms lock into place. These tape-loading functions are under microprocessor control, and the mechanism provides feedback to the microprocessor. The 1000's tape mechanism is shown in fig.4. Because of the clear window mentioned earlier, these motions are visible.

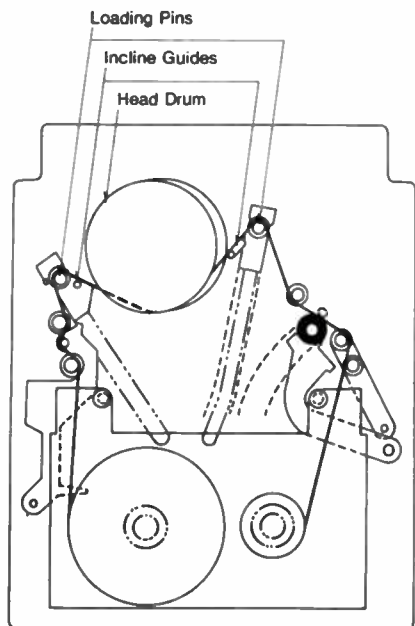


Fig.3 Conventional DAT mechanism

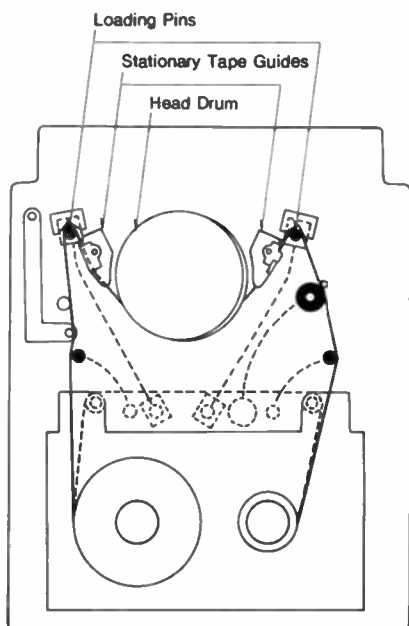


Fig.4 Nakamichi F.A.S.T. DAT mechanism

Another tape-transport feature unique to the 1000 is called the "Half Load Position." In a conventional transport, the tape is in contact with the head during fast-forward and rewind as it shuttles at 200 times normal speed. Tape-to-head contact is necessary during search functions, since the machine must read the subcode on the tape. Like all other DAT machines, the 1000 incorporates this feature, activated by pressing the fast-forward or rewind buttons. Unlike other machines, however, the 1000's Half Load Position lifts the tape away from the head drum, but does not retract fully into the cassette, during high-speed winding. If subcode searching is not needed, removing the tape from the heads makes sense since tape, head, and guide wear are reduced. Pushing the rewind or fast-forward button twice engages the half-load position. When in the half-load position, the wind time starts at 150 times normal speed, increases to nearly 600 times normal speed, then slows down to 150 times toward the end of the tape. When leader tape is detected, the reel-motor brakes are engaged to stop the tape. With the half-load feature, a two-hour DAT tape can be rewound in 19 seconds. Typically, DAT machines require between 45 and 60 seconds to fast-wind the same length of tape.

Finally, the 1000 incorporates a second pair of heads for off-the-tape monitoring. This is analogous to a three-head analog tape machine in which the third head plays back the information just written. This feature is known in professional digital audio recorders as "Read-After-Write" and is considered essential in demanding applications.

General impressions

I decided early on that putting the Nakamichi 1000 through its paces required recording live music. For a machine of the 1000's sophistication and capabilities, nothing less would reveal its intrinsic nature, both sonically and mechanically. When using a piece of audio equipment professionally, one develops a feel for the machine very quickly when it is asked to perform to a higher standard.

In addition to exercising the 1000 for this review, I wanted to record some music for the upcoming *Stereophile* sampler CD (probably available in the beginning of 1990). The disc will feature test signals and naturally miked acoustic music engineered by JA, JGH, and

myself.² I will prepare the CD master tape using a MacIntosh computer, a large hard disk, and a digital editing package. Watch for a full report.

Fortunately, I met a local guitarist named Bruce Dunlap who was interested in doing a project. I went to hear him play at his regular gig and knew immediately that he would make a significant musical contribution to our CD. We decided to record Bruce's original music, written for acoustic guitar and acoustic bass. Finding a recording site was a challenge. The room needed to be large enough for natural reverberation, isolated from outside noise, have periods of time when no one was using it, and have a person in charge willing to turn it over to us. After some searching, we managed to line up a 140-year-old Santa Fe church, the Loretto Chapel. The Chapel is now part of the Best Western Inn at Loretto, about two blocks from the *Stereophile* offices. Its most interesting feature is called the "Miraculous Staircase," a spiral staircase built with no nails or supporting structure underneath it. The staircase, along with the ornate sculpture and carvings, provided a diffuse reverberation field.

The microphones were Tim de Paravicini's EAR tube mics, amplified to line level by his EAR 824M tube mic preamp. The Blumlein stereo microphone technique was chosen for its natural spatial perspective. This setup, also called "crossed figure-eights," puts two bidirectional mics at 90° relative to each other.

Monitoring on location has always posed problems. During the session, countless decisions are made, based solely on what is heard through the monitoring system. It must accurately reveal what the mics are hearing. Fortunately, I was able to use a pair of Stax Pro Lambda Signature headphones for the project. Their natural tonal balance, resolution, and portability make them ideal for remote recording.

We set up the recording system about 6pm and recorded until 2am on two successive nights. For about 12 hours of this time, I monitored the live mic feeds through the Staxes and listened to the real instruments in the room. This provided an ultimate reference when playing back the master tapes. More on the sound later.

² During the review period, I transferred a number of my analog recordings that may be suitable for inclusion on this CD to DAT using the Nakamichi 1000. I can only agree with RH's feelings about what a joy the machine is to use. —JA

Functionally and ergonomically, the Nakamichi 1000 was a joy to use. Although numerous, its front panel controls are intuitive and very easy to learn. Within a short time, I felt completely at home with this machine. Its extensive subcode capabilities were particularly useful for marking the beginnings of takes and searching those points for playback to the musicians. The transport is exceptionally smooth and quiet, with no clunkiness when engaging fast-wind or play modes. In addition, the machine is very quiet during recording and playback, quiet enough, in fact, that I could sit just 15' from the mics without introducing any extraneous noise. DAT machines usually have a "whirring" sound as the rapidly spinning heads (2000rpm) beat against the tape. According to Nakamichi, the 1000's lower noise level is indicative of the gentler tape-to-head contact made possible by their superior tape-alignment system.

The 1000 did experience one glitch, however. The Read-After-Write function did not work, preventing instantaneous off-tape monitoring. Subsequent attempts in the listening room to monitor from the tape confirmed that the sample was defective in this regard.

The sound

In addition to recording live music, I recorded some CDs on the 1000 in the digital domain. Theoretically, the recorded DAT (called a "clone" to imply its identical nature) should sound the same as the CD. Many people claim that a DAT recorded from a CD sounds different from the source. However, I could detect no difference between them.

During the recording session, the piece just recorded was played back for musical evaluation. I compared the sound of the 1000 (after it had been through A/D conversion, tape storage, and D/A conversion) to the sound of the microphones. I was surprised at how close the recorded sound was to the real thing. The primary difference was reduced reverberation, and less "air" around instruments. This phenomenon is typical of digital systems in general, and not unique to the 1000. Perhaps due to this loss of ambience, the soundstage lost some of its three-dimensionality. This reduced the palpability of the instruments and their spatial perspective in the natural reverberation of the church.

More important, however, the timbre of the

guitar did not lose its warmth and delicacy. The 1000 did not add a metallic glare commonly induced by solid-state electronics and digital processing. The soft roundness that is the essence of the instrument remained uncorrupted. Bruce, the guitarist, was particularly pleased with the reproduced guitar sound. He is very sensitive to unnatural brightness on guitar heard on so many recordings but never from the instrument. His reference of what his guitar should sound like is far better than mine: he has spent years listening to the instrument compared with my 12 hours.

Back at the listening room, I prepared the 1000's digital decoder section for some head-to-head combat with the Digilog and my reference digital processor, the Theta DSPre. The playback system consisted of Vortex Screen loudspeakers driven by the Music Reference RM-9 tube power amplifier with a PS Audio 5.5 preamp used in the "Straightwire" mode exclusively, and Stax Lambda Professional Signature headphones.

My initial impression during the recording session of the 1000's smooth tonal balance was reinforced by extended listening. The top octaves were soft in comparison with the Digilog. I find that a laid-back treble presentation more accurately reflects the sound of real instruments. The Harmonia Mundi recording of Handel's *Water Music* is exceptionally free from glare and stridency, with totally natural timbres. If I hear glare when playing this recording, I know it is added by something in the playback system. This recording played through the 1000 revealed a tonal balance free from the stridency added by some other processors. In fact, I found the 1000 to be remarkably uncolored, especially in the midrange. In addition to the tonal balance of the guitar mentioned, vocals were particularly pleasing and unfatiguing.

The 1000's soundstage was open and detailed, with a nice bloom. Instruments were well-delineated within the soundstage, with a fairly good sense of depth. In this regard, however, it did not match the Digilog. The 1000 did not have the Digilog's transparent, "see-through" quality, but a slight haze that obscured the view *into* the soundstage. Instruments toward the rear of the soundstage tended to become homogenized, in contrast with the Digilog's ability to clearly present detail in its correct spatial perspective.

Bass reproduction tended to be richer and

more rhythmically satisfying through the 1000 than through the Digilog. Both processors had excellent bass dynamics, but the Digilog sounded slightly leaner in the midbass.

When comparing the Theta with other processors, as I've done in other reviews, I am always amazed by the leap in musicality offered by the Theta. This review is no exception. While the 1000's digital processor is good, it was no match for the Theta in terms of sound-staging, liquidity, and sheer enjoyment of music.

In short, the 1000 has a polite treble and neutral tonal balance, but falls short of the state of the art of digital decoding due to its lack of transparency and slight veiling. This combination of characteristics tends to reduce musical satisfaction, but does not grate on the nerves the way overly bright or tonally colored products do.

Measurements

I was particularly eager to measure the Nakamichi 1000's D/A converter linearity, since they took such great pains to reduce linearity error. I was not surprised, therefore, to discover that the 1000 had the lowest linearity error I have measured. Fig. 5 shows the plot made from playing the "fade to noise with dither" track on the CBS test disc. It is as near to a perfect straight line as I have seen. Fig. 6 shows deviation in dB from perfect linearity. Looking at these data in tabular form, the 1000 had an error of 0.13dB at -70dB, 0.41dB at -80dB, and



Fig. 5 Nakamichi, fade to noise with dither

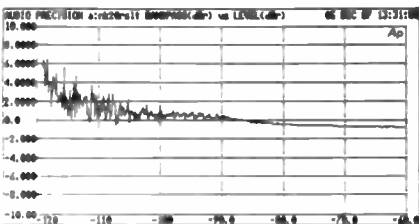


Fig. 6 Nakamichi, linearity error (left channel)

1.6dB at -90dB. Compare this with the linearity performance of the Digilog and Black Box 2 (Vol.12 No.10) which, like the 1000, use the Philips TDA1541 DAC.

The noise-spectrum graph made by playing a low-level signal was equally impressive. Fig. 7 shows a 1kHz tone at -90dB, and the noise spectrum. This is the best performance I have measured. The -120dB level at 60Hz is particularly impressive, indicating good power-supply isolation. The small positive linearity error indicated by the 1kHz peak crossing above the -90dB horizontal line can also be seen in fig. 6.

The measured frequency response was ostensibly flat throughout the audio band apart from a slight rolloff in the top octave, being down 0.5dB at 20kHz. This conforms with the printed specifications.

Conclusion

The Nakamichi 1000 Digital Audio Recording System is a technological *tour de force* and a significant milestone in home recording. Never before have home recordists had access to such a sophisticated digital recording system, usually reserved for professionals. The level of thinking that went into the 1000's design and construction puts it vastly ahead of other DAT machines. In addition, the "feel" of the 1000 is superb: it exudes a sense of luxury and elegance.

I must now deal with the 1000's \$11,000 price tag. A "Buy Recommendation" in *Stereophile* implies that the reviewer not only likes the product, but feels it offers sufficient value to warrant purchasing it himself. Based on these criteria, I can recommend the Nakamichi 1000 to anyone who takes recording seriously. Quite apart from the machine's extraordinary construction, extensive capabilities, innovative technology, reasonably good sonics, and beautiful styling, Nakamichi has made a product that will undoubtedly stand the test of time.

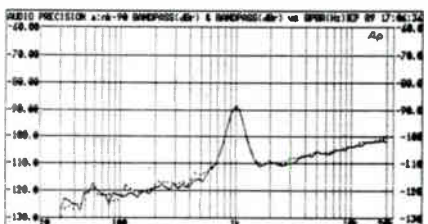


Fig. 7 Nakamichi, -90dB dithered 1kHz tone with spuriae and noise

When weighing value, longevity is surely an important factor in the equation. The highly advanced tape mechanism, futuristic styling, and modular construction of the processor and tape transport (allowing upgrades as converter technology improves) were clearly designed to keep the 1000 contemporary many years from now. In addition, the 1000's multiple-input digital processor can replace the D/A section of an existing CD player, further enhancing its value.

Potential buyers should be aware, however, that the 1000 does not represent the very best sound quality available in digital decoding. Although its sonics are above average and very listenable, the 1000 falls short of the musical performance offered by such Class A units as the Theta.

Questions have been raised about the viability of the DAT format. Will DAT outlive the

Nakamichi 1000? My opinion is that DAT is here to stay. Moreover, the professional recording community has embraced DAT with a passion. The format offers a relatively low-cost digital recording system with performance that equals and often excels systems costing ten times the price. The DAT format may even replace the industry-standard ¾" U-Matic cassette for CD mastering.³

The Nakamichi 1000 clearly represents the state of the art in home recording. Its innovative technology and designed-in longevity make it a worthy successor to the Nakamichi 1000 cassette deck which inspired it, both in concept and in name. **S**

³ See AES preprint #2770 (0-5), "Recording, Editing and CD Mastering Entirely in the DAT Format," by Robert Harley and Ray Keating, presented at the 86th AES convention in Hamburg, West Germany, March 1989.

THE WAVEFORM LOUDSPEAKER

Larry Archibald

Four-way, bi-amplified, moving-coil-driver loudspeaker, with electronic crossover. One 15" JBL subwoofer, two 6", long-throw, fiber/plastic-laminate woofers, one 1" textile-dome tweeter, one ribbon super-tweeter. Crossover frequencies: 150Hz, 3kHz, 9kHz. Crossover slopes (from bottom up): 18dB/octave, 18dB/octave, 12dB/octave. Sensitivity: 90dB/1W/1m. Recommended amplifier power: up to 500W, depending on room size (two stereo amps required). Maximum output: unspecified, but "110-120dB" is mentioned—which gives you an idea of what to expect. Frequency response: 28Hz-20kHz, ±2dB. Dimensions: 31" W by 21" D by 47" H. Weight: approximately 180 lbs each. Price: \$9800/pair. Approximate number of dealers: 2 in US, 3 in Canada. Manufacturer: Waveform Research, Inc., R.R. #4, Brighton, Ontario K0K 1H0, Canada. Tel: (613) 475-3633.

John Ötvös, the father of Waveform Research Inc. and The Waveform Loudspeaker, hesitates not at inviting ultracritical examination: "The Waveform is the most accurate, the best, forward-firing loudspeaker in the world." Period. Reviewers, of course, welcome such statements, and I'll be examining that one, but I'll also try to answer the inherent reviewing question of whether the Waveform is a good place for you to park \$9800 on your way to "the highest of high-end sound" (that was our slogan for the first Santa Monica High End Hi-Fi Show).

The company

Without a doubt, one of the first questions I'd ask myself is whether the company asking for my \$9800 had proved itself in the high-end

wars—what were the chances that my dealer would still be selling this expensive product two years from now, or, more ultimately, that this little-known speaker company would still exist?

Given the small number of US outlets for the Waveform (Absolute Audio in Orange County and Keith Yates Audio in Sacramento), the former question might well be answered simply by interviewing the dealers involved. Though their powers of prediction aren't perfect, I'm sure you could get an idea just by talking to Evelyn Sinclair or Keith Yates. And, of course, *Stereophile* reviewers aren't given to clairvoyance as to the survival of companies, though we'd like that ability—some of the products we've rated most highly have been produced by people just starting out who've

struggled for at least a couple of years. (Not that this is the ultimate bad sign—companies like Audio Research, Conrad-Johnson, and Thiel stayed small for significant periods of time, only to burgeon into card-carrying members of the audio establishment in later years.)

Still, I would want to be careful. Since 1987, when they were introduced, just 17 pairs of Waveforms have been built, and it's the only loudspeaker made by Waveform Research. Although this represents almost a quarter-million dollars at retail (many of the first ones were made of solid black cherry, and sold for \$17,000), Waveform's feet are just getting wet in the speaker business.

Mr. Ötvös himself is not so inexperienced. He has been a master cabinet-builder and woodworker running his own business for upward of 20 years, and self-admittedly is not the design genius behind this loudspeaker. That said, I got the distinct impression that he *is* its "father," and in more than just a commercial sense: He employed Paul Barton of PSB to design the Waveforms (see Vol.11 No.5 for JGH's review of the first PSB loudspeaker sold in the US); he determined the unusual shape of the speaker; and I am sure he decided where the emphases should lie. John Ötvös is a direct, self-assured man (see the quote that begins this review) with every intention of making it in the ultra-high-end speaker business; I respect his determination.

The design

But what of his speaker? All products in this price range demand that you go the extra mile in setting them up and choosing your associated components, and the Waveform is no exception. Like the IRS Betas, the Waveforms require two high-powered stereo amplifiers. Canadian loudspeaker manufacturers, who so frequently come from the discipline of NRC (National Research Council of Canada) testing—with its insistence on blind evaluation of everything—don't like to talk about the importance of amplifiers chosen for use with their loudspeakers, but I found both the Waveform and the Mirage (see review in Vol.12 No.6) to be significantly amplifier-sensitive. The Waveform, in addition, requires *significant* power-handling capability—not so much because it's inefficient (90dB/1W/1m is awfully good for a high-end speaker), but because of the room you will likely want to use it in, and the volume



Waveform loudspeaker

levels you'll want to experience to take advantage of its unique capabilities. It's possible to drive the Waveforms with a pair of under-\$1000 amplifiers, but you'll be a lot happier with a pair that run \$6000-\$10,000 each, I promise you.

In appearance, the Waveforms are at first off-putting: both base and top are irregular octagons (you might think of them as rectangles with mildly truncated corners), the larger base tapering to the smaller top. The front baffle, in which all drivers are mounted, is an almost triangular trapezoid with base and top parallel (see photo). My pair was finished in black plastic not dissimilar to what Thiel used in the review pair of CS1.2s I had, and to what Mirage use in their M-1s. Somehow, the Waveform black plastic has more of a luster—the Thiel and Mirage plastic is mirror-like in finish, where the Waveform has a very fine "orange-peel" (to use an automotive term) texture that is more sensuous and "thick." Overall, the Waveforms cut an imposing figure: squat, heavy (though the manufacturer claims the same weight as the Mirage M-1, they were at least twice as difficult to move around), and sensuously black.

Given this unusual design, I was solicitous of opinions from visitors during the Waveforms' stay *chez moi*, and the results were mixed. There were a few denunciations ("ugly"), quite a few noncommittal responses, and at least one rave. Though at first repelled, I gradually came to like them, though the obligatory more-or-less corner placement left them more in the way—and it's impossible to ignore them—than I liked. For many people the near-wall placement will be more convenient.

Part of my liking them, and part of my frustration, came from reading the owner's manual. Throughout the manual (produced, it would seem, once and for all in 1987) the speaker is referred to not as the black plastic-finished monolith described above, but as a sensuous chunk of furniture made from 2"-thick black cherry—in fact, much of the manual deals with care of the wood surface! This obviously reflects John Ötvös's woodworking background, as well as his tremendous personal involvement in the product—much as if he's describing the care and handling of his child (accurate, if he's like most speaker designers)! For me, this led to frustration. Though Ötvös explained that doing the black-cherry version would cost at least \$30,000 at today's wood and woodworking prices, I couldn't help but see the Waveform as an intensely elaborated physical object whose soul (in the black plastic version) had been taken away. I'm one of those who was raised on the spiritual values of wood grains—and at \$9800 this is a self-indulgence I'd like to see indulged!

It hardly needs to be said that, even in black plastic, the Waveform is exquisitely crafted. These days people like to talk about how superbly Japanese automobiles are finished. And they are, for the late 20th century. However, they still don't hold a candle, mass-produced as they are, to the interior of a pre-1972 Mercedes, Jaguar, or Rolls (or, for that matter, a Japanese handmade sword or wooden comb). The Waveforms come from this latter tradition—I yearn to see a pair in black cherry.

Speaking of the owner's manual, it provided me with all the detail that Mirage omitted from theirs. The speaker is thoroughly discussed technically, as are set-up possibilities for various-size rooms, frequency responses and impedances are graphed, and an elaborate table for amplifier gain-matching is there to boggle

the mind (of questionable utility, too, as we shall see). There are even the obligatory laudatory comments from other manufacturers and *Digital Audio*. But, though John Ötvös obviously labors over the appearance of his loudspeakers, where is his respect for production values when it comes to the printed word? The "Owner's Manual" consists of 23 Xeroxed sheets with 8 different typefaces (not counting the reprint from *Digital Audio*, and the graphs), many of them badly produced on a laser printer (yecchhhh). Why must "high-end" audio companies keep stubbing their toes on such simple matters as presentation? After all, you're not asking a guy to spend \$400 on this product. Would he buy a car that put out an owner's manual like this? Wake up, Mr. Ötvös. Wake up, industry!

Another toe-stub came with the active equalizer used to split the signal between the 15" woofer and the rest of the system (mid-tweeter and tweeter-to-supertweeter crossovers are accomplished passively). This reasonably well-constructed 19"x10"x2" black box actually performs two functions. In addition to dividing low and high, it provides equalization (called "coupling") for the bottom octave of response (it seemed to affect the range below 35Hz). Confusingly, you choose higher numbers (greater rotation clockwise on the knob) to get less low bass.¹ But that wasn't the toe-stub; it was the fact that the holes in the back of the equalizer were too small to accommodate most high-end interconnects. (The RCA phono jacks are mounted directly to the crossover's circuit board, inside the chassis. Ergo, there have to be holes in the chassis for the interconnects to fit through.) Sears sold me a reamer adequate for making the holes bigger, but that plus the necessary dressing of the hole edges was a pain and made the crossover cover significantly less attractive. Mr. Ötvös says that all future crossover chassis will have adequately sized holes, but it's indicative of Waveform's tiny production that they've not been compelled until now to acknowledge the widespread change in the dimensions of high-end interconnect terminations (a change which, as far as I know, has no compelling justification other than marketing).

¹ The rationale for this terminology is that the control is there to correct for excessive coupling between the unusual level of bass response the Waveform offers and the different rooms in which it will be used. Higher numbers therefore indicate more coupling—which has to be diminished. Get it?

A crossover problem of more long-lasting significance was that various interconnects kept losing contact with their respective sockets. This was *not* a problem with loose connections from socket to board, but rather a lack of size compatibility between interconnect and socket. Since there are no fixed standards in this area (see Markus Sauer's "Industry Update" in the September issue), it really isn't the crossover's fault, but I've had no such problems with the various preamps and amps I've used with the same interconnects.

As mentioned before, John Ötvös hired Paul Barton of PSB to design the Waveforms. Paul is reputed to be one of Canada's best designers, and has long experience working in the NRC facilities to evaluate his designs. (The Waveforms were themselves thoroughly evaluated there, though no details were provided to me as to specifics.) Judging from the final design, I'd say that Paul's brief was to design a cost-no-object direct-firing radiator with even on-axis frequency response that went very deep in the bass and played loud with little stress. He worked on the Waveform project from 1985 through 1987.

Setup and adjustments

The system used for this review consisted of the familiar CAL Tempest II CD player, the equally familiar Well-Tempered Turntable, Kimber 4AG speaker cable, AudioQuest interconnects, a Motif MSI100 amp, a pair of VTL 500s, the Krell KSA-200, and a pair of Carver Seven T-mods. Significantly new were the Conrad-Johnson Premier 7 preamp, a VTL Ultimate preamp, and the AudioQuest 7000 cartridge.

The Waveforms were set up in my 20'x35' living room by "Father" Ötvös himself. I had situated them about where I usually put speakers (10' from the back wall and 6' from the sides), but John warned me that wouldn't be the best location. This kind of took me aback—after all, this was not a di- or bipole radiator requiring specialized back-wave cancellation (or lack of it), but a direct-firing speaker, ostensibly similar to a Thiel, Spica, or Vandersteen—all of which work fine in the location I'd chosen. Well, John was right and I was wrong. In my familiar location, the Waveforms just didn't "click" at all. Sitting in my familiar position about 9' from the speaker baffles, the sound was dry and uninvolving. Moving back in the room (19–22' (!) from the baffles)

made things better, but not ideal.

Still, John, trusting in my good sense, felt happy leaving the speakers in this setup. "Yup, that's what they sound like," pronounced he, after running a few test tones, moving the knobs on the crossover to where he wanted them, and playing one helluvan audiophile CD: the Dorian organ transcription of Mussorgsky's *Pictures at an Exhibition* (DOR-90117). That one work both demonstrated some amazing capability in the Waveforms and left us speechless enough to want to end the listening day.

I'll have to hedge this next statement because some speakers that produce prodigious levels are outside of my experience, but I'm sure that the Waveforms play this CD at more realistic levels than almost any other home loudspeakers. The only time I've experienced organ that loud is in the sounding chamber for the pipes themselves at the church I grew up in (First Congregational Church of Winchester, Mass.). John was claiming peaks of only 99dB at the back of the room, but we played the same CD later, at a slightly lower level, and JA measured peaks of 109dB 2m from the speaker. By comparison, the IRS Betas—no slouch in the low-end department—started experiencing severe lower midrange distress at peak overall levels of an estimated 100dB. That's a big difference, and the sound from the Waveforms was clean!²

Obtaining some different amplification (initial auditions used the Carvers and the Motif) and settling into some room readjustment, I eventually got the Waveforms in more sympathetic circumstances (6' from the back wall and 5' from the side wall to the center of the speaker). Optimum amplification proved to be the newly arrived VTL 500s on the top end; combined with a Krell KSA-200 on the bottom. (Unfortunately, the Krell buzzed through the woofers at a readily audible level, undoubtedly an artifact of its interaction with the crossover. It does, however, the same thing through the Infinity IRS Beta crossover. The buzz is not evident while music is playing, except during

² JA, while impressed with the Waveforms' output capabilities, heard significant bass distortion at the +100dB levels we were generating. Either the music is too off-putting for me—that CD is the ultimate audiophile test CD, which makes it automatically anathema in my book—or I'm simply not sensitive to bass distortion, a conclusion I've reached on other occasions where people were hearing bass distortion that I missed. (Peter Mitchell is particularly sensitive to it.) Or maybe it was that, during much of the audition, I was outside the house, where the sound was still really loud.

extremely quiet passages.) The Motif was a non-starter in terms of musical involvement on these speakers, but the Carvers served well enough on the low end, though not as tight and fundamental as the Krell. For a while I used a Krell on top, but that exacerbated an upper-octave problem which I'll get to in a moment.

Putting the speakers more in the corner—almost always a no-no—livenes up the sound of the Waveforms considerably. My normal near-field listening position (by which I mean a position where the direct sound of the speakers predominates), about 8' from the speaker baffle, still didn't work: the sound was too direct and in-your-face, but the Ötvös-recommended position 20–25' back from the speaker baffle did much better in terms of coherent sound. "The Waveform loudspeaker was expressly designed for room interaction which means bare side walls are best in the immediate vicinity of the speakers for early reflection interaction. . ." —Waveform Owner's Manual. This must be what was going on here.

Though this kind of placement does work best with the Waveforms, I must say that designing to this criterion is, in my opinion, a mistake. Among other things you may have noticed is that hardly any of you have rooms available in which it's even possible to sit 20' from the loudspeaker! I'm lucky, and to a big extent I have such a large room devoted to speaker evaluation because *someone* at the magazine should (particularly with speakers like the IRS Betas). In addition, anticipating a significant percentage of early-reflection sound (sitting closer to the speakers yields a much higher percentage of direct sound) simply means anticipating unknown tonal-balance colorations. My room, for instance, has a large rug on one side wall and a similarly sized bank of windows on the other. Inevitably, the reflections off one wall will sound different from those off the other—but this is true in virtually every room, which is why near-field listening gives you a better feel for the particular speaker.

More important, well-recorded ambience is immediately evident in near-field listening. By contrast, the more early room reflections you hear, the more you are adding (uniformly, from record to record) the sound of your own acoustic to the recorded one. Yes, if your room is reasonably live, this will give you greater "ambience," but it will be the same ambience every time, not unique as it is in different recording

environments.

All this moving around of speakers and amplifiers required readjustment of the crossover. The factory recommendation is to set the level according to a formula, carefully detailed in the owner's manual. Doing this, with virtually all the combinations of amplifier I tried, resulted in drastically too much low end. Generally speaking, if you're aware of the low end as an identifiable entity, you've got too much. So I backed it off, still trying to stay fairly close to the factory recommendation, figuring I might be "starving" the review sample of low end. This was a mistake. Eventually, JA came over with his spectrum analyzer and we adjusted the Waveforms for most even measured balance between bass and midrange. The result is fully 7.9dB lower than the factory recommendation. My advice would be to always use a third-octave spectrum analyzer to make this adjustment. Not only will you be sure of the correct bass level, you can assess the effect of the Coupling control to make sure you're not getting excessive low bass.

And, although the effect of small amounts of rotation on this knob are not readily noticeable, the overall effect of getting the balance right is substantial, as you would guess. Not only do you become less aware of bass—a good sign—but instruments actually appear to have more body, I suppose because there is a better "fit." In addition, because recorded ambience is more believable, the recording sites come alive to a greater degree, a characteristic most needed with this speaker.

The sound

This section of the review has been the most difficult to write, as it frequently is when the overall judgment is not terribly positive. I make it a practice to listen to the speaker in question while I finish the review, pounding away at my NEC Multispeed,³ and it has only confirmed my feeling, as I sit here, that I frankly haven't enjoyed listening to the Waveforms during most of the review period. Certainly not compared to my most recent reference, the Mirage M-1, nor even compared to more modest speakers such as the Thiel CS1.2.

When writing a review, though, my personal

³ Heavier than JA's preferred Toshiba 1200, and with much shorter battery life, but it has a standard, comfortable keyboard and a readable screen—the only two characteristics of a computer I care about.

response takes, to some degree, second place to the product's actual performance. How will you, the prospective consumer, like the product in your home? Separating these two areas of evaluation is the hardest part of reviewing.

The adjustments described above were crucial to getting the Waveforms even into the "listen for more than one day" category. As delivered, there was just no involvement from records that normally have me wrapped up. Everything was important: the positioning, the particular amplifiers (especially the VTLs on top), the crossover adjustments, my sitting position, plus a certain amount of settling in.

Even so, for me, the Waveforms are excessively flat. Not flat in frequency response—though they are notably that, before you get to the top octave—but flat in musical presentation. On only a few records, and with one combination of associated equipment, did I begin to be caught up in the musical performances being presented by the Waveforms. Dick Olsher said it best, during his audition of the Waveforms: "These are pretty average-sounding speakers."

This should not be interpreted to mean that the Waveforms are average speakers. There are ways in which they're extraordinary—see how they handled the Mussorgsky organ transcription, above. And, compared to most of what's out there, they sound coherent, well-balanced, and will play astonishingly loud, well.

Compared to the elite—which, at \$9800, is where they undoubtedly place themselves—though, they're average-sounding. They don't pull you in, make you tap your feet, make you want to dance, or cry. It's not easy for me to assign responsibility for this averageness. The bass is impressively deep, tight, and, within the limits of my listening room (which, despite its size, has significant room modes), smooth. This bass goes notably lower than the Mirage M-1s, and will play notably louder than even the Infinity IRS Betas. (Truth be told, the loudness limitation of the Betas is in their lower midrange panels, with energy in the 100–200Hz range, but a limitation it still is.) In the initial Waveform setup, with the speakers out from the back wall and driven by Carver Seven T-mods and the Motif 100, there was an upper-bass coloration that seemed to subtract power from male bass voice and give it a kind of hollowness. Either I got used to this, however, or it went away with different speaker positioning

and amplifier selection and crossover adjustment. (JA tells me that the measurements of the woofer showed up a relatively high-Q resonance in the upper bass, which may have been what I heard.)

If you're a fan of very loud, bass-heavy music (such as the Dorian CD), the Waveforms have to be heard to be believed. They energize the whole house, and do so with no feeling of danger—to the speaker, that is (both your ears and the house may be in some danger). Not only that, the midrange and treble ranges maintain their integrity while all this bass is going on (though this was somewhat difficult for me to evaluate since my ears were so far into overload).

Midrange and lower treble frequencies were presented with evenness and lack of undue emphasis on any particular instrument or voice characteristic. Nevertheless, I never felt drawn into the music—the Waveforms met neither the desideratum of bringing the orchestra into the room nor that of bringing me to the orchestral hall (see JGH's superb definition of the goal of a hi-fi system in his review of the Denon anechoic recording, Vol.12 No.9).

There was some problem with a mildly withdrawn midrange at first—the kind that, dissatisfied, makes you want to keep turning up the volume. Use of both the VTL 500 amplifiers and the VTL Ultimate preamp more or less cured this, though I know those components can perform much better with speakers like the IRS Betas. The primary problem here seemed to be inadequate definition—re-creation—of the soundstage, and I honestly don't know why. To some degree, I was warned of this possibility by John Ötvös during his visit, though he didn't realize that's what he was doing. He told me that his speakers didn't add any false ambience like the bipolar Mirages; instead, he preferred the honest presentation of soundstage that forward-firing-only speakers offer. Unfortunately, the Waveforms don't create the soundstage that even modest forward-firing speakers like the Thiel 1.2 provides, nor what you can get from the Spica Angelus. In fact, the "false" ambience provided by the Mirages is much closer to what I judge is really on the records (as auditioned through numerous other speakers, and compared to the sound of real acoustic spaces) than is the very minimal soundstage provided by the Waveforms.

And this is not a subtle lack. On the records

(and a few CDs) I own which provide *fabulous* ambient information—where, sitting with a glass of wine and the latest *Stereophile* in hand late at night, you feel you're actually *there*—the Waveforms were able to only suggest a bit of hall, with moderately believable images. I must be the only audiophile on earth who isn't tired of *Jazz at the Paunsbop*, but I actually just listened to it for the first time in the last three weeks. Honest! On the IRS Betas, you can locate the patrons of the Pawnshop—you could go over and take their drink orders, music playing or not. On the Waveforms, the patrons only appeared during breaks in the music—phantom jazz fans who somehow disappeared while the music played! Meanwhile, recordings with suggested ambience on the Waveforms simply dry up—you're aware of the instruments or voices themselves, but nothing more.

Other characteristics of the speaker don't give me a hint as to how the Waveforms "disappear" the ambience. I suspect it has to do with crossover design, and possibly also with running a 15" woofer up to 150Hz (though the crossover's low-pass rollout is steep). More responsibility, though, should probably be given the design goal of a speaker that works best in the corners, and which has to be listened to at a great distance. By the time the sound reaches you it's been affected so much by your own acoustic that the original can no longer be discerned. Or maybe it's just that I'm spoiled by constantly listening to the efforts of engineers who finalize their designs over a period of years—and then constantly search to better them through little tweaks and improvements.

This, unfortunately, only addresses the issue of what the Waveform omits. In terms of long-term listenability, the more serious problem is the speaker's upper-octave performance. Check JA's measurements at the end of this article for a technical flaw that wouldn't get past Boston Acoustics, much less Thiel, Vandersteen, or Magnepan. An average 6–8dB hump between 10 and 16kHz is *audible*. Normally *Stereophile* reviewers only become aware of measurements after the listening is concluded, but in this case initial measurements were taken with John Ötvös on site, so he would be aware of the results ahead of time—in case there was anything awry. Surprisingly, Mr. Ötvös wasn't aware that his speakers had this treble peak,

even though his own measurements, as supplied in the owner's manual, show exactly the same shape of frequency response (though the absolute level of treble peak we found was greater than Waveform's own measurements show).

So I was aware that I might hear an excess of treble, and hear it I did—night after night after night. This treble boost, even with the VTL 500s in the system, was *noticeable*. On extremely well-recorded music, with well-behaved microphones and no digititis (on CDs), about all I noticed was an additional emphasis on the leading edge of transients, a bit of extra sheen to cymbals—they were more *there* than is normal. (Interestingly, just as I'm writing this, I found that my sensitivity to this treble edge is drug-sensitive. I've had a headache for the last three days—JA said that's what I get for listening to a speaker with a 15kHz peak!—and was prescribed some Darvon for it. The edge became much more noticeable, rather than less.) Well-recorded trumpets had a bit more spitty edge, record ticks were more pronounced, had more character.

That's the not-so-bad part. The really bad sounds came from any records that were less than superbly recorded. This happens to include 95% of the music I like to listen to. I'm as willing to listen to superbly recorded great performances as the next audiophile—something like Reiner's rendering of the Rossini Overtures on RCA (LSC-2318)—but there aren't nearly enough records like this to satisfy my appetites, particularly the dreck I find at garage sales. Yet, for me, hi-fi is about *enjoying* the music you like to listen to, not grimacing at it. I found that the Waveforms' treble peak simply exercised a veto on any musical adventurousness; you *pay* if you put on a record that's even a trifle less than clean.

The treble peak also puts great strain on your associated equipment. I didn't find a solid-state amp that could be put on the top part of the speakers—this review would have come out much worse (and much shorter) if the VTLs hadn't shown up. Moving-coil cartridges with a rising high end?—Forget it! I was using the AudioQuest 7000, which is a wonderfully smooth, well-balanced cartridge. And don't forget that CD was coming to me through that most forgiving of players, the CAL Tempest II. Don't talk Sony CD sound through the Waveforms.

Musical dynamics deserve some attention, as it's the area in which the Waveforms perform best. As you might have guessed from my experience with the Dorian CD of *Pictures at an Exhibition*, the Waveforms will play loud. I thought that I had hit a peak with the Altec Bias 550s in this respect, but the Waveforms seem to both play louder in an absolute sense, and play loud with much greater ease. In addition, they retain their general sense of coherence and sound character even at very loud levels, something few speakers can manage. (The IRS Betas do the same thing, but to lesser levels.)

This is an area where high-end products are routinely poor. Polite music can be played at realistic overall levels (though rarely with realistic internal dynamics), but orchestral works, rock music, organ, and loud choral music are always reminding you not only that it's reproduced, but that the speaker might actually break! (In seven years I've seen probably 30 or 40 drivers broken by excessive volume level, almost never by peaks above 100dB.) This is not an area where you will ever, if you value your hearing at all, need worry with the Waveforms. They can play anything you throw at them at full frequency range, and at any volume level where you won't need hearing protection (and at many levels where you should have it). Subjectively, this gives you a freedom you just don't have with other, more modest (and more accurate, involving) products.

On the downside, I didn't find the Waveforms tempting me to turn down the level, as I did with the Mirage M-1s,⁴ where the sound was so involving that there didn't seem any need to play particularly loud. In fact, in order to offset the lack of involvement referred to above, I ended up playing the Waveforms at significantly higher volume levels than usual. The only exception was material with lots of upper-treble content, where the sound had to be turned down—or off—for reasons cited above.

Conclusion

It will come as no surprise that I didn't find the Waveforms "the most accurate, the best, forward-firing loudspeaker in the world." Nor,

⁴ Most live music is heard at levels substantially below what we listen to at home. The better a system preserves low-level detail, the less distortion, noise, and discomfort the system produces, the lower the level it is possible to employ while still feeling involved with the music. So far, only the Mirage M-1s have really impressed me in this regard; I'm sure there are others, but they are few.

with their current sonic characteristics, could I recommend you buy them for \$9800. By no means do I think they should be dismissed, though, as I did the Altec 550s. The Waveforms are a serious attempt by a serious man.

I question the product development process currently employed by Waveform. Work on these speakers was begun in 1985 and completed in 1987; the speaker has remained unchanged since then. Now, as pleasant as it is to see a product with real stability, it simply isn't possible to produce a landmark high-end speaker once and for all. Infinity, who've made tens of thousands (maybe hundreds of thousands) of speakers, can't do it, Vandersteen can't do it, Thiel can't do it, Magnepan can't do it (though they try). What makes John Ötvös think he can do it with the first product his company has made?

Perhaps, in addition to further research and testing at the NRC, Waveform could pay attention to extensive testing in the field, customer and dealer response (which surely would have shown up the horribly errant supertweeter level), research and experimentation with new materials and drivers, and just plain designer thought—on an ongoing basis, like other high-end speaker companies. Though I don't think that a Bandaid approach to correcting the current speaker's problems would yield something recommendable in the \$9800 range, it's certainly possible that a major redesign, focused on the problems I've brought up as well as others that may lurk beneath them, could. The Waveform does some things extremely well, particularly in the area of coherent dynamics, and I'd hate to see those performance capabilities disappear from the home loudspeaker scene. **S**

Postscript: measurements

As Larry said earlier, we ran a couple of FFT response measurements on the Waveforms while John Ötvös was visiting, in order to check that the speakers were working okay, and found that the speaker had an excess of energy in the top audio octave. According to John, the reason for adding the ribbon supertweeter to a tweeter that is usually used alone (a version of Dynaudio's D28) is to fill in a suck-out in the high treble on the intended listening axis. After Larry had completed his listening, I ran a more rigorous set of tests to investigate the Waveform's measured perfor-

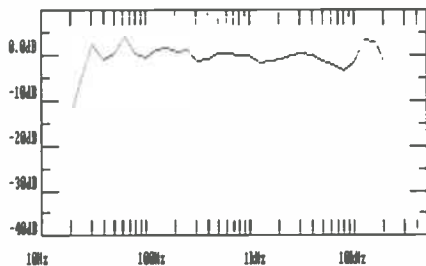


Fig. 1 Waveform, $\frac{1}{3}$ -octave, spatially averaged, in-room response

mance further. First, I looked at the speaker's spatially averaged room response on a $\frac{1}{3}$ -octave basis,⁵ fundamentally examining the Waveform's forward response in a window centered on the listening seat (fig. 1). (The match between the woofer and the upper range of the speaker was achieved with the bass level set to "-3" and the bass contour set to "4," which was how Larry had been listening using the VTLs on the top and the Krell KSA-200 on the bass.) Points to note are the smoothness of the response trend from 200Hz or so to the upper presence region, around 6kHz. The crossovers between the subwoofer and midwoofers and between the latter and the dome tweeter have obviously been well-managed, and the sound should be smoother overall throughout the midrange than the Mirage M-1 which so excited LA in the June issue, which has a slight boost in the middle mids. ("Middle mids!" Oh English language, where are you when I need you?)

Second, the near-corner room placement excites room resonances to a greater degree than placing the speakers further out in the room. Despite the spatial averaging, which usually "smooths out" the effects of room modes in this measurement, the Waveform can be seen to boost the 32Hz and 63Hz $\frac{1}{3}$ -octave bands to a significant degree. Due to the close positioning of the subwoofer to the floor and the highish crossover to the midwoofers, the normal floor dip in the 200-300Hz range has been pushed up in frequency and reduced in amplitude, there only being a slight lack of energy in the 315Hz and 400Hz $\frac{1}{3}$ -octave bands. The LF extension in-room, however, is good, the speaker not reaching its half-power point until a low 23Hz or so. This was con-

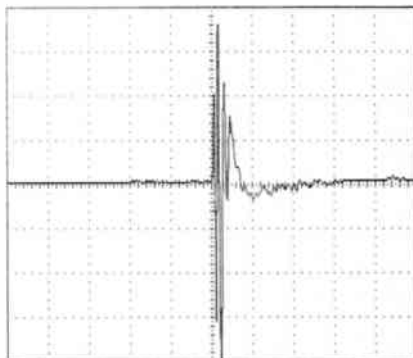


Fig. 2 Waveform, impulse response (5ms window)

firmed by the nearfield measurement of the woofer response, the -6dB point again lying at 23Hz (without taking the port contribution into account).

The main response anomaly, however, can be seen in the treble, where a general lack of energy in the upper presence region, which would contribute to Larry's feeling that the speaker lacked immediacy, is followed by a significant energy peak in the 12.5kHz and 16kHz bands. This peak was noticeable on all forward axes and is exacerbated both at high levels, as the region immediately beneath it then depresses even further (this also shown in Waveform's own measurements), and if the listener's ears are much above the dustcap of the upper of the two mid-woofers. This peak won't be perceived as a "brightness," being too high in frequency, but will noticeably "whiten" recorded hiss and, as Larry says above, also makes the speakers very intolerant of any source that also has problems in the treble. It could be plainly heard as a distinctly metallic-sounding "whistle" on pink noise. Looking at the individual response curves taken to derive fig. 1 suggests that the smoothest integration across the treble region (though still with too much HF energy audible) is with the listener's ears about 27" off the ground. This is an unrealistically low listening height, however; in my experience, 32" to 39" is more typical.

Laterally, however, the individual measurements taken for fig. 1 suggest a wide listening window over which the spectral balance stays quite uniform, without any "hot seat" effect.

Fig. 2 shows the Waveform's response to a 25 μ s rectangular pulse on an axis 36" off the floor, *ie*, level with the upper of the two

⁵ See pp. 166-167 in the October 1989 issue for a full discussion of how and why I test loudspeakers in-room. —JA

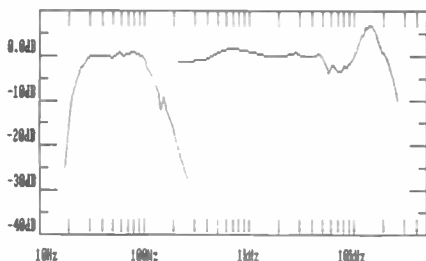


Fig.3 Waveform, FFT anechoic response, averaged across 30° lateral window, plus nearfield LF response

woofers, which is where Larry's listening chair placed my ears. With a horizontal scale of two large divisions equal to 1ms, the impulse response is not at all time-coherent, due to the use of steep-slope crossovers. The impulse shape clearly suggests multiple arrival times for the contributions from the many drivers, which could make the optimum axis height quite critical unless the listener sits a long way back from the speakers. The impulse tail is also overlaid with a degree of HF ringing.

The speaker's anechoic response, derived by FFT analysis from five impulse measurements taken across a $\pm 15^\circ$ horizontal window, is shown in fig.3 along with the subwoofer's nearfield measured response. The boost in the top octave is clearly visible, as is a ragged-shaped suckout in the octave below. The position, width, and depth of this suckout are all extremely dependent on the measuring axis; in fact, moving the microphone a little higher and further back than the position used to derive figs.2 and 3 gave a narrow notch 16dB deep at a hair above the crossover frequency, 9kHz! This axis sensitivity of the upper treble balance is undoubtedly due to the use of two widely spaced drivers in this region, something that is rarely seen. In general, designers wanting to use a supertweeter place it very close to the main tweeter—the Spondor BC1, for example—in order to minimize such problems.

Fig.3 also suggests a slight degree of mid-range emphasis to the sound, agreeing with the overall in-room response trend in fig.1.

Looking at the nearfield response of the subwoofer in fig.3, you can see a small peak at 157Hz. This was due to a high-Q resonance centered on this frequency and could be clearly heard as a "hoot" as the sinewave swept through its position. I suspect that this may have something to do with Larry's feeling that

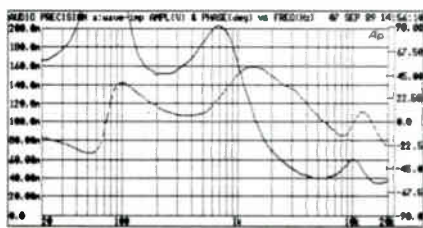


Fig.4 Waveform mid/HF, impedance magnitude and phase (2 ohms/vertical div)

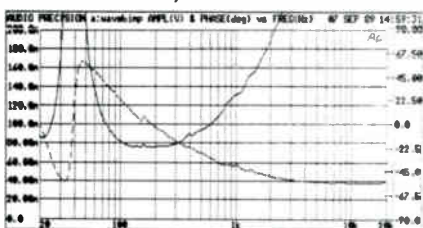


Fig.5 Waveform subwoofer, impedance magnitude and phase (2 ohms/vertical div)

there was an audible anomaly in this region, particularly as the resonance's highish-Q nature—its -3dB points were just 9Hz on either side—suggests that it will not always be excited by music.

The phase and amplitude of the Waveform's two sections are shown in figs.4 (upper range) and 5 (subwoofer). The midwoofers feature a high impedance which should not prove to be any problem; though the dome and ribbon tweeters do drop to 4 ohms and slightly below, this is with a negligible phase angle throughout their passband. Fig.5 reveals the presence of the woofer resonance, with small kinks in both phase and amplitude plots at approximately 160Hz. The port tuning is revealed by the amplitude minimum just above 20Hz, while the overall characteristic suggests that the Waveform's bass driver is an easy amplifier load overall.

Finally, I looked at the Waveform's electronic crossover characteristics. The crossover circuitry and all the in/out sockets are carried on one large printed-circuit board, with a small transformer supplying AC power to a pair of solid-state voltage regulators. All the filter circuits are based on Signetic NE5532 dual-op-amp ICs, and the response-shaping networks are carried on plug-in DIL headers to allow for easy modifications. Good-quality components are used throughout, including Bourns pots for

the two controls, but the unit as a whole would seem a little outclassed by the amplification the Waveform speakers are likely to be used with, in my opinion. Yes, the sound of a circuit using op-amps will be dependent to a large extent on the way in which the designer has implemented the power supplies and other ancillary matters, as well as by the characteristics of the particular IC used. However, it is fair to point out that the 5532 is some 10 years old and there are a number of op-amp ICs now available that offer significant improvements in both subjective and objective performance. That LA felt the Waveforms to have overall a rather non-involving nature could well be due to the crossover circuitry, I feel.

I found that the "bass level" control altered the gain in the low-pass channels by a dB amount approximately equal to the numbers engraved on the front panel, from -9dB to +15dB, while the "bass contour" control affected the amount of boost applied centered on 29Hz. In fig.6, the highest of the LF curves was taken with the control set to "0," with the other three "4," "7," and "10," the latter slightly cutting the subwoofer's overall level in the low bass. The rest of fig.6 shows the equalization

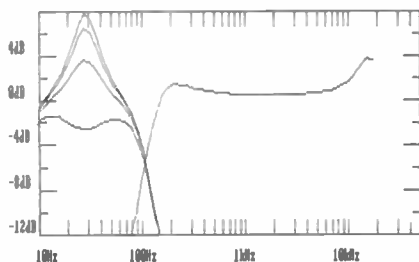


Fig.6 Waveform electronic crossover high- and low-pass functions (LH traces top to bottom, Bass Contour = "0," "4," "7," and "10")

applied by the crossover box to the high-pass feeds, which consists of a slight peaking of the midwoofer response—+1.5dB at 225Hz—coupled with a deliberate boost applied to the range covered by the supertweeter—+4dB at 16kHz. This goes a long way toward explaining the HF boost noted both in the listening tests and in my in-room measurements. I have to say that *either* the supertweeter *or* the boost alone applied to the dome tweeter would each have been sufficient to ensure a flat treble response. With both, however, the result is, to my ears, unlistenable. —John Atkinson

QUICKSILVER KT88 MONO POWER AMPLIFIER

Dick Olsher

All-tube, monoblock power amplifier. Power output: 60Wpc into 8-, 4-, or 1-ohm loads (17.8dBW, 14.8dBW, and 8.8dBW, respectively). Power bandwidth (assumed -3dB points): 13Hz-55kHz. Input sensitivity: 1.25V. Input impedance: 100k ohms. Dimensions: 14" W by 9.25" D by 6" H. Weight: 30 pounds. Samples tested: S/Ns 2543 & 2544. Price: \$1850/pair. Approximate number of dealers: 40. Manufacturer: Quicksilver Audio, 3707 N. Merrimac Circle, Stockton, CA 95209. Tel: (209) 477-6428.

The recent unfolding of drama and tragedy on Tiananmen Square underscored the ruthlessness of the current Chinese regime, but apparently did nothing to undercut China's trade relations with the West. One of those relations is the export of vacuum tubes. Having obtained the M-O Valve Company's tooling, they are cranking out copies of the fabled KT88 output tube and are presently the only source for this tube—at least in this corner of the Galaxy. As far as quality control, however, Chinese output tubes in general hold a poor reputation for reliability. None other than VTL's David Manley

described them as "dogshit," and Quicksilver's Mike Sanders admitted that he's experiencing on the order of 20% rejects. Perhaps the fact that the Chinese are enjoying an old-fashioned capitalistic monopoly might explain this state of affairs. But not to worry. Quicksilver carefully selects their KT88s for the latest version of their bestselling power amplifier; those you'll receive with the monoblocks should last a good 2000 hours. Besides the in-house QC, another reason for this expected longevity is the fact that the Quicksilver KT88s are operated conservatively at a plate voltage of 480V.



Quicksilver monoblock tube power amplifier

I would recommend, however, that you obtain replacement tubes directly from Quicksilver. They are available in matched pairs at a cost of \$80/pair for a total cost of \$160 for a pair of amps. According to Sanders, all of the other tubes should last for many, many years.

Incidentally, the older version of this amp, the one with the 8417 output tube, has been discontinued. So if you covet a pair of these, the KT88 version will have to do.

Removing the amp's bottom plate allows an unobstructed view of its innards and holds a few surprises. First of all, there aren't very many passive parts here. A few caps and resistors combine to give the appearance of a low-density layout. Second, there are no circuit boards to be seen. Everything is hard-wired with silver solder. Parts quality and workmanship both appear to be excellent. The only complaint I could possibly lodge has to do with the size of the terminal strip provided. The size of the screws is too small, and their spacing too narrow, to give massive spade lugs, such as those on the Cardas speaker cable, any chance of mating to the terminal.

The input signal is direct-coupled to a pair of 12FQ7s which in turn drive a pair of KT88s in a push-pull configuration. The screen grids of the KT88s are connected in ultra-linear fashion so that the KT88s operate in a partial triode mode. The power supply features a pair of 5AR4 tube rectifiers providing full-wave rectification. Fairly generous reservoir electrolytic capacitors are used, bypassed with high-quality plastic film caps. The use of vacuum-tube rectifiers ensures a soft, low-surge turn-on, and extends the useful life of the circuitry.

Output-transformer output taps are provided for 8-, 4-, and 1-ohm loads. Most of the

time, the 4- and 8-ohm taps should be used. On a rare occasion when you run into what I would call a short-circuit type of load (eg, Apogee Scintilla), you should consider the 1-ohm taps. These taps can push upwards of 18 amps peak into a 1/2-ohm load—not bad for a little tube amp.

The output impedance of the monoblock is around 1 ohm, pretty steep even for a tube amp. Even with a zero-impedance speaker cable, the damping factor for this amp will be poor. In fact, Quicksilver recommends that the amp be placed directly behind the speaker to minimize the length of the speaker cable run. I used 11' of both TARA Labs Phase III and Cardas Hexlink speaker cable, each with a total loop resistance of less than 0.2 ohms.

There were no changes in my front end, except for the introduction of the large e-series power supplies for the Threshold FET-10. The SOTA Star Sapphire 'table, SME-V arm, and Sumiko Virtuoso DTi analog front end provided the bulk of the listening impressions.

The sound

It is my standard practice to use a variety of speakers to assess the sound quality of a particular amp. This is important in order to quantify an amp's load preferences and investigate any potential synergisms or antagonisms. In this case, I discovered the Quicksilver KT88's sonic performance to be quite load-sensitive; probably not too surprising for a low-power tube amp with a hefty output impedance.

Let me start with the Koval-modded Quad ESLs. Several of the KT88's sonic attributes really hit home. The mids were consistently liquid and lush-sounding in the best tradition of classic tube sound. Textural grain and grit did

not appear to be in the KT88's sonic vocabulary. The upper mids were sugar-coated, with wondrously sweet violin overtones. There's Itzhak Perlman lapping up Bruch's romantic score as usual (Violin Concerto I, EMI ASD-2962), but the sheer sweetness of the violin's harmonics exceeded anything I'd heard before. Soundstage transparency and focus of instrumental outlines were quite convincing. I had no trouble fleshing out the the acoustic space of the original performance. In these respects, the KT88 amp impressed me as significantly improved over the older version, but as it's been a long while since I've heard the 8417 version, I can't really be precise or quantitative in any such comparisons.¹

Bass lines, however, were soggy and more than a shade on the muddy side. It was difficult to resolve pitch in the bass registers. The reproduction of a double bass, whether plucked or bowed, tended to obscure detail primarily through the midbass range. The cutting bite of brass was dulled and softened, being quite a bit more polite than the real thing. In general, treble transients were subjectively slower, softer, and less defined or fuzzier when compared with our Class A Recommended tube competition.

The Celestion SL600s proved to be a less favorable match for the Quicksilvers. The upper-octave recession of the SL600s was exacerbated by the KT88's muted presence region. The result was a diminished sense of immediacy and drama. The presentation was less involving, requiring more effort on my part to concentrate on the music. When your mind starts to drift and you have to force yourself to tune back in, it's time for a cold beer. The mids were as lush and suave as before. Spatial resolution and perceived palpability of image outlines were also very good. Bass lines were still ill-defined and lacked convincing impact. The highs were decidedly honey-coated. The dynamic range appeared to be compressed. With high-powered symphonic music, the KT88s appeared to run out of steam.

This was basically the KT88s' problem when driving the Acoustat Spectra 22 loudspeaker system—they were just working too hard. The sound got congested, strained, and unpleasant to listen to during loud passages. Being power-

hungry, the Spectras are very likely a poor choice for the KT88s. However, with more intimate music, the amp's essence managed to shine through. For example, my wife Lesley's vocal outlines (during the Lesley Test) were portrayed with a convincing sense of palpable focus. The textural quality of the mids was as liquid as before, and the soundstage was transparent enough to penetrate deeply into the original acoustic space of the performance. On the minus side, the luster of Lesley's upper registers was noticeably diminished and the upper mids were slightly thickened. The KT88 consistently appeared to filter treble brilliance. These alterations, while euphonic in nature, nevertheless considerably modified the timbre of Lesley's voice.

At this point, the most objectionable aspect of the KT88's performance quite clearly became the bass. To be frank, I became fed up with all of that mud. The low frequencies were loose and ill-defined and otherwise spoil the nice things the KT88 was doing in the mids. It did not require a changeover to a solid-state amp to convince me of just how much the KT88 was giving up in the bass octaves. A switch to the Roger Modjeski-designed Music Reference RM-9 stereo amp (sample under review) was enough for that. The attack and definition of bass lines was altogether much more satisfying.

Finally, I tried the KT88 with the Martin-Logan Sequel IIs. The IIs were bi-wired to the Quicksilvers' 4-ohm taps (with great difficulty, due to the amps' small-sized terminal posts), and the stat panel and woofer were connected out-of-phase.² I was expecting the KT88 to soften the treble, but the sound of the upper octaves was quite wooden and lifeless. Transients were soft all right, but much of the natural brilliance of the lower treble and presence region went missing in action. Amazing! I never thought the Sequels could be subdued to this extent. Again, the mids were lush, and spatial resolution was quite precise, but there was some soundstage veiling and overall the presentation just failed to gel. And, of course, bass delineation was disappointing.

Summary

There is no such thing as a universal amplifier,

¹ I last listened to the Quicksilver for a "Follow-Up" review in Vol.8 No.4, p.108, following the substitution of triode driver boards for the original pentode boards.

² See "Follow-Up" in October, p.174, for a full discussion of why the Sequel IIs sound better connected in this fashion.

and the Quicksilver KT88 is a prime example of that—an amp in search of an obliging load. The best of the above lot appeared to be the old Quad ESL. Here, the KT88 sang sweetly and romantically. The mids were lush and suave—vintage tube sound. The imaging was convincing in its illusion of palpability and spatial resolution of soundstage information. Reproduction of the upper octaves was euphonic, overtones were consistently sugar-coated. In fact, the upper octaves were so sweet that continual exposure to this amp/speaker combination may increase your incidence of dental cavities. (Ordinarily, I would have at this juncture recommended periodic fluoride applications to guard against the onslaught of tooth decay, but since I have no license to practice dentistry or medicine, I will refrain from offering any such advice.)

Even with an accommodating speaker load, you will very likely have to tweak your front end to strike a desired tonal balance. The amp is so soft and muted on top that it will obviously defy a simple substitution into the signal path. The saving grace is that you may now be able to accommodate a “hot” but fairly inexpensive MC cartridge.

As far as the bass goes, I know of no cures. I advise you to insist on an in-home audition and see just how well you tolerate the amplifier's lack of bass definition and impact.

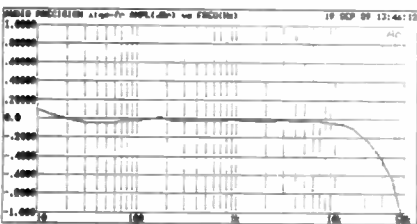


Fig. 1 Quicksilver, response at 1W into 8 ohms (S/N 2544)

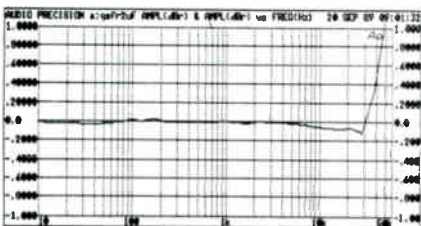


Fig. 2 Quicksilver, response at 1W into 8 ohms in parallel with 2.2μF

The KT88's colorations are euphonic and thus generally benign. Having the KT88 Quicksilver for a blind date, I would be grateful. Its sweetness and midrange seductiveness—for at least one evening—are bound to override other considerations. But as a steady date, I'm sure I'd balk. A steady diet of loss of timbral accuracy and bass definition would be sure to weigh heavily against them when their initial charm wears off.

At \$1850/pair, the Quicksilvers are no longer the bargain they used to be. And they face serious competition at this price point, especially from some of VTL's vast stable of amps. To my mind, the KT88 represents an honest attempt to capture a significant slice of the state of the art at a reasonable cost to the consumer. And if your first priority is the midrange, I'm certain you'll become a true believer. If, however, you demand a balanced performer, you'd better look elsewhere. **S**

Postscript: measurements

On the test bench, the Quicksilver monoblocks clipped at 56.6W into 8 ohms (17.5dBW) and 54.4W into 4 ohms (14.4dBW), measured at the 8 and 4 ohms taps respectively. The second sample showed slightly better performance, clipping at 61.3W into 8 ohms (17.8dBW) and 57.5W into 4 ohms (14.6dBW). Frequency response was flat from 20Hz–20kHz with a slight 0.2dB rolloff at 20kHz. Adding a 2.2 μF capacitor in parallel with the load resistor to simulate some reactive speaker loads (like the Quad ESL) produced a rapidly rising top end. Unlike many other amplifiers, however, the rise did not begin until nearly 30kHz, well out of the audio band. This correlates with Dick's subjective impressions: He didn't hear high-frequency hash when driving the Quads with the Quicksilvers, but did note high-frequency problems when driving Quads with the Prodigy OTL monoblocks (Vol.12 No.9). The latter amplifier had a significant rise at the top of the audible band when driving a capacitive load.

The Quicksilver's frequency response driving a purely resistive load is shown in fig.1, while fig.2 shows the result of adding a 2.2 μF capacitor. Output impedance was very high, measuring slightly over 1 ohm. This certainly explains the Quicksilver's changing sonic character when driving a variety of loads.

—Robert Harley

MERIDIAN D600 DIGITAL ACTIVE LOUDSPEAKER

John Atkinson

"Two-and-a-half-way," reflex-loaded, floor-standing loudspeaker with full infra-red remote control, three integral 70W amplifiers, line-level crossover, tone controls, and 4x-oversampling digital filter with 16-bit D/A converter. Inputs: two analog (balanced/unbalanced) via phono sockets; two digital (S/PDIF standard) via coaxial cable/phono sockets, one digital input via an EIAJ optical connector. Analog sensitivity: 0dBm (775mV). Analog input impedance: 10k ohms. Communications, a) with Meridian 207 CD player and 204 FM tuner, and b) with other loudspeaker of the pair, via DIN sockets. Drive-units: 1" (25mm) aluminum-dome tweeter, two 6.3" (160mm) polypropylene-cone woofers with diecast frames. Crossover frequency: 2.5kHz. Frequency range (no limits given): 36Hz–20kHz. Maximum SPL: 110dB. Dimensions: 35.5" (900mm) H by 8.3" (210mm) W by 11.9" (295mm) D. Enclosure volume: 26 liters. Weight: 71 lbs (32kg) each. Finishes available: Black Ash, American Walnut, Rosewood veneers. Price: \$5490/pair including Model 609 remote control and digital/communication cables to connect to 207 CD player or 201 preamplifier and 204 FM tuner. Approximate number of dealers: 40. Manufacturer: Meridian Audio Ltd., Eccleston Road, Tovil, Maidstone, Kent ME15 6QP, England.¹ US Distributor: Meridian America Inc., 14120-K Sullyfield Circle, Chantilly, VA 22021. Tel: (703) 818-3028.

In audiophile circles, it is the "Stuart"—electronics designer Bob Stuart of the Boothroyd-Stuart collaboration—who has received most recognition. The contribution of industrial designer and stylist Allen Boothroyd has gone relatively unremarked. Yet as I unpacked Meridian's D600 "Digital Active" loudspeaker, I was struck by Boothroyd's ability to make the humdrum—a rectangular box loudspeaker—seem more than just that. The man has one hell of an eye for proportion. From the first Orpheus loudspeaker of 1975, through the Celestion SL6 and '600 (where AB did the industrial and package design), to this latest Meridian loudspeaker design, his brainchildren look "right," to the extent of making competing designs appear at minimum over-square and clumsy, if not downright ugly.

"Digital Active?" The "active" is self-explanatory, given Bob Stuart's long history of designing loudspeakers which accept a line-level input to feed internal and integral amplification. But "digital?" This is rather a misnomer as it suggest that the actual principle of operation of the D600 is digital; *ie*, it directly converts binary input words into equivalent sound pressures. But no, the D600 may accept a stan-

dard multiplexed-stereo serial datastream, sampled anywhere from 30–50kHz, but it converts this to analog via an internal digital-filter/DAC before driving the crossover/equalizer/amplifier electronics which in turn are connected to conventional moving-coil drive-units.

I first heard a pair of D600s at the 1989 Winter CES last January, and to say I was impressed would be an understatement. Even in the unfamiliar circumstances of a room at Las Vegas's Golden Nugget hotel,² the sound had a breathtaking clarity to it, apparently achieved without any undue treble emphasis. The L'Oiseau-Lyre recording of Handel's *Messiah* quite frankly took my breath away, and I let Bob Stuart know right away that I wanted a pair for review.

Technical details

Starting at the conventional end, the D600 uses three drive-units, all sourced from SEAS. The tweeter appears to be a descendant of a ferrofluid-cooled aluminum-dome unit the Norwegian manufacturer developed for the English Monitor Audio company, which first appeared in their R652/MD model. (Thiel also uses a version of this tweeter in their CS1.2 model.) Although the D600 uses two 6" woofers, the bottom one is rolled off above 200Hz to reduce the radiating area in the mid-range and above. (Widely spaced drivers will

¹ If this address strikes KEF owners as vaguely familiar, they're right. Although Boothroyd-Stuart continues to manufacture Meridian products at their factory almost next door to Quad[®] in the ancient market town of Huntingdon near Cambridge—check out The Old Bridge Hotel for a great traditional English lunch if ever you're touring this area—since Meridian became part of the AGI group, the company that owns KEF, its marketing wing was moved to Kent.

² One of the town's classier hotels, that is if *any* Las Vegas hotel can be said to be "classy."



Meridian D600 digital-input active loudspeaker

produce severe beaming once the wavelength of sound drops below the distance separating their acoustic centers.) The D600's low-frequency alignment is fundamentally reflex, a 7.25"-deep, 2.5"-diameter port venting at the bottom of the speaker's rear panel. I believe that additional filtering is used here, as in other Meridian active speakers, to give an overall 6th-order high-pass characteristic, though two controls on the supplied 609 handset do allow some control of the bass alignment. "Bass" provides shelving up or down of the response below 200Hz of ± 2 dB, while "Q" offers a choice between flat response and a roll-off of -3 dB at 50Hz, this possibly allowing a near-rear-wall placement. (I suspect that the latter is actually the speaker's intrinsic response, the "flat" position applying a degree of electronic boost to equalize the woofers' output to be flat.)

The cabinet itself I understand is internally braced and constructed from $\frac{3}{4}$ " plywood panels loaded with a lead-loaded bituminous compound. It certainly feels extremely dead when rapped with a knuckle—what audiophile can resist *that* simple test? The $\frac{3}{4}$ " MDF baffle is recessed to allow the drivers to be flush-fitted, while the grille is constructed from black cloth stretched over what appears to be a polystyrene space frame. A green LED display at the speaker's top indicates volume setting and selected source (Slave), the Master also offering a choice between those and track/time information (Meridian 207 CD player) or station/frequency (204 FM tuner). A red LED glows to indicate the Master speaker.

The rear of the cabinet is recessed by some 60mm ($2\frac{3}{8}$ "), which both adds some stiffening and leaves space for the D600 electronics. (The cabinet recess is lined with aluminum foil to provide a degree of electromagnetic screening.) Two black-painted aluminum panels enclose this tray—the bottom one is only 8" tall and carries the mains input, on/off switch, and transformer; the second runs the full height of the cabinet and carries five separate printed circuit boards. The topmost carries the digital electronics and control microprocessor, including a Philips B-grade 4x-oversampling digital filter—"B" stands for "Best"—and is screened by a tin can, this mechanically damped by a Sorbothane pad on the rear panel when the screws are tightened up. This is fed an input signal by a 7-pin DIN socket, dupli-

cated by a phono socket. A second digital input is also provided via another phono socket. The DIN socket "hears" from the other Meridian components in the system what they're up to and supplies them with the control information sent by the 609 handset. A second DIN socket sends a duplicate of the input digital data to the other speaker of the pair, this, of course, extracting only the channel information relevant to its own operation.

Two sets of analog inputs are also provided, both balanced and unbalanced, via phono sockets. I found it easy to misunderstand these: selecting "Radio," "LP," or "Tape 1" all routed the analog input from the AI jacks to the output circuitry. Finally, I sussed what was going on, helped by a glance at the 207 CD player control panel. Yes, it was all the same analog signal, but the different source settings affected the 207's input switching: selecting "Radio" with the remote switched whatever was plugged into the 207's "Radio" inputs to the 207's outputs, hence to the D600 output. The only exceptions are "Tape 2," which assumes that a second digital source is plugged into the D600's second serial digital input socket, and "Video," which assumes a digital source plugged into the EIAJ-standard optical input of the D600.

The analog inputs go to CD4053BCN CMOS switching chips. These common ICs also appear to be used to activate the various switched EQ options and the approximately 1dB/step 64-level volume control, all controllable from the handset. The oversampled, digitally low-pass filtered digital data are converted to single-channel analog by a selected Philips TDA-1541A S1 "Crown" dual-DAC chip, this offering in my experience a genuine 15.5-bit resolution, and followed by what appears to be a discrete-transistor current-voltage stage. Both low-noise bipolar NE5534 and LM351/LF353 JFET-input op-amp ICs are then used to implement the crossover filters and equalization functions.

A separate 70W power amplifier is used for each drive-unit, each one being constructed from discrete transistors and using a single complementary pair of Motorola MJ15003 & 4 TO-3 devices. These are bolted to the rear panel with vibration-proof washers and use the sheet metal as a heatsink. They run fairly cool, however—they are said to operate in Meridian's "unique class-AA non-switching" mode.

Fundamental to any piece of hi-fi kit's audio performance is its power supply. The base of the rear panel carries two 10,000 μ F electrolytic capacitors and the boards are literally festooned with three-terminal voltage regulator chips, both premium LM317/337 types and less-well-specified 78/79 types being in plentiful supply. Overall, construction is to a high standard.

If I were being picky—and isn't that I'm paid for?—I am faintly irritated that you still have to run an additional set of long interconnects to the D600s to handle the analog input signals. I wait, therefore, for Bob and Alan to introduce their next-generation CD player/preamplifier which will undoubtedly have integral A/D converters to convert all the analog signals to serial digital datastreams to be fed to the D600s down the single datalink in place of the CD data output. (Larry Archibald thinks that this is a dreadful idea, reducing the fine-quality output of, say, a Linn record player to the homogenized level of any other digital source!).

For those who prefer a more conventional active loudspeaker, Meridian's M60 (\$3690/pair) appears to be identical to the D600, apart from lacking the remote-control sensor, pre-amp switching facilities, and digital inputs and outputs.

Setup

Any number of D600s can be set up in a particular system, for Dolby-Surround purposes, for example, the 609 control already having buttons to set appropriate levels. Which of a pair of D600s is configured as a "Master"—*ie*, it controls that room's system—and which a "Slave" is set at the factory. If you need to change this choice, however, it's just a matter of telling the speakers which is which with the 609 remote.

The 609 remote has a "standby" button which puts the D600s (and a 207 and 204 if connected) to sleep. Pressing any function button, or loading a CD into the player's drawer, wakes up the speakers, but I found that an upper-midrange hardness apparent on turn-on took about 30 minutes to be sufficiently ameliorated that I could enjoy the sound.

Source components consisted of the Linn Troika/Ekos/LP12 analog record player sitting on a Sound Organisation table, a Revox A77 open-reel recorder, and a Meridian 207 CD player, the latter driving the "Master" D600 from its digital and "Comm." outputs via the

supplied Meridian cable, with the "Slave" D600 daisy-chained to the first, again with Meridian's own cable. (Though the D600 has an optical input, I didn't have long enough optical connectors to use these inputs with another CD transport; the 207 CD player, reviewed by Thomas J. Norton in Vol.11 No.11, only has a coaxial digital output.) For most of the auditioning, the analog sources fed a Mark Levinson No.25/26 preamplifier combination which then drove the D600s via 15' lengths of Madrigal HPC balanced interconnect. This is fitted with XLR plugs, so short XLR/twin-phono adaptors fabricated from twisted solid-core cable had to be used to drive the D600s' "A1+" and "A1-" analog inputs, which use gold-plated phono jacks. To be honest, apart from the 6dB increase in gain, I couldn't hear any benefit from driving the speakers with a balanced signal compared with an unbalanced one. However, as the balanced cables were the only sufficiently long ones I had to hand during most of the review period, why not?

I experimented only slightly in siting the D600s. Basically, as with other designs intended for out-in-the-room placement, there are only a limited number of positions in my 20' by 16' listening room where speakers will achieve the optimum balance between precise soundstaging and a neutral transition between the upper bass and lower midrange. The D600s ended up 42" away from the (longer) rear wall (which is faced with books and records) and 6' away from the sidewalls, toed-in toward the listening seat, which is some 8' distant. The sidewalls have bookcases at the midpoint between the speakers and the listening seat, which I believe disperse any strong early reflections (apart from that from the floor), and the overall room is reasonably live (though I have attempted to kill a strong 63Hz resonance with ASC Tube Traps). Compared with, say, Larry Archibald's or J. Gordon Holt's rooms, the direct sound from a pair of speakers predominates in my room. Though the '600s are supplied with plastic feet, these can be pulled off to reveal height-adjustable spike feet. Once I had determined the optimum positions, I did all serious auditioning with the speakers coupled through the carpet to the concrete-beneath-saltile-tile floor.

At the beginning of my listening I was disturbed to hear a serous rattle emanating from both cabinets, particularly on piano recordings. The culprits turned out to be the blanking

plugs for the optical inputs, which sang their hearts out at one or two midband frequencies.

I removed them.

The sound

Before proceeding with the auditioning, I must first get a confession off my chest. Although I tried hard to like earlier Meridian active loudspeakers, having a considerable degree of respect for the design talents of Bob Stuart and being covetous of a speaker visually styled by Allen Boothroyd, I was never ultimately satisfied. The M2, for example, always worried me with a peculiar midrange balance that I only ever found really acceptable on chamber music, and the larger models, such as the M10, had what I could only describe as an "odd" bass character. From the outset, however, I will say that I enjoyed my time with the D600 *immensely*.

Unlike other speakers I have auditioned recently—the Thiel CSI.2 and Spica TC-50, which use first-order crossover filters and beam severely in the vertical plane—the D600 seems relatively uncritical regarding listening axis. My chair places my eyes and ears level with the LED displays; that seemed an appropriate listening axis, therefore. The cabinet certainly seemed dead enough despite its almost 36" sidewalls; placing my ears close failed to reveal any midrange "singing." It was a different story with the metal rear panel, however, this adding a (low-level) hooty quality to the sound emitted behind the speaker. Probing with a sinewave revealed this panel to go off strongly at 330Hz, though as this is the rear of the speaker, its effect on the sound is probably minimal.

With all the tone controls flat, the D600 has rather a "sweet" character, upper registers sounding slightly depressed and lending violin slightly too warm a tone. Tilting up the highs with the tilt control gave the sound a more generous portion of treble, but also accentuated a slight HF "scratch," noticeable most on recorded tape hiss, which became very slightly more "fizzy" or "white." I found that cutting the treble sucked the sense of "air" from the recorded sound. The "flat" position of the treble control actually seemed to be the best choice in musical terms, in my quite-live room at least, not the least because the speaker's superb presentation of recorded detail to a large extent compensated for any feelings of insuffi-

cient treble. The Harmonia Mundi *Water Music*, for example, was revealed as having an impressive dome of ambience gently excited by the period instruments. And the quiet key clatter on the continuo bassoon added to the sense of realism. This degree of detail reproduction almost took on a fetishist nature. I kept reaching for such consummately perfect production jobs as Jennifer Warnes and Leonard Cohen singing the latter's "Joan of Arc" on the famous *Famous Blue Raincoat* album (Cypress 661 111-2) just to hear the tambourine breathed on in the second verse—"and who are you?" she sternly spoke. . . 'why, I'm fire,' " he replied—and the gentle slap echo producing filigree reverberations of producer Roscoe Beck's guitars.

The soundstage on the *Water Music* recording was revealed as having a rather ill-defined center, something to do with Peter McGrath's miking I guess. To check whether this was not being accentuated by the speakers' imaging ability, I put on Kavi Alexander's Blumlein-technique recording of violinist Arturo Delmoni (*Water Lily Acoustics WLA-WS-07-CD*). At first I thought that the sound was splashing to the right a little as the violin played above the treble stave.

Then it splashed to the left.

I could only assume that rather than a speaker aberration, the D600s were allowing me to hear the violinist's slight body motions as he played. Putting on dual-mono pink noise revealed the D600s to produce, if not quite a positional singularity at the center of the line joining the speakers, at least an extremely narrow image, stable with frequency. The '600s should and do throw a laterally precise soundstage.

Despite the superb retrieval of ambient detail, however—you could "hear the walls" on my own piano recordings to an extent I hadn't realized existed before—the soundstage lacked depth compared, for example, with that produced by the Spica TC-50. This could be due to a tonal aberration in either speaker, but it also might be tied in with the fact that the Spica is time-coherent (on its optimum but critical listening axis), whereas the D600 is a typical UK design in that the tweeter leads the midrange in time but the sound is more smooth in the crossover region and the listening axis is considerably less critical.

At the opposite end of the spectrum, the D600's bass in the flat position was generous

for what is fundamentally a small loudspeaker. Visitors to my listening room expressed astonishment that such extended low frequencies could emanate from such visually small enclosures. While the D600s didn't shake Santa Fe with the bass pedals of the excellent new Dorian organ recording from Paris's Saint Eustache church (DOR-90134) in the manner the Waveforms reviewed by Larry Archibald had, with their 15" JBL woofers, there was still bass to burn, within the dynamic-range limitations of four 6" drive-units. That this impressive low-frequency performance is the result of artifice rather than intrinsic air-moving ability was revealed by the fact that the bass noticeably thickened up at climaxes while the rest of the speaker still seemed dynamically unrestricted. Take the recent Bernstein Mahler 5 (DG 423 608-2), for example. When the music is quiet, as in the deservedly famous *Adagietto*, the double-basses have full power and weight. But in the tremendous opening orchestral chords after the solo trumpet fanfare (which cruises 25–30dB lower in level), there was a distinct threshold around volume-control setting 45, equivalent to a 100dB spl (unweighted) in-room, where the bass and lower midrange became significantly congested.

There was also a dynamic-range problem in the upper midrange. A slight nasality at low levels remained benign again until the spl reached much above 100dB, when the sound rapidly hardened. Boy soprano at high levels, for example, became suddenly quite unpleasant. I am talking about high replay levels here, but I thought it worth exploring because Meridian does quote a maximum spl of 110dB for the D600. And even Martin Colloms felt that a pair of D600s could reach 108dBA, which is *very* loud, while remaining clean-sounding.³

One note on the D600's bass is in order. In common with other high-order-LF-alignment speakers, the body of its midbass tone seems to lag a little behind the initial edge of the sound of double-bass and bass drum when compared with a good sealed-box design. This can be alleviated by switching the "Q" to the "Cut" position, though I then felt the balance to lack weight. Shelving up the "Bass" control to "+1" gave, then, a better midbass quality in combination with the "Cut" setting, but still at the expense of ultimate low-bass weight at

³ See *Hi-Fi News & Record Review*, June 1989, pp.47–49.

normal listening levels. The exact bass balance will be very room-dependent, however, and it is a tribute to the speaker that they offer such flexibility in LF tuning to best match the room.

To sum up, therefore, the D600 in its "flat" position offers a neutral tonal balance with just a touch of nasality occasionally apparent, with musical but rather depressed extreme highs offset by a slight degree of, if not quite "fizz," a narrow-band emphasis somewhere in the top octave, an occasional degree of hardness in the upper mids, and an impressive degree of low-bass extension, provided the speaker is not asked to deliver spls higher than 100dB or so. Stereo imaging is superbly precise laterally, but despite its quite stunning retrieval of recorded detail and ambience, the illusion of reproduced image depth doesn't quite match the level of attainment reached elsewhere by this design. Overall, this is a sound worthy of recommendation in Class B of *Stereophile's* "Recommended Components" listing.

Digital comparisons

To assess the intrinsic performance of the D600's integral DACs, I carried out a series of comparisons with other familiar D/A decoders. The first, and most obvious, was to compare the sound of the D600s when fed a digital datastream by the 207 CD player with that produced by the 207 when using *its* integral DACs to provide the D600s with an analog signal (via 1m lengths of Monster M-1000). Levels were matched at 1kHz (as they were for all direct comparisons), and A/B switching⁴ could be implemented by toggling the remote control between "CD" and "Radio." (The only practical drawback to this is that when the speakers are set to their analog inputs, the remote cannot be used to control the CD functions.)

I must say that differences were small. Hardly surprising, considering that the same digital filter/DAC combination is used in both products and that the analog design is from the pen of the same engineer. However, the D600 handling a digital input gave a more delicate sound

⁴ As the switchover takes about 2–3s, this is not quite instantaneous. More disturbingly, when selecting an analog source after CD, the music can still be heard playing at reduced level during switchover. Worried that this was crosstalk into the analog input from the DAC output, or vice versa, I decoded the data representing a 0dB 1kHz tone with the D600 DACs while listening to the analog input at full system gain, then played the 0dB 1kHz tone in the analog input while listening to a silent CD track via the speaker's CD input. In both cases the result was nothing—a false alarm!

overall, with less treble grain, than the 207's analog outputs. I felt the 207 slightly emphasized vocal sibilants; it also had a warmer balance overall, which muddied up the sounds of tenor instruments such as the cello. The soundstage appeared to be more spacious via the D600 DACs.

The second comparison was to set up the British Fidelity Digilog and feed it the digital output from the 207 via coaxial cable. The Digilog was connected to the Analog AI+ inputs of the D600s with 1m lengths of Monster Cable M1000, so my description of the sound quality will also include a contribution from the interconnect as well as the effect of the RF coaxial cable carrying the digital signal. A/B comparisons were now a little more cumbersome, due to the fact that the digital cable had to be changed each time, as well as changing the source with the D600 handset.

Now there was considerably more difference to be heard, the Digilog having a distinctly different tonal signature. Again it had a warmer balance, but the main distinguishing characteristic of the D600 referred to the Digilog was a lighter, more delicate treble. The Digilog appeared to have less good midrange definition and less extended highs, though, as might be expected, the treble response measured identical to the D600's. Conversely, on some recordings, the D600 sounded rather brittle in the treble. Though the D600 excelled at presenting the ambient information on recordings—the individual echoes on the Tony Faulkner—engineered Hyperion recording of music by Sir Hubert Parry for choir and organ (CDA66273) could be clearly differentiated—the Digilog presented the music with an overall more distant perspective, almost as if it had less upper-midrange energy. This helped such midrange-aggressive recordings as *Sbowdown* from blues axemen Albert Collins, Robert Cray, and Johnny Copeland (Alligator ALCD4743). Copeland's guitar in particular is head-splittingly bright via the D600s—it sounds like piece of garbage—and the slight softening/distancing offered by the Digilog could only be an improvement here.

The Digilog also had a fatter midbass that rendered such modern classics as Thomas Dolby's *Aliens Ate My Buick*⁵ (EMI-Manhattan

⁵ Lewis and Lynne-Jane Lipnick took me to task at the recent *Stereophile* reviewers' conference over my advocacy of this recording. "It's horrible!" I think was their succinct summing up of its musical and sonic merits. I remain unashamed. For

CDP) more viscerally satisfying than via the D600s alone. But the D600 DAC, while being less forging of clumsily engineered recordings, is more subtle and spacious.

Finally, to put things into context, I substituted for the Digilog the \$4000 Sony DAS-RI decoder that had acted for a while as my reference digital sound source earlier this year. Again it drove the D600s via 1m lengths of Monster M-1000.

No contest, I'm afraid. The big Sony both equaled the D600's sense of space—the choir sounded less homogeneous and more like a collection of individual voices on the Hyperion Parry recording—and rendered such sonic trash as the Alligator blues recording musically acceptable. Copeland's guitar still sounded plebian, but at least its sound could now be easily distinguished from the more aristocratic Fender Stratocaster played by Mr. Cray. The Sony also bested the Digilog in the weight and definition of its bass registers. This is the processor of choice for listening to Mr. Dolby's *Aliens*. . . waxing, er, polycarbonating.

But, hey, I could quite happily live with any of the sounds of these processors, the '600 most definitely being a classy loudspeaker, and incredibly convenient to use.

Measurement

Looking first at the D600's response on the tweeter axis to a 25 μ s rectangular pulse (fig.1, plotted over a 5ms window and slightly offset from the DC line to show its full shape), this can be seen to be overlaid with a high degree of ultrasonic ringing, due to the metal-dome tweeter's primary "oil-can" resonance being excited by the wide-bandwidth test signal. Of very high Q or "quality factor," this resonance is still ringing more than 2ms after the stimulus has been and gone, but whether it will produce audible effects downband on music signal is open to question. Certainly with CD replay, the band-limited nature of the analog signal will prevent this resonance's excitation unless the player itself produces a significant level of spurious at exactly the same frequency. The non-time-coherent nature of the speaker's

crossover and construction can be seen in the lazy manner in which the lower-frequency content of the impulse decays. (Look at the impulse response of the Thiel CSI.2, which utilizes a similar tweeter, elsewhere in this issue to see how a more time-aligned design reproduces the same rectangular pulse.)

Performing a Fast Fourier Transform calculation on the impulse response data gives the effective anechoic frequency response of the speaker on the same axis. To get an idea of the speaker's forward response characteristic and to eliminate the spurious effects of specific cancellations and reinforcements which will be peculiar to any one microphone position, I calculate five such FFT responses from impulse responses taken over a $\pm 15^\circ$ horizontal window and take the average as being typical of the balance of the direct sound to reach the listener's ear on this particular axis. This response for the D600, taken with all the tone controls set to "flat" and plotted with 200Hz resolution from 400Hz to 30kHz, can be seen in fig.2. The response is reasonably smooth,

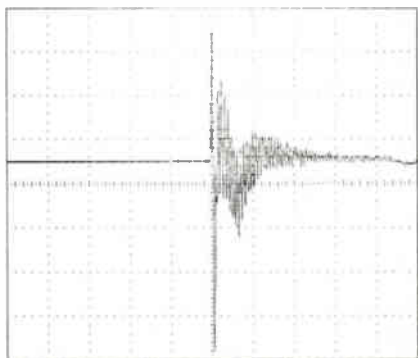


Fig.1 Meridian D600, impulse response (5ms window)

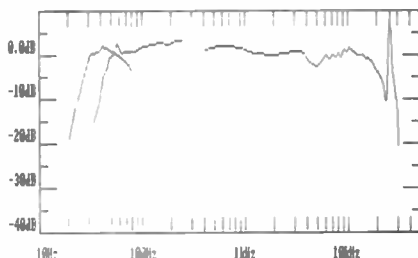


Fig.2 Meridian D600, FFT anechoic response, averaged across 30° lateral window, plus nearfield LF response

me it defines where rock music stands at the end of the '80s in the intelligence of its lyrics, the skill of the musicians, the complexity of its mix, the spaciousness of its soundstage, the awesome and monstrous power of its bass, and the rip-your-head-open quality of its highs. My thanks are due to Krell's Dangerous Dan D'Agostino for turning me on to it at the 1988 Summer CES.

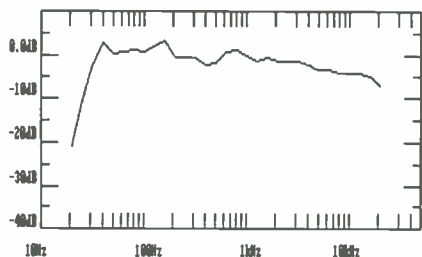


Fig.3 Meridian D600, $\frac{1}{3}$ -octave, spatially averaged, in-room response

and an overall slight downward trend is overlaid with a degree of boost in the presence region and at 10kHz, with slight suckouts between 4kHz and 6kHz and at 24kHz. (Both suckouts are less evident with the mic exactly on the tweeter axis.) The B&K measuring microphone starts to roll off above 20kHz; nevertheless, a peak 10dB above the midband level can be seen at the tweeter resonance, around 26kHz.

Fig.2 also shows the nearfield response of the lower of the two woofers and of the rear-firing reflex port. The woofer peaks slightly at 50Hz, then rolls out rapidly, being 6dB down at 45Hz with the port handling the bulk of the output between 30Hz and 50Hz. The port itself appears to be -6dB at 28Hz. Matching the absolute levels of these different curves for display purposes can only be approximate. I suspect that I have plotted the port output a little too high in level in fig.2, as the spatially averaged in-room response⁶ (fig.3) shows a rather earlier rolloff in the bass, a slight peaking up at 40Hz being followed by a steep rolloff. The curve produced by this measurement, which has proved to correlate quite well with a speaker's subjective balance, shows an overall downward tilt to the D600's in-room sound, relieved by some emphasis in the midrange, centered on the 800Hz $\frac{1}{3}$ -octave band (which might correlate with the "hardness" noted), and in the upper bass at 160Hz. (The depression above that region will be partly due to cancellation between the speaker's direct sound and the first reflection of that sound from the floor between the speaker and the measuring microphone.) Looking at the individual curves taken to derive fig.3 suggests good pair-matching, as well as

reasonably wide dispersion in both horizontal and vertical planes. The D600 is certainly not a "hot-seat" loudspeaker.

Measuring the performance of the digital replay section of the D600 with any degree of confidence presented problems. However, as it uses a conventional premium Philips 16-bit chip set, I expect that its overall departure from linearity will be typical of the genre. (See Robert Harley's measurements on the Arcam Black Box 2 and British Fidelity Digilog in the October issue.) Certainly I was not bothered by any noise problems.⁷

Conclusion

Technically sophisticated, Meridian's D600 was one of the most aesthetically desirable loudspeakers to have spent time in my listening room. It proved capable of delivering high-quality, musically balanced sound with a wide, deep soundstage and an astonishing degree of clarity. It also offers a generous low-frequency performance, considering that the actual driver radiating area is limited, and it will give quite high sound levels, before increasing bass distortion and upper-midrange hardness conspire to have you reach for the volume control.

And what a volume control! I am getting to *love* remote system control—even though a confirmed couch potato such as myself still has to get up from his comfy chair to turn over the LP or post another CD into the 207's gaping maw.

However... *Stereophile's* value judgments must be based on ultimate sound quality, *not* on such trivialities as aesthetic appeal and ease of use. How then does the D600 stand regarding value for money? The easiest way to judge is to carry out a thought experiment—couch potatoes love thought experiments almost as much as they do remote controls—and put together a system from Class B or C separates that does everything a pair of D600s do with a similar overall sound quality. Remote control is mandatory,⁸ so we have to choose between the Hafler Iris (\$800) and the Linn LK1 (\$1160 with remote). (Yes, I would love to choose the fabulous remote-control Counterpoint SA-11 all-tube line section, but its \$5495 price has already burst my budget!) Linn's LK280 power

⁷ Just as I write this conclusion, Murphy strikes. The "Master" speaker has started to emit a low-pitched burp every two minutes or so when turned on but not playing music.

⁸ "Sic semper potatum reclinis," appropriately states the front of the T-shirt I wear while reviewing.

⁶ See October, p. 166-167, for a full description of how this test is performed and why I think it useful.

amplifier (\$1495) works best with the LK1, while the Hafler could be paired with the Adcom GFA-555 (\$700) or Counterpoint SA-12 (\$1195, but soon to be discontinued), the latter being my preference. As the D600s accept a digital input, our separates system also needs a good DAC unit to accept the serial digital datastream from a CD transport. I would say the British Fidelity Digilog (\$995) or Arcam Black Box 2 (\$899) would be acceptable, considering they use the same Philips digital filter/16-bit DAC chip set as the Meridian speakers. And \$35 would need to be put aside for a phono-XLR adaptor lead so the DAC unit could drive the Linn preamplifier. The Linn amplification comes complete with interconnects to join pre- and power amplifier, but the Hafler/Adcom or Hafler/Counterpoint pairings will need good-quality interconnects, \$300 worth of Monster M-1000, for example. Finally, we need to choose a pair of loudspeakers broadly similar in attainment to the D600. My choice would be a pair of Vandersteen 2Ci's, which will add \$1195 to the budget, not counting \$260 for the matching Sound Anchor stands. The Vandersteens go as low in the bass as the Meridians and are unfailingly musical, in this reviewer's opinion. Good speaker cables, of course, will be needed. Fifteen-foot runs of Kimber Kable 8TC will probably be suitable, which, at \$7.80/ft., adds up to another \$234, or \$468 if the speakers are to be bi-wired. Alternatively, you could go for AudioQuest Clear Hyperlitz, at \$50/ft., but at \$3000 for a bi-wired set, that would probably be overkill in this system. Four pairs of Monster X-Terminators add another \$100 to the cost of the

Kimber Kable. I've allowed \$100 for Linn stranded/spaced-pair speaker cable, which comes with good soldered banana plugs.⁹

This gives system totals of \$5315 (British Fidelity/Hafler/Counterpoint/Vandersteen/Sound Anchors/Monster/Kimber) or \$5150 (Arcam/Linn/Vandersteen/Sound Anchors). Of course, you could replace the DAC unit with a complete CD player, such as the \$600 Adcom GCD-575, which will lower the overall system cost by obviating the need for a separate digital source, but even taking this into consideration, a pair of Meridian D600s appears to be reasonably good value at \$5490, particularly as the owner is relieved of all system-matching and compatibility problems, doesn't have to worry about which expensive loudspeaker cables to buy, and gets a set of sensible tone controls to boot.

The D600 is actually a cost-effective and painless way for a CD enthusiast to obtain what is fundamentally a sound appropriate for a Class B ranking in *Stereophile's* "Recommended Components." Add a Meridian 207-Pro CD player/preamplifier at \$1990 (\$2240 with phono board) and a Meridian 204 FM tuner/timer (\$1090), both of which can be controlled by the D600's remote unit, and remember that this system can be the basis of a complete multi-room installation using Meridian's modular units, and you will understand why I think the D600 will turn out to be one of the best-selling loudspeaker systems in the early '90s—even if it *isn't* "digital!" **S**

⁹ Please don't write to ask what dealer would recommend or sell either of these systems. I did say this was a *thought* experiment!

SANSUI AU-X911DG INTEGRATED AMPLIFIER

Larry Greenhill

Solid-state integrated amplifier with one phono input (switchable MC/MM), seven analog line-level inputs (three tape decks, DAT player, CD player, video player, processor), three electrical digital inputs, and one optical digital input. Input impedance: 47k ohms (MM), 100 ohms (MC), 47k ohms (line), and 75 ohms (digital). Phono sensitivity: 2.5mV (MM), 300 μ V (MC), 0.5V (digital). S/N ratio: phono (MM) 86dB, line 110dB. Frequency response: 20Hz–20kHz +0.2dB, (RIAA); 4Hz–20kHz, +0.5dB (digital). Total Harmonic Distortion (THD): 0.003% (digital, at 1kHz). Output power: 100W continuous (20dBW), with no more than 0.02% THD. IM distortion (60Hz/7kHz in a 4:1 ratio, SMPTE method): 0.02% at rated power. Polarity: non-inverting. Dimensions: 16 $\frac{1}{8}$ " (430mm) W by 6 $\frac{1}{8}$ " (163mm) H by 17 $\frac{3}{4}$ " (450mm) D. Weight: 40.1 lbs (18.2kg) net. Price: \$1250. Approximate



Sansui AU-X911DG integrated amplifier

number of dealers: 60. Distributor: Sansui Electronics Corporation, 1250 Valley Brook Avenue, Lyndhurst, NJ 07071. Tel: (201) 460-9710.

For three years or so, Sansui has marketed an expensive "Vintage" line of separates. These products have featured expensive veneers, superb ergonomics, and, in the case of their top-of-the-line amplifiers, superb specifications and test-bench performance! Their new AU-X911DG integrated amplifier continues the "Vintage" tradition, and offers something in addition to its 100Wpc of continuous power, multiplicity of inputs, and remote switching functions: an onboard Digital/Analog Converter (DAC). The unit's high power rating, an optical input, and the built-in DAC quite justify the amp's \$1250 price, which is a significant notch above the \$349-\$795 series of lower-powered British integrated amplifiers reviewed recently in these pages by Robert Harley. Best of all, the sonics from this new integrated amp are so good that I had to review (for the umpteenth time!) my definition of "state-of-the-art" sonics in an audio product.

The heart of the matter: the onboard DAC

Although the AU-X911DG is not the only integrated amp with a built-in DAC, the Sansui DAC appears to use a different approach from other amps in this price range. For example, a number of present-day CD players employ 10- or 20-bit DACs with 4x- or 8x-resampling or oversampling digital filters to reduce distortion (the top-of-the-line Krell converter uses 64x-oversampling!). Decoding 16-bit data using 16-bit DACs involves a network of resistors or current sources that limits the DAC's intrinsic

accuracy, despite the use of laser trimming of components or external trim pots to adjust the most significant bit (MSB) currents. Sansui eliminates the need for costly high-precision reference devices with their LDCS ("Linear and Direct DAC System"), which employs a very high order of oversampling and third-order noise shaping to convert the 16-bit digital input signal into a 1-bit pulse stream of zeros (off) and ones (on).² The original analog signal can then be reconstructed from what is effectively a Pulse Width Modulated (PWM) signal by passing it through a low-order, non-brick-wall type of low-pass filter.

Sansui claims that the LDCS prevents zero-cross distortion, a problem with very-low-input signal levels. The 1-bit DAC circuit does not need to use a deglitcher, which further reduces switching noise and distortion.

The AU-X911DG's onboard DAC has another feature: its lithium-tantalate oscillation system, which couples with the amp's double phase-locked-loop circuitry to provide a very stable clock. The unit locks into the digital data stream coming in via cables and determines the clock frequency to set its own DAC. Sansui believes that the lithium-tantalate components help synchronize the DAC with the incoming signal, and reduce the noise and jitter that lead to conversion errors. The DAC can be compatible with a wide range of digital hardware such as DAT, regardless of whether its sampling fre-

² "Introduction to Sansui's 1-Bit D/A Conversion Technology LDCS." This white paper was distributed at an April, 1989 press conference in New York. While it is quite lucid and well-written, one wonders if this may be another problem which has been "discovered and then solved" by the manufacturer. Whether 1-bit D/A conversion technology explains the AU-X911DG's superb sound, I cannot say.

¹ Though Dick Olsner found their "Vintage" DX-901 CD player to have disappointing sonics in Vol.10 No.8. —JA

quency is 44.1, 32, or 48kHz. The unit actually has an illuminated readout of the input signal's sampling frequency.

Construction

The amplifier's chassis has an extruded aluminum front panel which is attached to steel side panels. Internally, it is built from several U-section channels running from front to back, with various sheet-metal and extruded parts attached. Sizeable heatsinks for each channel are attached parallel to the side panels, and are located internally to promote air flow through the matching slots in the top and bottom external panels. Amplifier circuit boards run parallel to the heat radiators. Output transistors are bolted to the appropriate radiator for each channel. Lots of point-to-point wiring is visible, but lead length is appropriately short.

A large power transformer and two 10,000 μ F filter capacitors occupy the center portion of the amplifier. These capacitors are rated at 85°C, which is more than adequate. Vertically oriented circuit boards are situated behind the front panel, just inside the side panels and on the back panel. Circuit-board component quality is high, with 1% resistors in the preamp section. The unit has high-quality, single-sided, glass-epoxy boards, complete with component designators and solder mask. Many fewer nickel-plated, push-on connectors have been used to connect the circuit boards than in earlier Sansui "Basic Audio Legacy Vintage" designs,³ which is an improvement as far as I'm concerned. All the amp's panels are fastened with pre-threaded screws, tapped holes, and use a plastic insert around the screw head. This level of construction is often found in instrument-grade products.

The front panel's large number of controls gives the amp a great deal of flexibility. Listing them makes the unit sound much more complicated to operate than it actually is. This is due, in part, to the ergonomically successful hand-held remote unit that comes with the amp. Rotary controls on the front panel are, from left to right, Speakers, Bass, Treble, Balance, Master Volume, Source-Direct Operation,

and Record Selector. Square pushbutton switches include Power, Tone (for toggling on or off the tone controls), loudness, Tape Selector Switches (Source, Tape-1/DAT, Tape-2, Tape-3), MM/MC, Processor (for an external crossover or equalizer), Muting, and Subsonic (16Hz high-pass filter with 12dB/octave slope). A bank of eight pushbuttons at the panel's upper right control the amplifier inputs. These switches link to a motor-driven remote switching system near the back panel, in an effort to keep signal leads short. The eight switches are labeled Digital-1, Digital-2, Digital-3, Digital-4 (Optical), Phono, Tuner, Line, and CD (using the DAC in the CD player, not the one in the Sansui).

Setup and operation

Despite the awesome number of control functions, the AU-X911DG does not have an output for its preamp section. What about the Processor outputs? These are similar to the standard tape-outs in that the signal level cannot be controlled from the front panel. I used two test setups for the listening, both of which required an external electronic crossover. The first system employed Quad ESL-63s and a Velodyne ULD-18 subwoofer, which has its own electronic crossover and power amplifier. The lack of a preamp output meant that I had to drive the subwoofer amp from a line out, in turn meaning that the Sansui was pushing a full 1V into the Velodyne. The volume controls on both the Sansui and the Velodyne had to be set separately. (Sometimes the match was accurate, sometimes not.) The second setup involved the latest incarnation of the Snell A-3 (Improved version), which I had biamped with an outboard dB Systems electronic crossover and two separate amplifiers. I switched the Snell back to its nominal non-bi-amped state for the Sansui audition. Sources included a Revox 260-S FM tuner, a Linn/Magnepan/Marovskis MIT turntable, and a Philips 650 CD player.

The unit comes on with something of a light show, as the power-switch indicator light flashes and the transformer buzzes. One can also hear the motor used to switch the inputs, but this is not bothersome unless one is switching rapidly between sources. The protection circuit is very good, cutting on and off while the power-on light bar slowly cycles on and off. I encountered the action of this circuit when I first set up the amplifier. The speaker

³ See the review in *Audio*, Vol.69 No.4, April 1985, titled "Sansui C-2301 Preamp and B-2301 Amp," pp.82-98. David Clark and I did a thorough evaluation of Sansui's separates, which were priced higher than the AU-X911DG. At that time, Sansui used thread-forming screws, which I consider to be less desirable than those used in this newer, less expensive integrated amp.

terminals are so large that the connectors touched (definitely not the American 5-way standard connector!), shorting the amplifier. The X-Terminator banana pins only just fit, and must have forced the body of the Monster Cable fitting to press against the body of the amp, shutting down the sound right in the middle of a huge passage on side 3 of the 45rpm Reference Recording of Berlioz's *Symphonie Fantastique* (Reference Recording RR-11)! I had to pull off the Monster X-Terminators that I love and use the lugs at the end of the cables instead. The huge screws on the Sansui's terminals do allow for a tight fit, however.

Next I listened to the CD inputs. Moving the Source Direct Operation rotary control, I noticed a change in the volume. The Direct setting was not as loud as the source, even though the signal was arriving at the integrated amp as digital. What was going on? Page 17 of the instruction booklet explains that with the Source setting, much of the integrated amp is bypassed. With the switch set to Source, the balance control and subsonic and muting switches do not work, and any external signal processor will be out of the circuit. This meant that the high-passed signal from the Velodyne crossover was being ignored, and the Quads were getting the full-range signal. I chose to use the Digital Direct, which allowed the incoming digital signal to be processed, and the processor loop to include the Velodyne subwoofer.

The sound

I carried out a number of listening comparisons during the audition of the Sansui AU-X911DG due to the large range of options this product presents. I compared analog *vs* the digital input signal from my CD player; moving-coils *vs* moving-magnets; driving the Quads full-range *vs* the bi-amplified option with the 18" Velodyne subwoofer.

Comparing the Philips's internal 16-bit DAC with the Sansui's 1-bit circuit provided the most dramatic sonic difference. With the Sansui, much of the Philips's midrange harshness I had grown accustomed to was eliminated, and the sound was much smoother and less hashy. Imaging improved dramatically, and a number of the CDs evinced enhanced soundstage depth and width. Punch, speed, and detailing increased, and listening became a joy! I found it difficult to go back to my standard system. But being an integrated amplifier, I was

unable to decide whether this CD "break-through" could be attributed to the DAC alone, but was in fact the result of a synergism of Sansui preamplifier, amplifier, and DAC.

I tried two cartridges into the Sansui's pre-amp section. The moving-magnet Shure V-15 Type V-MR did surprisingly well. It tends to be an accurate, beautifully tracking cartridge that is analytic but not especially dynamic or exciting when played through my normal preamp (Levinson ML-7A). My, the Sansui gave it a shot in the arm! The sound became spacious, fast, dynamic, full, and rich. In many ways, the Shure/Sansui/Quad ESL-63 system reminded me a little of an IRS Beta system's silvery, transparent midrange, particularly when teamed with Carver's Silver Seven amplifier. While I don't mean to suggest that the Sansui/Quad/Velodyne combination equals the Infinity/Carver, it does remind me of this sound. It was so good that I began to suspect some frequency anomalies in the lower midrange of the AU-X911DG's RIAA compensation curve, but, knowing Sansui, the equalization curve is probably dead flat.

I began my auditioning with the Sheffield direct-to-vinyl LP of Prokofiev's *Romeo and Juliet*. The Sansui AU-X911DG proved to be very revealing, particularly of record surface problems. It also showed a considerable dynamic range, especially for the Shure V-15 Type V-MR cartridge, which has a tendency to be restricted in this region. I moved on to a recording of Bach's Trio Sonata in C, played on the organ of the Presbyterian Church, Rye, New York, by John Sansell (Classic Masters CBS 1003). The ambience of the church was absolutely wonderful. The Velodyne subwoofer teamed up with the Quads to produce a wide-open, spacious sound.

Record after record was dragged out, auditioned, and enjoyed. For example, Fleetwood Mac's "Sisters of the Moon," from *Tusk*, played with a pounding, fast, driving quality. I became aware, for the first time, that Fleetwood had miked the percussion up front, and brought Stevie Nicks's vocals in slowly, panning the volume up, which made it seem as if she were miked far away, then rushed up front.⁴ *Grace-*

⁴ This description of Stevie Nicks's voice moving from the rear of the soundstage to the front was probably achieved by having the recording console's reverb send in the "pre-fade" position, keeping the amount of reverb constant regardless of fader position. As the fader is brought up, the ratio of reverberant

land, one of Paul Simon's best recordings, was reproduced with just the right amount of "wetness" or reverb for his voice. On the other hand, all elements of the chorus and guitar had been recorded up-front and dry. This was very evident on "Diamonds on the Soles of her Shoes": The opening chorus was just lovely, with lots of depth and reverb, Simon in the foreground, with all the voices resolved. The Quads were quick and fast, and the Velodyne had the appropriate degree of punch.

I even unearthed my full-sized 45rpm records. I must have been inspired, for changing the speed meant stopping everything and changing the belt on my Linn turntable! I played *The Tempest*, a Reference Recording (RR-11) featuring highlights from Paul Sieko's ballet and Keith Johnson's recording skills. The ambience, depth, and stability of image were very much improved over that heard through my Levinson/Threshold system.

The tuner also sounded more alive through the Sansui. The sound, particularly of orchestral music, was more forward, more dynamic, more exciting. I believe a part of that was due to two new additions to the system this year—Arcici stands for the Quads and the Velodyne ULD-18—but clearly Sansui's amp helped.

The Sansui's rated power is just right for the Quads. I haven't had so much fun with the sonics in a long time. The mix of Quad/Velodyne/Sansui had a great deal of speed, zip, and punch. The bass transient speed and detailing were absolutely tops, easily equaling anything I have heard in my system. This was particularly true for such synthesizer music as the Nonesuch Records release of Morton Subotnick's *The Wild Bull* (H-71208).⁵ It was evident also on a more recent release, *James Newton Howard & Friends* (Sheffield Lab CD-23). (This CD emanates from the same rock synthesizer, drums, and percussion group that created Sheffield's wonderful *Track Record*.) I went into a "total goosebump syndrome" when I put on Newton's "Slippin' Away II"; the soundfield was so big, so fast, I felt like jumping up and boogeying. I was bowled over by the detail and new information coming through.

The most important addition made by the Sansui was center imaging. Throwing on vocal

music revealed that the Quads could create a palpable, sonically three-dimensional image with the Sansui. I heard this best on "Bridge Over Troubled Waters," from Willie Nelson's *Always on My Mind* CD. I tried the Sansui on a full-range dynamic system, the Snell Type III-A, improved. Plenty of power was available, for bass drum blasts (Wilson *Winds of War and Peace*, "Liberty Fanfare") or for synthesizer rock (*Newton and Friends*, "Shufflin' Away"). The top of the chassis got quite warm. Clipping was evident in a "snap" on the peaks, but there was no static, degradation of sound, or objectionable clipping behavior. The wonderful imaging heard on the Quads also occurred on the Snells, improved over my much more expensive Levinson/Threshold system. Although the 1-bit DAC in the integrated amplifier only handles source signals in digital format, the Snell's improved center imaging and depth heard on CDs was heard from vinyl records as well, especially on the Rye organ record.

Not all the source material did well, however. The wonderful Vanguard recording of the Weavers' 1963 Carnegie Hall Reunion ("Guantanamo") was a bit thin, and the usual spread of performers across my listening-room wall did not occur. David Wilson's new CD, *Winds of War and Peace*, which begins with the "Liberty Fanfare," was thin, and did not have the profound bass impact heard with my Levinson ML-7A (this preamp alone retails for almost three times the Sansui's price!). The Marovskis MIT-1 moving-coil cartridge, which has a van den Hul stylus, did not sound as vibrant as the Shure cartridge, suggesting perhaps some anomalies in the Sansui's MC circuitry. Bass response was reduced, dynamics were dimmed, and the sound became colored and dull. I ran the same cartridge through my Audio Standards MX-10 head amp, and reset the Sansui for moving-magnet. The sound opened up, sounding richer and more spacious. I would suspect that the cartridge-loading impedance on the Sansui is a bit low, as the Marovskis favors a highish impedance, like the Levinson ML-7a's 825 ohms.

Conclusion

The Sansui AU-X911DG gets my vote for the best entry-level set of electronics under \$1500.⁶

to dry signal decreases, giving the illusion of the image moving forward in the soundstage. —RH

⁵ I thought I was the only person in the world to have this recording. —JA

⁶ In view of LG's advocacy, I feel it fair that we submit this Sansui to "Follow-up" scrutiny. For if it is as good as he says, we should promote it widely. Stay tuned. —JA

For \$1250 list, one gets a very good remote-control integrated amplifier, with an outstanding integral DAC. The central imaging of the sound, the spaciousness of the soundstage, and the amp's punch and transparency make it clearly the best power amplifier I've yet heard under \$2000, much less an entire preamp, amplifier, and DAC. The only drawback in my opinion is the Sansui lack of preamp outputs. The Sansui's grainless midrange comes surprisingly close to the performance of the Levinson No.20 driving the Snell A-3s, lacking only the Madrigal/Levinson's unusual deep-bass performance. Well done, Sansui!

Postscript: measured performance

After reading Larry Greenhill's review of the Sansui AU-X911DG, I was eager to see how it performed on the bench. My first test sample—the sample that LG actually listened to—blew a fuse with terminal consequences during the preconditioning period of one hour at $\frac{1}{3}$ rated power. The second sample survived, however, allowing me to proceed with the bench tests.

The AU-X911DG delivered 0.7dB more than its rated power into 8 ohms, clipping at 117.4W (20.7dBW). Into 4 ohms, it delivered just 150.5W (18.8dBW). This modest rise in output power into 4 ohms is indicative of a less than state-of-the-art power supply. Typically, amplifiers with the ability to substantially increase their output power into low impedances have subjectively better low-frequency performances. The AU-X911DG output impedance was typical of a modern solid-state amplifier at 0.1 ohm.

Frequency response at 1W into 8 ohms (CD input to speaker terminals) is shown in fig. 1. The volume-control error, shown by the lower level of the right (dotted trace) channel, gradually decreased as power output increased. Above 75W, the error was minimal. The effect of adding 2.2 μ F of capacitance in parallel with the load resistor is shown in fig. 2. Adding the capacitor approximates the load presented by many loudspeakers, especially the older Quad ESL. Interestingly, the right channel's rise was 0.8dB at 20kHz, while the left channel's rise was 0.4dB at 20kHz. Even though the right channel's output was lower (due to volume-control inaccuracy), both channels' outputs were nearly equal at 20kHz. LG did mention

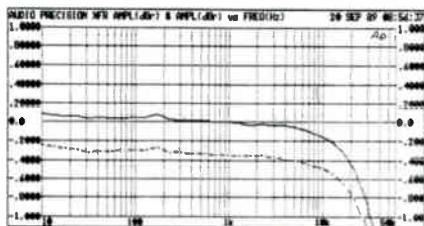


Fig.1 Sansui, response at 1W into 8 ohms

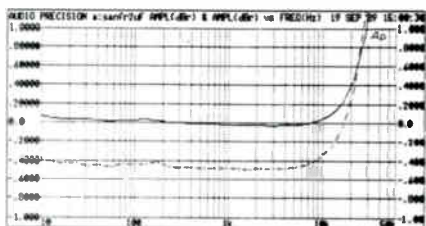


Fig.2 Sansui, response at 1W into 8 ohms in parallel with 2.2 μ F

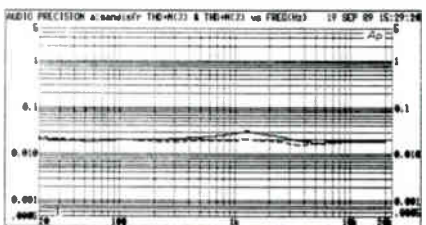


Fig.3 Sansui, THD+noise at 100W into 8 ohms

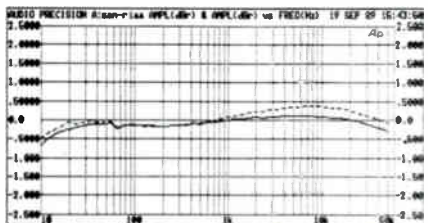


Fig.4 Sansui, RIAA error, output from tape outputs (RH channel dotted)

that the sound of the Sansui driving the Quads had "zip." Fig.3 shows THD and Noise as a function of frequency at rated output (100W), meeting the published specification of less than 0.02%.

Moving to the phono section, RIAA equalization accuracy was reasonably flat. The right channel, shown as the dotted trace in fig.4, had a greater error than the left above 1kHz. Phono overload at 1kHz was 200mV.

The AU-X911DG's digital-to-analog con-

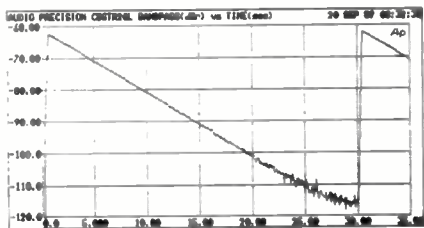


Fig.5 Sansui, fade to noise with dither (left channel)

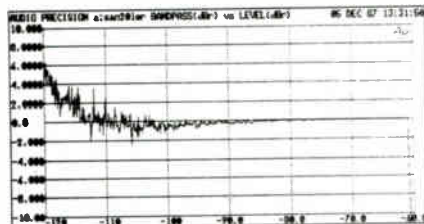


Fig.6 Sansui, linearity error (left channel)

verter showed some real surprises. Converter linearity was exceptionally accurate, among the best I have measured. Fig.5 shows the trace made from the "fade to noise with dither" track on the CBS test disc. It is very nearly a perfect straight line. Using the data from this track to calculate deviation from perfect linearity yields the trace in fig.6. Again, this is excellent performance.

Deemphasis error (fig.7) was negligible,

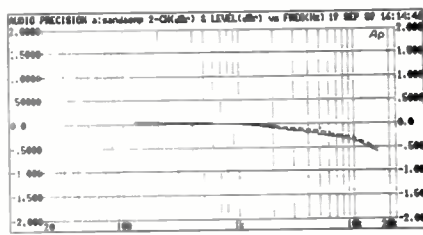


Fig.7 Sansui, de-emphasis error (RH channel dotted)

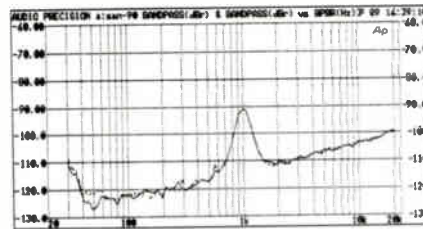


Fig.8 Sansui, -90dB dithered 1kHz tone with spurious and noise

being 0.5dB down at 16kHz. The noise spectrum present at the output when playing a dithered 1kHz signal at -90dB is shown in fig.8. This test reveals the presence of spurious and power-supply-related problems. The AU-X911DG performed well, with a low level of artifacts associated with the 1kHz tone. In addition, the linearity of the DAC can be seen by the 1kHz peak just reaching the -90dB horizontal division.

—Robert Harley

TERA 621C VIDEO MONITOR/RECEIVER

J. Gordon Holt

20" (diagonal) video receiver/monitor with infrared remote. Inputs: VHF 75 ohms; UHF 300 ohms; Video 1, 2, 3 (RCA jack, 75 ohms). Front panel controls: Master AC, Vertical Hold, Function Select, Function Adjust, Function Reset, Color-Noise Reduction On/Off, MTS On/Off, Display On/Off, channel memory Add/Erase, Manual-Fine-Tuning adjust, MFT/AFT select, RGB/Normal, Video-Noise-Reduction On/Off, 3.58 Trap On/Off, Channel Up/Down, Volume Up/Down, Antenna/Aux, TV/Video 1-4. Controls on remote: all of the above except Channel Memory, plus: Headphone, Speaker, Muting, CNR, Revert, Reset, Sleep. Specs: Manual fine tuning ± 2.2 MHz. Outputs: 10Wpc or audio line, video. Overscan 5%. DC restoration: 95%. Brightness: 800+ lux. Color temperature: 9300K. Horizontal resolution: 560 lines. Dimensions: 21 $\frac{1}{2}$ " W by 20 $\frac{1}{2}$ " H by 19 $\frac{1}{2}$ " D. Weight: 62 lbs. Price: \$1250. Approximate number of dealers: 150. Manufacturer: Tera Electronics, Inc., 89 Doug Brown Way, Holliston, MA 01746. Tel: (508) 429-7760.

Even though video-related articles are a very rare occurrence in these hallowed pages, they invariably elicit letters expressing outrage that we would so "waste" the space that could be better devoted to yet another report on another

overpriced and eminently forgettable loud-speaker! (How many products, favorably

¹ It will strike some readers as ironic that, so soon after the appearance of my comments concerning the demise of *High*



The Tera 629, which looks just like the 621c TV monitor/receiver

reviewed in these pages, ever get mentioned again?) Interestingly though, most of the vitriol in those letters seems to be aimed at TV, as though TV and video are synonymous. They aren't, exactly.

Strictly speaking, video is any picture you look at on a cathode-ray tube. It does not include oscilloscope displays, but it *does* include TV. But when people who are "into" video speak of video, they are not talking about TV. They are talking about anything you watch on a CRT that *isn't* from commercially broadcast TV. Video comes instead from a VCR, a laserdisc video player, or any other source that can be watched without commercial interrup-

tions. It can include home "movies" shot with a camcorder, how-to instructional tapes, and workout tapes featuring lean, svelte, 45-year-old women who give the impression that any fat, sweaty blimp with thighs like bolsters can look just like them with only a modicum of perseverance. But none of these is really what video in America is about. What it's *really* about is *movies*.

Although estimates vary slightly, industry experts generally agree that about 95% of video viewing in the US is of commercial films, mostly of the Hollywood variety. And judging from many conversations with serious audiophiles, in and out of the business, I would also estimate that at least 50% of them watch movies from a video screen, and many of those are as picky about picture quality as they are about sound. They are called videophiles. (Many of the highly respected designers of high-end audio products are closet videophiles.)

The most significant difference between the

Fidelity being somewhat related to that magazine's coverage of video products (Vol.12 No.8, p.41), *Stereophile* should publish a report on a *video* product. Those who know J. Gordon Holt well, however, will be aware of his longstanding passion for things televisual and should not be surprised, therefore, to see that his first equipment review to appear in the magazine for many months concerns one of the new breed of direct-view monitors. Welcome back, Gordon, and rest assured, dear readers, that this review does *not* displace coverage of audio products, even of any of those "overpriced and eminently forgettable loudspeakers." —JA

ordinary audiophile who buys a rack system and the so-called high-end audiophile who buys the stuff we review in these pages is that the former has never even considered the possibility that reproduced music can sound similar to "the real thing." He doesn't notice the difference between what he hears at a concert and what he hears at home because it has never occurred to him to compare them. The same is true of most video viewers, including a lot of our readers. This is why, after nitpicking their audio system for an hour, they can contentedly watch a "color" TV picture comprised of an infinite palette of purples. But just show one of these people a video display in which the picture actually resembles what he saw last month in a movie theater, and you may well convert him to videophilia.

As a hobby, perfectionist video is exactly like high-end audio except that it involves different program material and a different pair of sensory receptors. In video, the program is a film, the reference standard is a good theatrical presentation of it, and the ultimate arbiter of quality is the eye rather than the ear. The two fields have another thing in common: They are open-ended. Because perfection is (probably) impossible, the pursuit of it can become a lifelong quest. But the thing that makes perfectionist video particularly rewarding for those who have succumbed is that so much of it is so unbelievably bad. Technologically, video is much more primitive than audio was in 1957, before stereo.

American TV, in black and white, has been around since 1939, and the last significant improvement—color—happened in 1954. Since then, there has not been a single *quantitative* improvement in the technology. Even qualitative improvements—what we call evolutionary advances—were virtually nonexistent until very recently. Receiver manufacturers assumed everyone was happy with the picture, and concentrated on making color sets more idiot-proof. Now, after 35 years of stasis, designers are starting to look for ways of improving picture quality—sharpness, color fidelity, detail, freedom from visual noise—and some consumers, sensing which way the wind is blowing, are starting to demand even more improvements.

If you are one of those people who feel that digital audio is frozen into mediocrity by inadequate 1980 standards for sampling rate and/or

bit availability, imagine what a set of equally immutable 1930s standards is doing to our nation's video. Its 6MHz bandwidth, originally felt to be quite adequate for acceptable picture detail, became the basis for today's broadcast-TV channel allocations in the US, thus institutionalizing itself by virtue of today's hundreds of millions of receivers that would be made instantly obsolete by a wider-band system. With truly high-definition TV (HDTV) on the horizon, and calling for 14MHz bandwidth, the Federal Communications Commission recently reaffirmed the old standard, telling the industry, in effect, that it can have its HDTV if it can find a way of getting the requisite 14MHz bandwidth into a 6MHz bag.

That has not necessarily quashed all prospects of improving our present system, though. In fact, a major force behind the recent flurry of activity in video has been a growing realization on the part of consumers that the equipment hasn't even been approaching its own performance potential. (The fact that some manufacturers are taking steps to remedy this is why some audiophiles are heard complaining that there's more going on in video these days than in audio.)

The product which has seen the most dramatic improvement in recent years is the monitor/receiver, basically just like the old-fashioned TV except that it also has a non-RF "video" input. (Earlier TV sets were like table radios; they could receive stations, but there were no inputs for local non-broadcast signal sources.) All domestic VCRs and laserdisc players have two outputs: the RF, for feeding to a TV set's antenna terminals, and the Video, which permits bypassing the RF processing when feeding a "monitor." The direct video connection invariably yields a better signal. (Remember the audiophile's dictum: "Less circuitry is always better"? It applies to video, too.) Which brings us to Tera's monitor/receiver.

At a time when most 20" sets are priced at around \$600, Tera offers the 621C for a cool \$1250, which makes it the most expensive 20" consumer model on the market. Now that's high-end video! Or should be.

In keeping with the true spirit of the high end, the first sample of the 621C that I received malfunctioned. The tuner was inoperative right out of the box. Or, rather, out of the trunk: the Tera people drove it out to Boulder after the Chicago CES, where (I was told) it had per-

formed flawlessly. The second sample, delivered by a freight company, also appeared at first to have some problems. Low-band TV channels had a series of diagonal white lines moving slowly through them, and one audio channel was dead—through all left-channel outputs including the headphones. The picture interference subsequently turned out to be the fault of an interconnect cable, although why the same cable did not cause interference with my cheap JVC receiver is still a puzzle. It was not because of the Tera's superior resolution, because the interference lines were still clearly visible with the Tera's sharpness control turned all the way down, while they were not visible at all on the JVC with its turned all the way up.

The set was checked out by a Tera service center in Denver, which declared the audio to be okay. But when returned to me by the local rep, the left channel was still dead (or, perhaps, it was dead again, after having temporarily cured itself). Trouble-shooting in my home failed to turn up a cause for the malfunction, but it suddenly cured itself and I was unable to get it to recur. At this point, I can only guess it was the result of a bad soldered connection, but it has not recurred since then.

This is hardly reason enough to suspect a reliability problem with Tera's sets, but at 65 lbs weight, taking a sick 621C back to your friendly dealer is not as easy as returning the typical 30-pounder, and the high price you paid for it will only add insult to potential back injury. My suggestion: If you opt for a Tera, have the dealer check it out before you drive off with it. Or, better still, have him deliver it and set it up and make sure everything is in order before he leaves. For \$1250, you can expect more dealer service than just loading a box into your trunk.

Besides the usual antenna (RF) inputs, the Tera also accepts up to 3 sets of A/V inputs or (allegedly) an RGB source, although there is no mention anywhere of how to connect the latter. Line outputs at the rear include one audio pair that are controlled by the Tera's volume control, and a fixed-level pair. The fixed audio outputs and Video 3 inputs are duplicated on the front panel, so you can connect your VCR to the Tera without fumbling around behind it. And you can record from its tuner while watching a different program coming in through a video input.

Although there is a built-in low-powered

amplifier, there are no built-in loudspeakers. Instead, a pair of small outboarders clip on to the sides of the cabinet and connect to the main outputs via supplied wires. Stereo is minimal this way, and is only channel-balanced for the person sitting square-on to the set, but the wires are long enough that you can space the speakers wider if you have enough table space.

The remote control duplicates most of the front-panel functions and adds channel callout-by-number. It also has a very clever feature that, to my knowledge, is exclusive with Tera: two-way communications. Besides the usual infrared receiver, the monitor also has a two-channel infrared transmitter which broadcasts to the remote unit. With the (supplied) stereo headphones plugged into the remote unit, you can hear the audio coming from the monitor. The sound isn't tremendous (rather dull at the top), but at least it's clean, the low end is remarkably good, and viewers who don't have surround speakers will be surprised to find that headphone listening does a passable job of decoding-out the rear information. Unfortunately, that outstanding low end becomes a liability whenever you operate the remote, because it (apparently) responds to a bounceback signal from the face of the monitor and converts the control pulses into a series of very loud thuds.

I found the action of the Tera's controls rather irritating in other ways. Most of the user adjustments—bass, treble, channel balance, brightness, detail, color, hue—are accessed sequentially by pressing a Select button, but you can't reverse the sequence. If you happen to cycle past Detail, for example, you must continue to cycle forward until Detail comes around again. I was also continually annoyed by the fact that, when you select a function, the legend showing what it is and where it is set often appears right near the center of the screen, obscuring what is going on until it automatically winks out, about 5 seconds after you stop adjusting it. Why couldn't these appear at the top or bottom of the picture, as with some Sony sets? In addition, many change functions—Mute/Unmute, Channel Up/Down—cause the sound to mute (which is okay), and it takes more than a second to come on again (not so okay). I could get used to this, but it's a bit of an irk.

Audio quality through the Tera's circuitry is respectable, but in comparison with the input

signal it is perceptibly soft and somewhat warm, rather like a good but imperfect tube preamp. (The Fixed outputs have the same qualities, but less so.) Those who insist on the least compromised sound will elect to bypass the Tera's audio section entirely whenever they can. The small speakers supplied are adequate for reproducing speech, but not much more. They are not designed to handle heavy bass, which means it is inadvisable to use the bass tone control to flesh out their somewhat thin low end. (Even so, one of the Tera's speakers that I used for a while started rattling on certain lower-mid tones after a few hours.)

I was unable to do a reliable assessment of the 621C tuner's separation, because Boulder's cable service never converted to stereo, and I don't (yet) have a really good antenna set up for local reception. On stereo broadcasts, though, separation seemed disappointingly poor, at an estimated 10dB or so. It must be said that most MTS (multi-channel television sound) receivers have abysmally poor separation, in comparison with the 40+dB of most FM tuners, so the Tera is by no means unusual in that respect. But I expected better from a set with the Tera's quality aspirations. (Interestingly, stereo separation is the only important item missing from Tera's otherwise detailed specification list.)

An unusual feature of the Tera is its switchable manual-fine-tuning. The set's AFT (automatic, etc.) works fine for most program sources, but there are times—as when an adjacent channel interferes with the one you're trying to get—when it is a help to be able to shift slightly to one side of dead-center tuning. There are also rare instances when a small amount of color phase shift (which puts a greenish edge at the left of a bright red) can be corrected by slightly fudging the fine tuning.

But what about the video quality, which is (presumably) what justifies the Tera's unusually high price? Certainly, its specs are impressive enough, and it has none of the automatic picture-adjust features which are supposed to make mass-consumer sets as idiot-proof as possible. (The worst of these are those awful "auto-tint" circuits that grab hold of anything vaguely resembling a flesh tone and make it a flesh tone, whether or not it is *supposed* to be flesh tone.) There's a lot of sophisticated signal processing in the Tera, but all of it is dedicated to improving picture quality under a wide range of signal-input conditions. Here's

rundown of the Tera's image-processing features:

Double Differential Contour Compensation: Unlike velocity modulation, available in some other Tera monitors, which actually increases the on-screen resolution of small picture details, DDCC increases the *apparent* sharpness of the image without increasing the resolution of fine details. What it does is look for very abrupt changes in brightness level, which represent object outlines on the screen, and then *increase* the rate of these changes. The result is a picture that *looks* crisper than detail-resolution alone would allow it to.

Dynamic Aperture Compensation: Another means of increasing apparent detail without actually improving it, this extracts the video treble content and expands it (like an audio volume expander) downward, so its peaks remain at their original level while its troughs are closer toward black. The effect of DAC is more noticeable in high-detail areas than at the edges of large, uniformly shaded areas.

Black-Level Extension: In most monitors, black level—the point where all three electron guns cut off completely—tends to "float" up and down according to the brightness range of the picture. In brightly lit scenes with deep shadows, shadow areas are pushed 'way below the cutoff point, taking a lot of detail with them. In night scenes, areas that should be black float up to a medium gray. You can correct for either condition with the contrast and brightness controls, but the correct setting for one scene will be completely wrong for the other. With good black-level retention, picture blacks are anchored to a fixed reference point, so that brightness and contrast adjustments stay put regardless of picture content (except when mist or fog scenes demand an overall gray). Tera claims (and appears to achieve) 95% BLR, which is *very* good.

The effect of this, among others, is that you can go from a sunlit scene with deep black shadows to a night sky with stars, and have blacks appear black in both.

Video Nonlinear Compensation: Although a video display is capable of reproducing a full range of brightness from white to dead black, various factors conspire to obscure many of the details that would otherwise be visible in dark (shadow) areas of the picture. Tera addresses this by expanding the dark end of the

brightness scale so that grays darken to black much more slowly than they normally would. (To compensate, the upper brightness range is compressed accordingly.) The result is a non-linear gray scale—definitely a form of distortion, but unless you are accustomed to viewing in a darkened room, the effect is beneficial rather than otherwise, for you see a widened gamut of grays.

For the purist, who usually *does* watch in very subdued lighting, the result may be more shadow detail than he cares to see, often revealing special-effects artifacts which would have looked quite realistic with a normal dark-gray scale.

Video Noise Reduction: This works by taking advantage of the fact that very small changes in picture brightness due to signal detail information are much less visible than those due to extraneous noise. Such very small changes in the video high frequencies are filtered out when the VNR is switched On. I found, however, that the softening effect on image detail was much worse than implied by the instructions, and that the Detail control could not begin to correct for it. Tera's VNR should be used only for intolerably bad program material, if at all. (I felt the Detail control did a better job of controlling luminance noise.)

Color Noise Reduction: This works in much the same way as the VNR, but because color information has a much narrower bandwidth than the luminance (B&W) signal, a modicum of additional color-detail loss is less detrimental to picture quality. This CNR works acceptably well, causing appreciable detail loss in areas of uniform color but virtually none at object outlines. On the other hand, it often doesn't seem to "take hold" fast enough, with the result that picture noise persists in small areas to the immediate right of sharp brightness transitions. (These areas of noise look like digital sparklies, but they aren't; Tera's CNR involves no digital processing.) Incidentally, switching the CNR on appears to shift the color information to the right, but this is an optical illusion—a result of the transition from sharp-looking color noise to smeared-to-the-right color-without-noise. However, the smear does not cause any color bleeding beyond object outlines.

Colorimetry: Here we come to my only strong reservation about the Tera. The industry standard for a video-picture "white" specifies

a so-called color temperature of 6500° Kelvin, which is the color of light from the sun plus a clear blue sky. Tera has chosen, instead, a 9300K "white," which is *very* bluish by comparison. Their reason? "To offer a picture that would be very exciting to watch, . . . very natural in color, and lifelike in color balance."

Now, I will be the first to admit that, with a good program source, picture color from the Tera is immensely impressive. In daylight and indoor scenes alike, the colors have a vividness and saturation that reminds me of the best Technicolor films I ever saw. But once you get past that, you soon realize that everything in the picture that is trying to be a shade of gray has, instead, taken on a distinctly bluish cast. You see it in distant fog, macadam road surfaces, flannel business suits, the hair of gray panthers, and overcast skies. And night scenes, which are often lit or filtered for a heavy blue cast to begin with, look as if they were filmed 20' below a coral reef.²

Skin tones, too, are often a problem, even in sunlight. Normally a pale pink with a faint brownish tint, Caucasian skin becomes distinctly brownish with Tera's extra blue content, giving the impression that everyone is sporting a healthy Malibu tan. (And this from a company based in Massachusetts, where the usual complexion is a waxy pallor!)

Apart from the fact that I dislike seeing everything trying to turn blue, I am irked at the implications of this. I have sought endlessly in these pages to try and preserve the idea that fidelity in sound reproduction means similarity to the sound of unamplified acoustical instruments, but have lived to see that reference lose its meaning because so few people ever hear live, unamplified instruments any more. (Today, "good sound" appears to be whatever turns you on.) But objective measurements are much better able to define visual colors than sound quality, and even by 1940s standards, the correct colorimetry of video is much more stringently defined by industry-wide standards than the accuracy of sound reproduction ever was. Certainly, any manufacturer has the right to fudge those standards as he sees fit, in order to produce what he considers a "better" picture, but to claim in the same breath that it is

² Transparencies illustrating the Tera's color balance are reproduced at the end of this month's "Industry Update" column.

also a more "natural and lifelike" picture is to miss the whole point of fidelity.

All professional monitors are set up for 6500K, and all film transfers to video are color-balanced relative to this reference. The only way you can recover those hues is by duplicating the original reference "white"; any other white will degrade color fidelity. Period. Just as the serious audiophile wants to hear what a recording really sounds like, whether or not he happens to like that sound, the video perfectionist wants to see the color that's on his signal source, not someone else's idea of what looks "better" than the source. That's a guiding principle of the video newsletter I've been publishing for the last 10 months, and I'm promulgating it here because I passionately believe in it.

Many times in *Stereophile*, I have treated audio products with what may have been unjustified harshness, for no better reason than that I was pissed because they did almost everything perfectly and then bombed out through one silly but fatal flaw. That is how I feel about the Tera 621C. All minor cavils aside, this is a stunning performer, and it left me with the impression that its picture-quality potential exceeded in most respects anything I was able to feed to it. Resolution was good enough that I could view letterboxed (widescreened) laserdiscs without feeling that any visual details were being lost because of the reduced picture height. In short, the picture looked so good that it ceased to be a barrier between me and the film I was watching. (Does that sound familiar? "The screen seems to disappear!") But while I hate to discount all these positive attributes in writing my conclusion to this review, I simply cannot bring myself to recommend the Tera for anyone who values color accuracy. Not with that arctic-cold screen setup.

Now, white balance in a monitor is not something immutable; it is the result of certain internal adjustments which can be readjusted if you know what you're doing. I do, and I plan to try readjusting the Tera for a "warmer" white when I get a few spare hours, just to see what happens.

Postscript:

I was dismayed to find that the Tera's color balance was not as readily correctible as I had expected. It was easy enough to obtain a more neutral setup while maintaining the same color

temperature throughout the entire brightness range, but it appears that Tera modified their blue color circuitry to compensate for the bluish B&W setup. When the amount of static blue was cut back, there was slightly inadequate blue saturation in some colored areas. In mid-level hues containing all three colors—mostly, shades of brown—there was a tendency for the browns to shift slightly toward orange. Walnut looked a bit like new mahogany, and Caucasian flesh tones were a bit more orangey than they should have been. These effects were slight, though, and—in my opinion at least—were much less distressing than the persistent blue cast of the original screen setup.

I had mentioned an inoperative left audio channel, which mysteriously corrected itself before I wrote my report. Afterwards, it went out again, and did not return. I still suspect a bad soldered joint, but will probably never know.

After writing the original report, I tried using a different Laserdisc player—a Pioneer PR-8210—with the Tera, and saw something I don't believe I have encountered before. On sharp brightness transitions—white lettering against a black background, for example—those areas of the picture were riddled with intermittent, short black streaks. None of the controls could remove these, and it didn't matter whether I used the set's RF or video input. With the same player, the red and magenta bars on the standard color test pattern were afflicted with what reminded me of fat little maggots—small, segmented, gray "objects" like elongated footballs, of which some continuously appeared and disappeared while others stayed put. I never saw the maggots on program material, but the black flecks were often visible in B&W areas (like piano keys) as well as in bright, fully saturated reds.

A third LV player, an LD-660, did neither of these things, so I hesitate to blame the Tera for them. But I'm not convinced it wasn't contributing to the problem, because the 8210 has never displayed those oddities from any other set, and it has been used on five.

All in all, I have some reservations about the Tera 621C. **S**

A VIDEO STANDARD

J. Gordon Holt watches Reference Recordings' new test disc

Laserdisc LD-101 (one side, CAV) containing video tests and demos. Produced and directed by Joe Kane. Price: \$59.99. Approximate number of dealers: 400. Manufacturer: Reference Recordings, P.O. Box 77225-X, San Francisco, CA 94107, Tel: (415) 355-1892.

Even though the VCR has dominated the home video scene from its outset, the reference standard for image and sound quality has always been the LaserVision video disc. Nonetheless, it's taken an absurdly long time for someone to realize that the LV's quality is good enough to serve as a source of test and alignment signals for critical monitor setup. (Whether all laserdisc players are equally suitable is another matter, which I won't get into now.) Lots of video people have been talking up the idea of an LV like this for years, so it's ironic that the company that finally took the plunge turned out to be not a video manufacturer, but a perfectionist-audio record manufacturer.

Actually, Reference Recordings had little to do with the production of this. Mainly, they provided the funding because they felt it was an idea whose time had come and they were impressed by producer/director Joe Kane's credentials. The result, however, is rather a mixed bag.

Recorded at LV's constant-angular-velocity mode, which allows for flawless stop-framing and frame-by-frame stepthroughs of lengthy sequences, *A Video Standard* combines motion-picture footage with still-step sequences of charts, diagrams, a photo slide presentation of LV manufacture, and most of the television industry standard test patterns used by professional video engineers for setting up their monitors. The test patterns, most of which were hitherto unavailable except from very costly test instruments, are a goldmine for the video perfectionist. And an extended group of audio pink-noise signals are extremely useful for assessing frequency response and setting channel balances in surround-sound systems. There are also comparisons between filmed sections that were transferred to video from film positives and film negatives, which make their point (in favor of the negative chain as a video source) as no amount of verbiage could. Nothing like this has ever before been available to the consumer, and for that, if for nothing else, we must be enormously grateful



Reference Recordings' *A Video Standard*

to Mr. Kane and Reference Recordings. But when I said this is a mixed bag, what I was referring to was its production, which is at times embarrassingly inept.

First, there's the humor. An opening cartoon sequence, and a studio-production bit with a painfully *ersatz* "Continental" accent, is toecurlingly sophomoric. Then there is the video quality. A so-called widescreen film sequence (of a small-plane flight through what might be the Grand Canyon), done with twin cameras, has a visible center boundary that is more conspicuous than the screen junctions in the original Cinerama. Most of the film clips showing people are slightly phase-shifted toward magenta. None of the film transfers were digitally mastered (a relatively recent breakthrough in LV sharpness), there are no Surround-Sound signals that might test a decoder's logic action, many of the still-frame diagrams have text that is completely illegible even with the best NTSC equipment, a number of the monitor tests are duplicated several times during the disc (for no apparent reason), there are no encoded stop flags (which would have prevented ending film sequences from sailing right through the ensuing still-frame segments), the instruction booklet seems to have

no logical organization and lacks a central index to the contents, many of the tests and adjustment procedures are not explained well enough for the novice to use, the music (from the libraries of RR and Hearts of Space) is hopelessly inappropriate to the images it accompanies, and—perhaps most seriously—there is a small but potentially serious error in one of the screen tests. The centering/overscan cross-hatch pattern is shifted about 2% to the left. (All the other patterns are dead-on.)

In short, there are a lot of minor things about *A Video Standard* that one can complain about, so its release should in no way deter anyone who was planning to do something like this but may now feel discouraged because they won't be the first. For example, welcome additions to what's on *AVS* might include some state-of-the-art film transfer segments and, for comparison, some high-quality video-original footage (with an explanation of why freeze-framing a moving object on the latter always causes jitter), some enclosed printed materials

for referencing a neutral gray and the video primary and secondary colors, some tests for color-signal resolution, three low-level primary-color lines for setting screen cutoffs, and some sections with surround-sound ambience from all channels and directional information from each of seven directions, to ascertain the effects (if any) of the logic on the overall stereo spread. Oh, and one other thing: adequate and adequately organized instructions.

Now that I've torn *AVS* to pieces, could I possibly recommend it to any serious videophile?

Absolutely, positively, and emphatically. If you don't already own \$100,000 worth of professional test equipment, this is a disc you *must* buy, even if it means also having to spend 10 times as much again for a laserdisc player to use it on.

A Video Standard, according to Reference Recordings, is available from "all video stores." Fat chance! If yours gives you the predictable blank look when you ask for it, write or phone Reference Recordings for details. **S**

SHURE HOME THEATER REFERENCE SYSTEM

Bill Sommerwerck

Five-speaker, one-subwoofer, three-amplifier, surround-sound-decoder system for playback of conventional and encoded recordings. HTS 5300 decoder specs appear in review in Vol.12 No.8 (p.150). Price: \$999.

HTS-50SPA amplifier: Frequency response (Flat mode): 20Hz–20kHz, ± 0.5 dB. Power output: 100W minimum per channel into 8 ohms at $< 0.1\%$ THD. Input impedance: 100k ohms. Input sensitivity (full power, Flat mode): 1V. Dynamic range (defined as noise level to clipping): > 100 dB, 300Hz–20kHz. Minimum load impedance: 4 ohms. Dimensions: 4" (102mm) by 16 $\frac{1}{8}$ " (429mm) by 14" (356mm). Weight: 27 lbs (12.3 kg). Price: \$1125.

HTS-50LRS speaker: two-way closed-box design. Cabinet: 1" particle board with walnut veneer. Drive-units: 1" soft-dome tweeter, 6.5" polypropylene-cone woofer. Crossover: 4th-order passive. Frequency response: 80Hz–18kHz (LRS mode); 60Hz–18kHz (LRSx mode). Power handling: 200W peak. Nominal impedance: 5.6 ohms. Sensitivity: 85dB SPL at 1m on-axis, 2.83V pink noise. Fuse: 3 amp fast-blow (tweeter). Dimensions: 343mm by 254mm by 219mm (10" by 13.5" by 8 $\frac{5}{8}$ "). Weight: 14kg (24.2 lbs). Price: \$500 each.

HTS-50CF speaker: two-way closed-box design. Cabinet: 1" particle board with walnut veneer. Drive-units: 1" soft-dome tweeter, two 6.5" polypropylene-cone woofers. Crossover: 4th-order passive. Frequency response: 80Hz–18kHz (CF mode); 55Hz–18kHz (CFx mode). Power handling: 200W peak. Nominal impedance: 5.6 ohms. Sensitivity: 88dB SPL at 1m on-axis, 2.83V pink noise. Fuse: 3 amp fast-blow (tweeter). Dimensions: 508mm by 343mm by 219mm (20" by 13.5" by 8 $\frac{5}{8}$ "). Weight: 16.8 kg (37 lbs). Price: \$750 each.

HTS-50SW subwoofer: 4th-order vented box with 12" paper-cone drive-unit. Frequency response:



Shure HTS
surround-sound system

35–80Hz (SW mode). Sensitivity: 91dB SPL at 1m on-axis, 2.83V pink noise. Power handling: 200W peak. Impedance: 8 ohms. Fuse: 10 amp fast-blow. Dimensions: 18" (457mm) by 23" (584mm) by 14" (356mm). Weight: 65 lbs (29.5kg). Price: \$625.

System price: \$7749. Approximate number of dealers: 150. Manufacturer: Shure HTS, 222 Hartrey Avenue, Evanston, IL 60202-3696. Tel: (312) 866-2608.

The Shure HTS Home Theater Reference System consists of five speakers, a subwoofer, and all the electronics needed for surround-sound reproduction. (Except for a preamp; but pre-amps are so *declass *.) Although each component can be purchased separately, Shure's recommended system contains the following items: four 50LRS speakers (\$500 each); one 50CF speaker (\$750); one 50SW subwoofer (\$625); three 50SPA signal-processing amplifiers (\$1125 each); and one 5300 Dolby MP decoder (\$999). The combination totals a hefty \$7749. Neither a partridge nor a pear tree is supplied, though a cooperative dealer might be pressed into providing them.

Moving in the direction of electron flow, the first component is the 5300 decoder. You can read a review of it in the August issue of *Stereophile*. Though others may disagree, the 5300 is the best-sounding surround decoder I have heard (regardless of system), and is unconditionally recommended.

The 50SPA amplifiers are remarkably compact and light for their power rating. Shure

selected a premium-grade toroidal transformer and high-efficiency heatsinks to keep the amplifier down to a manageable size and weight. (Shure assumes the amps will be stacked, possibly on less-than-industrial-strength shelves.) Rated at 100W/pc into 8 ohms, Shure says most samples put out 120W!

Each channel has its own level control for system balance (if you're not using matched speakers). The Shure subwoofer is designed to be 6dB more sensitive than the LRS speakers, so you may need to turn down the subwoofer channel slightly. (This added output is intended to compensate for a bass-shy room without having to turn down the other channels.)

I This review was written before *Stereophile* acquired a complete two-channel Audio Precision test set-up. We shall have to take Shure's remark on trust, therefore, though I should point out that, in my opinion, an amplifier's rated power into 8 ohms means zip. Considerably more informative is the way in which the amplifier's output voltage changes into different loads, how close it gets to doubling as the load halves from 8 to 4 ohms. A 100W amplifier that delivers 100W into 8 ohms and 120W into 4 ohms, for example, is one that is severely current-limited and will not drive real-world speakers to very high levels when compared with an amplifier that puts out the same 100W into 8 ohms but manages 190W into 4.

—JA

There is also a selector switch to set the frequency contour appropriate for each Shure HTS speaker. The first position, marked "Flat," is for use with non-Shure speakers. The "CF" and "LRS" settings are for the like-named speakers when the subwoofer is used. The "CFx" and "LRSx" settings supply some compensating bass boost when the subwoofer is absent (though they cannot fully compensate, of course). A sixth "SW" position on the left channel adds low-pass filtering for the subwoofer.

The corresponding sixth position on the right channel is marked "Bridged." It converts the amplifier into a single-channel amp of much higher power, but the minimum load impedance that can be driven is doubled; *ie*, speakers dropping below 8 ohms will not then be suitable. Shure supplies metal covers to be placed over the speaker terminals of a bridged amp. As with *any* high-power bridged amp, the 50SPA's voltage could electrocute someone who comes into contact with the outputs during a loud, sustained passage. The odds of this happening, of course, are very low.²

The volume and contour knobs are nearly flush with the front panel and have rounded edges, making them difficult (but not impossible) to turn with the fingers. A wide slot in the knob accepts a large coin for easy turning. The idea of this lack of ergonomic ease is to keep the kids from messing up the settings. Each amplifier comes with a bag of six plastic inserts to label each channel of the amplifier, plus a seventh marked "Bridged." You just snap the appropriate label into the groove next to the matching level control.

Each channel has two LED indicators. A green LED shows when the input signal—following the level control—exceeds some undefined level. (The flickering of these LEDs can be irritating, though I don't think they'll induce *un grand mal*.) A red LED comes on when the amplifier clips or the protective circuit is activated.

The outputs are not fused. When the amplifier is overdriven, it reduces its gain to keep its output below the clipping region. (This is not new; Crown used something like it eight years ago.) Each channel has a front-panel switch to disable this feature.

The amplifiers run cool—perhaps a bit too cool for those who feel an amplifier should be heavily biased. Even a stack of three gets barely warm to the touch after several hours' operation. Of course, the 50SPA is supposed to be an "install and forget" product, so a cool-running design is appropriate.

The amplifiers' (and decoder's) cosmetics are distinctive. The upper section of the front panel is "pleated," with a vaguely 1/n spacing. The orange-on-black coloring is initially off-putting, but one grows used to it. It is at least *legible*, something you can't say about the all-too-common grey-on-black lettering.

The speaker systems are hefty little buggers. Their cabinets are 1" particle board, rather than the common ¾". This difference is most noticeable when you rap the sides. The response is a dull click, rather than the slightly resonant thud of most other systems.

The 50LRS systems (intended for left and right positions in both the front and rear) are two-way speakers. The woofer is a 6.5" polypropylene-cone driver. The tweeter is a modified 1" soft-dome driver. Only the tweeter is fused, on the reasonable assumption that modern mid and bass drivers can handle a lot of power before giving up.

The tweeter modification deserves some explanation. The designer felt that too many tweeters use their breakup resonance to extend their bandwidth, and consequently sound unnaturally bright. Desiring a resonance-free response, he coated the inside of the dome with adhesive to damp it. This lowered the amplitude of the most prominent resonances, but caused the tweeter to roll off prematurely: the rolloff was allowed to remain without any compensation.

Hmm.

If you're really ancient (like most of the *Stereophile* staff), you'll remember the heyday of KLH. KLH claimed for its speakers the optimum "octave-to-octave balance." This was their euphemistic way of saying the speakers weren't *exactly* flat, but contoured to account for the high-frequency distortion in most program material, and listeners' irritation with said distortion. In other words, KLH speakers were rounded-off a bit at the top to make less-than-ideal program material listenable.

Whether phonograph records of that era were *that* bad is debatable; we tend to view the high point of phonograph history through the

² Loyal readers may remember a murder-mystery parody we published about eight years ago, in which the victim was electrocuted with a vacuum-tube amplifier.

rose-colored glasses of direct-disc and super-analog recording, forgetting just how mediocre the average LP was. Still, it's not good business to sell a product that most listeners won't enjoy with most program material.

It's probably fair to say that the superior quality of direct-disc and super-analog recordings, along with vastly improved electronics (both tube and solid-state), encouraged speaker designers to create systems that were really flat in the midrange and treble. The level controls that once were commonplace began to disappear around the same time; why let the customer screw up what you worked so hard to achieve?

The Shure Home Theater Reference System appears to signify a return to the KLH school of thought. Damping the tweeter for smoother response produces a rolled-off top end, and this slope was allowed to remain (though it could have been equalized in the amplifier), for several reasons:

1) It's more like the standard Academy curve, so movies sound more as they would in a theater.

2) Many soundtracks are too bright and topsh.

3) Most listeners fail to acoustically treat their listening rooms, which are therefore almost always too bright.

Was this a wise decision? I don't think so. The Shure HTS system is badly lacking in detail and air, partly due to the rolled-off top. Further, if a listener buys nearly \$8000 worth of equipment for his A/V room and then refuses to spend a few hundred dollars for acoustical treatment, he's foolish. It's obvious that a rolled-off speaker in a live room can never sound as good as a flat speaker in a neutral-to-dead environment. Shure HTS should have added the needed EQ in the amplifier, plus a high-frequency contour control³ to adjust the top end to the room, program material, or taste.

There is the broader question, of course, of whether the lack of midrange and treble controls on speakers is a good thing. I think it is. It removes failure-prone components that do nothing to improve the speaker's sound, and it guarantees that the system balance will remain as the designer intended. It also forces the serious listener to optimize the speaker's setup and the room's acoustics. Unfortunately,

³ "Contour control" sounds so much less disturbing than "tone control," does it not?

the near-total disappearance of tone controls from preamps removes the last avenue of correction available for overly bright recordings. (Lewis Lipnick griped about this very point in his review of the B&W 801 Matrix Series II in Vol.10 No.9.)

In my opinion, any good hi-fi system should have an audiophile-grade equalizer (assuming such things exist) to permit minor corrections to less-than-perfect material. There is nothing aesthetically perverted about this; why suffer a bad recording when a bit of EQ will fix things?⁵ And what, may I ask, is the difference between correcting a bright or dull recording at the speaker, and doing it at the preamp?⁶ The latter is more convenient and flexible.

In short, a loudspeaker should be designed to deliver flat response in a neutral room. It is then the listener's responsibility to provide a room with balanced acoustics and to position the speakers at the best spot in that room.⁷ If the manufacturer feels that contour controls on the speaker are desirable, switches are a better choice than pots. (Previous Infinity speakers, and several current Apogee models, have electronic crossovers that include frequency contouring.)

Shure HTS's 50CF speaker is intended for the center-front (dialog) channel. It uses two of the 50LRS woofers to handle the additional power required by loud dialog. Of course, you can mix 'n' match the LRS and CF systems in whatever combination suits your needs.

The 50SW subwoofer uses a paper cone with a rubber surround. Loading is bass-reflex with a ducted port. There is no crossover, either passive or active; the 50SW is to be driven by the suitably shaped signal provided by the 5300's subwoofer output. The claimed response is 33-80Hz when used with the 50SPA amplifier.

Although not of mini-monitor size, the Shure HTS speakers are designed to be as unobtrusively small as possible while providing ade-

⁴ One of the marvelous things about the 801's tweeter is the way a treble control can tame a hot top end, without the 801 losing any musical detail. Try *that* on a lesser speaker!

⁵ I rarely touch the tone controls—maybe one recording in 20. But I appreciate having them when I need them, most recently with the London reissue of the Mehta *Turandot*.

⁶ The answer is that the elitist-snob audiophile can't do anything about the level control, which is part of the speaker, but he *can* refuse to install an equalizer.

⁷ If Apogee, B&W, Fried, Infinity, and others go to the trouble of designing high-performance speakers, then *we* should expend the effort to place them in a high-performance environment. If you don't agree, buy Bose 901s, 'cuz yer just brainless scum what don't *deserve* to own nice things, sez I. So there.

quate sensitivity and high power-handling capability. All were well-shielded. I was able to place the 50CF on top of my NAD MR20A without inducing color impurity.

All this stuff takes up "mass quantities" of space; my living room went from "impossibly cluttered" to "impossibly cluttered squared." There are even two separate boxes for the speaker grilles, for a total of 12 cartons.

The instruction book is comprehensive, with lots of detailed drawings showing a variety of hookups. (Except for some RCA cables in the decoder box, no wiring is supplied.) Even without the book, though, assembly is a snap. Everything goes exactly where you think it should. The only possible confusion is where to set the equalizer knobs on the power amps. Once you see that the subscript refers to "extended" equalization *without* the woofer, it all makes sense.

Sound quality

"Out of the box," I had some amplifier problems. (What else is new?) The first amplifier fried its power-supply fuse when I turned it on. The second also destroyed its fuse *and* tripped my apartment's circuit breaker. Only the third amp's fuse survived turn-on.

Yikes! I called Shure HTS. It seems that the toroidal transformer's primary resistance is so low, the amplifier draws over 100 amperes at turn-on!

Shure says this current pulse lasts only a millisecond or so, but I'm doubtful. It's probably 0.05 to 0.10 seconds; one millisecond seems too short to blow a fuse *and* trip a breaker. I discovered that if I turned on the second or third amplifier too soon after the first, the breaker almost always tripped.⁸ I recommend waiting about 15 seconds; use the time to select your program material.

The fuses blew because they didn't meet spec; their *rating* was correct, but many samples had too short a time constant. Shure has switched to a more reliable fuse; it looks like it came out of an arc welder! Shure sent amps with the new fuses and none of them have popped (though my circuit breakers still cringe when I turn on the amps).

As faithful readers may know, my listening room is heavily padded with 2" type 705

⁸ Most circuit breakers are thermal. If the breaker is still warm from the first current pulse, the second pulse—even though not an overload—may heat the breaker to its tripping point.

Owens-Corning fiberglass panels. My B&W 801 Matrix loudspeakers (designed for flat on-axis response and wide dispersion) sound great; the balance is perfect. Although the Shure systems are rolled off partly to compensate for bright rooms, I did not remove the fiberglass panels. Loudspeakers that are slightly rolled-off at the top (as are many electrostatics) can still sound superb. Flat response is highly desirable, but it is not the only factor determining a speaker's sound quality.

To get the suspense out of the way: the Shure Home Theatre Reference System, despite its high price tag and claims to "high resolution,"⁹ is not a very good product. Unfortunately, it is easier to describe what is wrong with the system than what is right. I'll begin by discussing its sound quality in general terms, then cover how it sounds with specific recordings.

The first thing one notices is the overall darkness and lack of air and detail. (This is not due just to the treble rolloff, as we will see in a moment.) There is a touch of boxiness as well (which may be a subjective artifact of the rolloff). This coloration seems to disappear after a minute or two of listening.

Although the midrange driver is (supposedly) polypropylene, it sounds more like Bextrene. Vocal and instrumental timbres are far too liquidly dark. They lack the vibrant detail and distinctive character of live sound.

Simply put, the midrange is highly colored. Not in the sense that there are audible response aberrations, but that timbre is altered to the soft and sweet, losing the bite and character of live sound. The Shure midrange lacks the subjective flatness and lack of coloration of the 801s (and a lot of other speakers). (See the sidebar, "Lumpy. . .?")

There is no grit or grain, but voices are decidedly hard, taking on a mildly metallic edge. This combination of hardness and dullness produces the illusion of a "swaybacked" response, in which the strength of musical fundamentals seems diminished. (The hardness is in the speaker, not the amplifier, as explained later.)

Shure claims good power-handling capability and the ability to play at high volumes without strain. Not so; the sound becomes congested at high volume levels. The Shure HTS

⁹ The boxes are labeled "High Resolution Products for the Home Theater." I asked Shure if this were advertising hype or if they really meant it. Shure said they meant it, and that I should review the products accordingly.

system simply cannot match the 801's ability to play loudly *and delicately* at the same time.

On the positive side, there is good midrange presence: dialog is far more intelligible than it is on the 801. Unfortunately, the lack of detail largely mitigates this advantage.

Let's consider some specific recordings, both audio and video:

Beetlejuice (Warner Bros. LaserDisc): Danny Elfman's music is one of the most enjoyable scores I've heard in years. The main title, with drums and heavy scoring, is a rough test for any speaker. The Shure HTRS simply could not

handle the loudest passages, especially when surround material was simultaneously present, without sounding confused and congested. In scenes with both dialog and music, the HTRS had trouble revealing musical detail. The "fine structure" of the sound was muffled and covered over.

The Wizard of Oz (Criterion LaserDisc): This digital recording clearly revealed the hardness the HTRS adds to voices; music, too, sounded hard and strained. The HTRS was particularly cruel at exposing the splices, background noise, and pops of the soundtrack, *despite the*

"LUMPY". . . WASN'T HE A CHARACTER ON *LEAVE IT TO BEAVER?*

I occasionally use the term "lumpy" to describe the sound of components which, though not having any obvious frequency-response aberrations, nevertheless *sound* less than flat. Perhaps a paragraph or two of explanation would be a good idea.

Have you ever looked closely at a loud-speaker's frequency-response curve? Though a good speaker may have a smooth response, free of significant peaks or dips, the response is never ruler-flat. There are always dozens of small holes and bumps. Some are caused by diffraction or interference. The rest are due to resonances, either in the cabinet or the driver.

More than any other factor, resonances are the reason speakers sound like speakers, and not like a live performance. Each resonance stores energy, then releases it a fraction of a second later, blurring and coloring the sound. Electrostatic and ribbon speakers tend to sound better than conventional speakers in part because their mass is lower than the air load they drive; the resultant heavy damping suppresses resonances. Polypropylene and other high-performance plastics can improve the sound of conventional drivers precisely because these materials have high internal losses, with a similar effect on resonances.¹

Mechanical resonances also wreak havoc in turntables and tonearms. A \$300 CD player runs sonic circles around a \$300 turntable/arm/pickup system, not because it's digital, but because it's free of the mechanical resonances that plague phono reproduction. You have to hit about the \$1500 price point before L.P.s can compete

with CDs. Open-reel analog tapes (such as those from Barclay-Crocker and DTR) have a similar advantage: they sound great even on a cheap open-reel deck.

If a speaker system were *truly* flat—that is, almost completely free of resonances—you wouldn't believe how lifelike it would sound. The superior quality of the WAMM, despite the fact that it contains no exotic drivers, is largely due to David Wilson's use of a driver over only two octaves or so of its range, limiting it to the region of minimal resonances.

Two speaker systems with comparably flat response can nevertheless sound quite different, due to the drivers' residual resonances. The more-resonant system tends toward a smoother, more liquid sound, but with less detail and a loss of the characteristic color and bite of each instrument. They simply sound more "colored," but in ways that are not obviously related to their measured response. It is this sort of thing I'm referring to when I say a product sounds "lumpy." It's a convenient catchall for a (literal) multitude of sonic aberrations.

¹ The late Robert Fulton is quoted as saying he never heard a plastic driver that reproduced instrumental timbre accurately. Although this is true in an absolute sense (nothing is perfect), plastic drivers are generally superior to paper drivers, and for reasons that are well-understood.

Robert Fulton not only engineered some of the most natural-sounding audiophile recordings ever to grace a turntable, but also some of the most egregiously colored high-end speaker systems ever to disgrace a hi-fi showroom. I have never understood this dichotomy. Although Fulton was a kind, good-hearted man who did much to advance the cause of high-end audio, he also generated more than his share of muddle-headed theories. It is precisely *because* someone's death lends a cachet of truth to their philosophy that I am obliged to attack some of Robert Fulton's opinions. There is nothing personal in this

treble rolloff. This indicates the presence of many small resonances which exaggerate noise. (It has long been known that noise is *less* audible on systems with wideband, truly flat response.)

Beethoven *Eroica*; Smithsonian Chamber Orchestra: This simply miked, natural-sounding recording was not well-served by the HTRS. The top lacked delicacy and airiness. There was a trace of boxiness and a faint honkiness. Transparency was low. If the sound had a color, it would be brown. (The 801s are subjectively white or a cool white.) The nasal quality of the period violins was somewhat lost. The bass was not muddy, but neither was it especially articulate.

On the positive side, reproduction of this CD was subjectively clean, effortless, and solid. The balance was neither clinical nor warm. (Most speakers lean one way or the other.)

Mussorgsky-Ravel *Pictures at an Exhibition*; Muti, Philadelphia Orchestra: This recording makes a strong case for the analog mastering of CDs. It is an idealized view of the orchestra that does not sound artificial. The sound is immediate and highly realistic. Unfortunately, the HTRS lost most of the realism. I was all too aware that I was listening to a recording, not the real thing. Bass was full but not well-defined.

Perlman, Mehta, NYPO; Romantic Masterworks for Violin: This is one of those tipped-up DG recordings that came across pretty well on the HTRS, the added high-frequency energy partially compensating for the HTRS's rolled-off top. The overall sound was rich and dark, idyllically clean and sweet. Some listeners would find this the kind of idealized reproduction they are looking for, but detail was lacking, and the net effect was not especially realistic or involving.

Paganini; 24 Caprices; Perlman: Sometimes a bad recording tells more about a speaker than a good one. The analog master for this CD was never the kind of recording you'd hold up as an example of the "superiority" of analog. "Dark" and "grundy" are the most polite adjectives I can think of. The 801s at least don't make the sound any worse. Unfortunately, the HTRS had exactly the right colorations to render Mr. Perlman's otherwise exemplary performances a quasi-excruciating listening experience.

I ran one of my own digital master tapes past the HTRS, a recording of choir, organ, and brass. The sound was dark and lacking detail,

with an acute loss of ambience. Room sound (what I call "air hiss") was nevertheless more prominent than with the 801s. The voices—mostly female—were hard and sibilant. Hand claps were likewise unpleasantly hard and metallic. Vocal timbres were homogenized, with the texture and character of each voice reduced to a liquid blandness. The overall sound was smooth and sweet in a way that some listeners would call "musical"—but it certainly wasn't accurate.

I have reviewed several fine speakers over the past few years. Although none matched the quality of my Acoustat Sixes or B&W 801s, they were all satisfying to the extent that throughout the review period, I never had the urge to go back to my regular speakers. But the Shure system never sounded particularly realistic or even musically gratifying. There were a few recordings where I briefly found the dark, overly liquid midrange appealing for a brief time, but I was most often aware of the high coloration level and the occasional hardness. The moment I turned on the HTRS, I wanted to get back to the B&Ws as soon as possible.

Is this a fair reaction? After all, the 801s are among the best speakers made. Is it fair to judge the Shure HTRS against them? Are my expectations unjustified?

No, I don't think so. I've reviewed dynamic speakers that could hold their own against electrostatics. A speaker doesn't have to be state-of-the-art to have low coloration, low distortion, and produce musically appealing sound.

From a reviewer's perspective, one of the nice things about speakers is the fact that even the best of them are so wildly inaccurate (except, maybe, the Plasmatronics helium tweeter) that one can be reasonably certain that all (or most of!) the defects one *thinks* one hears are really there. So I felt very comfortable that my evaluation of the Shure system—far too much coloration and lack of detail (especially during complex passages) for a system in this price range,¹⁰ as well as an unacceptable amount of added hardness—was dead-on.

Comparisons

Nonetheless, I decided to find a high-quality "budget" speaker for comparison. You may remember from the 1987 SCES report that Tom

¹⁰ Which, I ought to point out, is \$1000/pair for the LRS systems. The high total cost is due to the duplication required for surround sound.

Norton and I were impressed with the \$325/pair Fried Betas. I called Bud Fried and he was kind enough to loan a pair.

The Betas were not initially prepossessing. Tonal balance was thin, even to the point of sounding "pinched." Unfortunately, I could not push the Betas against the wall and still test them properly. (Even if the Betas weren't ported at the rear, pushing them—or any other speaker—near the wall introduces midrange colorations.)

I switched on the Shure HTS woofer, and that fixed things. *No contest.* The Frieds blew the Shure HTRS speakers right out of the water.

I started off with *Beetlejuice*. The top end now had the kind of openness and clarity one would expect from a good speaker. Considerably more detail was audible, especially during the loud passages where the Shure system gets rather congested and constricted. The Betas negotiated these passages with considerably more finesse.

Dialog had just as much presence as with the Shure, *and* you could hear all the musical detail easily. The Beta's balance for movies struck me as "just right."

The Frieds do have a touch of boxiness, as I noted in my show report, but it's the sort of coloration (like the Shure's faint nasality) that one ignores after a minute or two of listening.

I tried the same choir, organ, and brass master tape I'd run past the Shure system. Again, no contest. The Betas revealed far more detail and more ambience, and more accurately preserved the timbres of voices and instruments. Although the Betas were no match for the 801s, they are much closer in sound to the 801s than they are to the HTRS.

I listened to the Betas with the 50SPA amplifiers set to "Flat." None of the colorations or hardness audible with the Shure speakers were apparent. Hence, the Shure amps are not the source of these subjective problems.

I could go on, but this is not a Fried review. The point is that a pair of 50LRS speakers and the 50SW subwoofer cost \$1625, while a pair of Betas and the matching Fried subwoofer cost \$655. The Frieds (which in my opinion are Class D, or even lower-Class-C speakers) are so much better-sounding, it isn't funny—and the price difference would buy a nice power amp.

Conclusion

The only conclusion I can draw is that one can buy a better amplifier/speaker system than the Shure HTRS for a lot less money—or a much better system for the same money. Although I still happily recommend the HTS 5300 surround-sound decoder, I cannot recommend the Shure HTS Reference System. **S**

FOLLOW UP

Thiel CS1.2 loudspeaker

You will probably remember from October's "Recommended Components" that there was disagreement in *Stereophile's* ranks over the merits of the smallest in Thiel's range of three loudspeakers, the CS1.2. Larry Archibald had been mightily impressed with the sound of this \$1090/pair floorstanding speaker last January,¹ feeling that it "images extremely well, has a more extended . . . and more natural high end [than the similarly priced Spica Angelus] . . . plays reasonably loud easily, has satisfying low-end extension, and possesses a very neutral tonal balance with no significant aberrations." Yet in June's Audio Anarchist column,² although he liked the speaker's lack of tizz in the

treble and its neutral tonal balance, Sam Tellig grew increasingly dissatisfied with the CS1.2, feeling that while its bass did not boom, it failed to "put a firm foundation under the music. . . . The sound was thin, bass-starved." In addition, ST felt that the imaging stayed localized within the speakers rather than allowing the soundstage to float unbound by physical constraints.

Puzzled by this conflict, we asked Sam to send his pair of CS1.2s to Santa Fe so we could compare them with the original review pair under familiar circumstances. Before listening to each pair, I ran a series of measurements on all four speakers to see if there was any obvious reason for the conflict of opinion. Fig. 1 shows the spatially averaged in-room response of Larry's pair, a curve that correlates quite well with the subjective tonal balance. Though a slightly overdamped alignment leads to the

¹ Vol. 12 No. 1, pp. 113–119.

² Vol. 12 No. 6, pp. 77–79.

response starting to roll off below 80Hz, it still features useful bass output down to 42Hz, the frequency of the bottom E string of the double bass and bass guitar. While the '1.2 does not compete with the Waveform or Infinity IRS Beta for seismic shock capability, and has perhaps half an octave less extension than the similarly priced Vandersteen 2Ci, it still has reasonable low-frequency performance for what is basically a small loudspeaker, in my opinion.

Fig. 2 shows the frequency response of the four samples measured out of doors at 1m on the tweeter axis, using pink noise and an Audio Control Industrial SA-3050A 1/3-octave spectrum analyzer. Each speaker sat on a 36" stand. From top to bottom, the traces represent serial numbers 2010 and 2009 (ST's pair), and 0624 and 0623 (LA's pair). Certainly small differences can be seen within the 1dB resolution of the analyzer, Sam's pair appearing to have a slightly smoother response through the treble. But in the bass, all four speakers are to all intents and purposes identical, though the slightly overdamped alignment is confirmed. (As shown in fig. 1, this is ameliorated when the speaker is sitting on the floor in a room, due to boundary reinforcement.)

My next task was to look at the response of each speaker to a 25µs rectangular pulse, again on the tweeter axis, and calculate the equivalent anechoic response in the midrange and treble using FFT analysis. The impulse responses of the speakers—that for S/N 2010 is typical and is shown in fig. 3—were very similar, basically showing a reasonably time-coherent reproduction of the pulse on this axis, with both drive-units connected with the same polarity and the impulse tail broken up by ultrasonic ringing from the aluminum-dome tweeter. (Compare this impulse response with that of the Meridian D600 loudspeaker, which uses a version of the same tweeter but which lacks a time-coherent crossover or construction.) The results of the FFT analysis, plotted from 400Hz to 30kHz, are shown in fig. 4 with, again, the curves from top to bottom corresponding to samples 2010, 2009, 0624, and 0623. With the exception of the exact position and height of the tweeter resonance of each speaker and the fact that the notch centered on 7kHz is a little more pronounced on both of Larry's pair, and that Sam's pair appeared to have slightly less sensitive tweeters, the curves are as alike as peas in a pod. Certainly from this

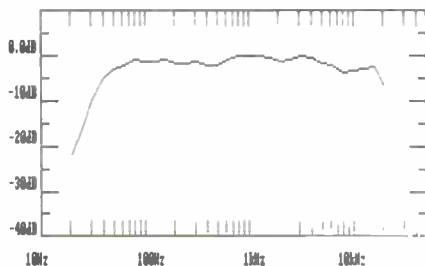


Fig. 1 Thiel CS1.2, 1/3-octave, spatially averaged, in-room response

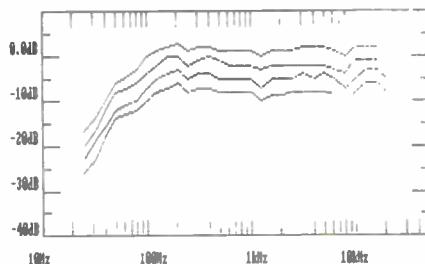


Fig. 2 Thiel CS1.2, 1/3-octave response at 1m, from top to bottom samples 2010, 2009, 0624, 0623

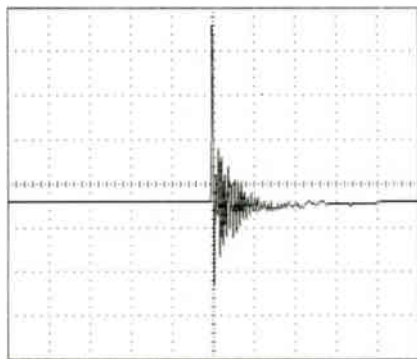


Fig. 3 Thiel CS1.2, impulse response (5ms window)

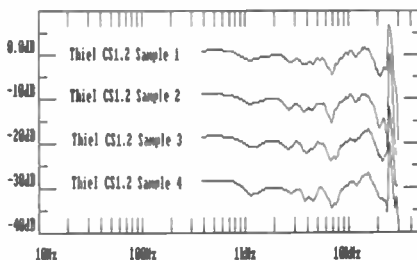


Fig. 4 Thiel CS1.2, FFT anechoic response, from top to bottom samples 2010, 2009, 0624, 0623

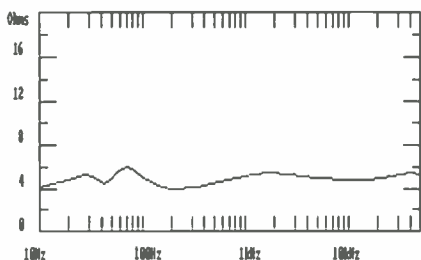


Fig.5 Thiel CS1.2, modulus of impedance (2 ohms/vertical div)

measurement, it looks as though you could take any two from four to make a pair, suggesting excellent QA on Thiel's part. (The slight tweeter peakiness centered on 16kHz in fig.1 correlates with the "knee" in this region, the in-room response.)

Bearing in mind, however, that Sam's criticisms concerned a lack of bass, I then measured the nearfield LF extension of each, as well as the way the impedance changed below 200Hz for each, to see if this would throw up any clues. Fig.5 shows a typical impedance curve for the Thiel CS1.2, revealing it to be fundamentally a 4 ohm design. The bass region shows very little change with frequency, though the port tuning is revealed by the dip a shade above 40Hz and the twin peaks above and below. None of the four showed any significant difference in positioning of the peaks and dips, the upper peak occurring at 63, 65, 62, and 62Hz (2010, 2009, 0624, and 0623, respectively) and reaching values of 7.25, 7.6, 6.1, and 6.7 ohms. The port tuning could be found at 43, 42, 42, and 40Hz, respectively, with an impedance ranging between 4.2 and 4.7 ohms, while the lower peak occurred at 26Hz for all four speakers, reaching heights of 6.5, 6.6, 5.7, and 6.25 ohms, respectively. It could be argued that the impedance in the bass shown by Larry's pair didn't quite reach the values of Sam's pair, but I think this is academic.

Regarding extension, all showed a similar characteristic in the bass with the measuring mic positioned close to the woofer dustcap. The response was ostensibly flat from 200Hz down to 90Hz or so, with then a gentle roll-out reaching -6 dB between 49Hz and 52Hz, depending on the sample. There was a slight difference between the two pairs here, however, in that the woofers of Sam's pair were slightly more damped, starting to roll out a little

earlier than those of Larry's pair, with a shallower slope. (The response was -1 dB at 77Hz and 85Hz, 2010 and 2009, compared with -1 dB at 66Hz and 73Hz, 0624 and 0623). In view of the fact that the reflex port is tuned to 40–43Hz and therefore contributes useful output in the octave between 36Hz and 70Hz, I still can't see that this slight measured difference would explain the degree of the disparity between Sam's and Larry's opinions.

Finally, I sat down to some listening, starting with Larry's pair of 1.2s which I had used at length last December. The CS1.2 is fitted with three holes for floor-coupling spikes, which I used (see my introduction to the review of the Spica TC-50 and Celestion 3 in October, p.162, for my feelings on those who don't consider such tweaks to have any aural benefit). The rest of the system consisted of Mark Levinson No.25/26 preamplifier, Mark Levinson No.20.5 power amplifiers, connected with Madrigal CPC speaker cable and HPC balanced interconnect, Linn Troika/Ekos/LP12 record player, and a British Fidelity Digilog D/A processor driven by the digital output of a Meridian 207 CD player.

The first music track was the Alligator blues recording of Albert Collins, Robert Cray, and Johnny Copeland (ALCD 4743), a must-have disc for anyone into Chicago blues but one where the energy and power of the music-making is spoiled by a heavy hand on the treble EQ and an artificial reverberation engine that sounds peaky, resonant, and distinctly unpleasant, particularly on Robert Cray's Stratocaster, where it almost adds a "rattle" to the sound. I tend to reach for this recording when I suspect any treble problems in a loudspeaker, as its "shouty" midrange leaves no room for additional speaker problems in this region. Both pairs of 1.2s sounded rather too aggressive on this recording, the speaker's balance being a little unkind to the sound of recorded guitar. (Orchestral trumpet was also projected a little too forcefully at times.) Experimenting with the listening height showed very quickly that sitting significantly above the tweeter axis makes the mid-treble a little peaky and sucks out energy between 1 and 3kHz. As with the Spica TC-50, it is essential not to sit in too high a chair with the CS1.2 if the otherwise neutral treble is not to get a little strident. If you can see the top of the 36"-tall cabinet, you are sitting too high and the sound

will be rather thin and peaky.

The sound of bass guitar and drums was presented with quite a degree of authority, if not absolute weight: certainly the speaker has enough midbass energy to play rock convincingly, provided that you keep the levels below 100dB or so. Prolonged listening suggested that the Tellig pair of speakers had just a tad less authority, but not so you'd notice except in an A/B comparison. (And it could have been that I was just hearing what I had already measured.) "Enough" midbass was the verdict here, with the caveat that again the listener must be sitting; as well as a more strident tonal balance, the standing listener is presented with a significantly shelved-down upper bass.

Now I know that the Alligator CD is not one to have found permanent residence in the redoubtable Sam's collection, so I reached for one that I'm pretty sure he does have, the Blomstedt/Dresden recording of Strauss's *Ein Heldenleben* (Denon 33C37-7581). "Smooth treble, good string tone, a palpable presence to the presentation of the solo violin, and a precisely defined, wide but ultimately shallow soundstage," read my listening notes. Hmm. A "shallow" soundstage was one of Mr. T's criticisms, along with the fact that he felt the Thiels to localize the image within the speakers. That they certainly did do, the Denon recording lacking centerfill and the violins, for example, sounding as though they were in a phonebooth at stage left. This could well be a function of the recording—it's uncannily reminiscent of those outrageous spatially distorted Columbia recordings John McClure produced first for Stravinsky/Craft, then for Leonard Bernstein in the '60s and early '70s. I put on the more recent Bernstein Mahler 5 (DG 423 608-2). Again, the soundstage was shallow (though less so in the middle), but now the violin and cello sections did have rather more substance in that they stretched toward the middle of the stage. But insufficient bass? The beginning of the work's second movement—"Stürmisch bewegt. Mit grösster Vehemenz"—where angry double basses outline the music's stormy nature, had considerable power even given the fact that it was just a pair of 6" woofers being asked to provide the motive power. The effect was the same on both Larry's and Sam's speakers, there not being any appreciable difference in the low-frequency performance.

No, Sam, I can't agree with you: the CS1.2

does *not* lack subjective low-frequency authority in musical terms, even though it does do so in absolute, measurement terms. But yes, the soundstage presented by a pair does appear to somewhat lack both relative depth and centerfill, particularly on multimiked classical recordings. However, I felt the soundstage to be more evenly spread across the distance between the speakers, though still somewhat shallow, when my ears were level with the tweeters.

To confirm my opinion on the soundstage presented by the CS1.2s, I played a recording I had made of pianist Anna-Maria Stanczyk playing Chopin, the master tape being handled by my antique (*ca* 1975) Revox A-77. Tonally, the verdict was the same as with the Collins, Cray, and Copeland recording with which I had started my listening session: "enough" midbass to be musically convincing. The work being played was the *Scherzo* in b-flat, which hinges on some thunderous left-hand B-flats, D-flats, and even E naturals more than an octave below the bass staff. Without a doubt, these musical tone-centers had sufficient weight to balance the right-hand flurries and arpeggios higher up the Steinway's register. The soundstage presentation was accurately defined laterally, the piano image being strongly center-dominant with the instrument's soundboard and bass notes stretching toward the right-hand speaker. However, again, the image was shallower both than it should be—remember, I made the recording—and than it is presented via such time-slicing speakers as the Spica TC-50 or Vandersteen 2Ci. Overall, the Thiels seem to push the image forward at the listener a little, more so at the extreme left and right of the soundstage.

Overall, this is still good performance at the price, and the Thiel CS1.2 can be confidently recommended. But as to why the Anarchist was disappointed by the CS1.2's bass when LA and I found it to be at minimum adequate and mostly satisfying, I have no explanation. Both measurements and listening confirmed that Sam and Larry were essentially listening to the same loudspeakers. I shall retreat from the subject, therefore, muttering something along the lines of "Perhaps the bass quality of the reflex-loaded CS1.2 is more room-dependent than that of the sealed-box speakers which seem to work best in the Anarchist's listening room . . ." though I really don't believe that to be the case.

—John Atkinson

Ruminations on the back-door approach to the high end

When I travel to larger cities, the first thing I do after checking into my room is to consult the *Yellow Pages* under "Records, Tapes & Compact Discs"—for a certified vinyl junkie, discovering a source of used records in a strange city can be economically disastrous as well as socially alienating. Be upfront with your friends about your addiction, or you may find yourself returning home alone! Not empty-handed, though! If you extend your search to used-bookstores (which usually have a few records stashed away somewhere), the depth of your insanity becomes even more apparent to others. Let your friends think what they may about you, though, and go about your business. Remember, you have a mission to accomplish, and as we enter the age of the Great Vinyl Meltdown, that mission takes on desperate proportions.

Visiting local hi-fi salons enables me to pick up on what is currently hot or not! Plus, most dealers have a shelf for used equipment. Examining this section of the store is the most fun for me. Here I can find relics from the distant past (remember Collaro record players?), as well as more recently abandoned state-of-the-art gear. The prices are generally appealing (usually a fraction of what the equipment sold for new), and you can browse without being bombarded with the sales pitches and hype. I enjoy reading about the latest "super" amps or preamps from Krell, Mark Levinson, Audio Research, etc., but financial circumstances dictate that I am unable to buy them fresh from the factory. The same holds true for the other elements in the hi-fi chain—loudspeakers, turntables, tonearms, cartridges, and cables. Until recently, I've had to entertain myself with vicarious thoughts about the high end, through friends fortunate enough to be able to afford it, and by reading about it in the various journals. I am, therefore, always on the lookout for a good high-end deal!

In my recent review of the AR ES-1 turntable (Vol. 12 No. 8), I was slightly apprehensive of the fact that I did not have a record player of "reference" quality. My Systemdek IIX with the Black Widow arm had served me well in my listening, and had enabled me to make substantive comments on the sounds of other

components to which it was compared. However, I felt a need to explore the possibilities of an upgrade in this area 1) to increase my own enjoyment of my record collection, and 2) to strengthen my credibility in the eyes of other audiophiles by installing a player of reference caliber in my system. A call to an audiophile friend in Illinois confirmed my decision to look for a VPI HW-19 Mk.II set up with the ET-2 tonearm. I could retain my Talisman S cartridge—it was sounding just as sweet as ever. I immediately began a search through the classified ads in both *Stereophile* and *The Absolute Sound* for dealers offering such a combination at an attractive price. After all, I was looking for equipment which, if new, would cost close to \$2000. The audio journalist doesn't get paid *that* well! My search didn't pay off, and I began to feel I had gotten the right idea at the wrong time.

Then it dawned on me that I had once subscribed to *Audiomart*, the ultimate source for used audio gear of all types. I dug through my collection of old audio literature and magazines, hoping to find a back issue so I could call them and renew my subscription. I found one—a quick phone call and my MasterCard number put me back on their mailing list. *Audiomart* assured me that I would get the latest issue, which had just gone to press (they now publish every two weeks instead of monthly). Within four days of my call came ten pages of used and demo gear of all shapes, sizes, vintages, and prices. The listings included equipment ranging from the highest of the high end to replacement front panels for Eico preamps. Buried in the small print is, I am sure, equipment which would whet the appetite of any seasoned audiophile. And the prices asked, which *must* be included in the ads, could not be beat. I knew I was on the right track at last. Within an hour of receipt of my copy, I had located three people with the VPI/ET system I was looking for. I kept coming back to one ad in particular, which seemed too good to be true. Not only was the seller offering the setup I wanted, but was going to throw in an extra ET-2 arm-tube. It didn't take me long to contact this person and negotiate a price.

My initial feeling toward the whole deal was one of reservation. Why was this guy selling this gear so cheaply? What was wrong with it? How old was it? What parts needed replacing? Had it been wrecked due to careless set-up? I

I believe dealers refer to this activity as "tire-kicking."—JA

was skeptical. My fears were put to rest, however, after having spent some time on the phone with the seller. He sounded sincere in his efforts to answer my many questions, and assured me I would be happy with the equipment. He reminded me of *Audiomart's* policy regarding fair dealings, and offered to have *Audiomart* hold my money for three days while I had the opportunity to inspect and try out the gear. Fair enough, I thought, and went off to the bank. I rationalized to myself, as I dipped into my savings, that this was a necessary and prudent move. The price was right and I really needed to upgrade my front end.²

When the UPS truck pulled into my driveway a few days later, I was nervous. The moment of truth had come. The driver asked if I would help her with the large box containing the VPI. (The ET-2 was packed separately.) I lugged the VPI into the house and began unpacking it. This was done carefully—I had to be careful handling the subchassis and platter, for they were heavier than I had expected; the subchassis alone weighs more than my Systemdek IIX—and the seller had attached set-up notes to various parts. I followed the enclosed notes and read the manufacturer's instructions slowly. Set-up presented no serious problems, for the VPI is really quite simple in design. Satisfied, I turned to the ET-2 arm and read the comprehensive instruction manual three times. I did not have the set-up jig, so I called my friend back in Illinois to borrow his. He sent it out that same day and I received it two days later. While I waited for the jig, I researched all the reviews I could find of the VPI/ET in the various journals. The information I gleaned from these reviews proved quite helpful in my efforts to install this table and arm properly.

Jig in hand, I went about the task of installing the ET-2 on the VPI. This was not one of the easiest jobs I've encountered. Hard-wiring the Litz leads to the backside of the female phono jacks was an exercise in frustration. But I kept with it and finally succeeded. With all the wiring out of the way, I settled down to the task of aligning the arm, hooking up the air-line and pump, leveling and realigning everything. Although the pump with my arm was extremely quiet, I set it up in a hall closet with the

air line running under the house, coming up through a small hole in the floor directly beneath my equipment stand. The prior owner of the VPI had installed an on/off switch for the pump in the table base. This was a great convenience: I could turn on pump and table at the same time. A small, red LED installed in the acrylic top-plate let me know when the pump was on. Clever! I didn't want to risk damaging my Talisman S during final alignment, so I installed my "budget" Grado in the extra arm-tube. If I was going to wreck a stylus or cantilever in this phase of set-up, better it be a cheap one.

The precise alignment of the ET-2 arm was made easier by its thoughtful design. Each parameter of adjustment can be easily and quickly made with just a small Allen-wrench. As I was making the final tweaks to the arm, I came to agree with the rave reviews and praise given this product in various journals. I have never had the pleasure of using such a well-finished, well-designed arm. I would like to mention the courtesy and helpfulness of ET's Bruce Thigpen, whom I contacted several times. He answered my rather naïve questions patiently and advised me of future upgrade possibilities. Likewise, Harry Weisfeld, in extremely gentlemanly manner, did all he could to ensure my used VPI Mk.II was operating up to spec. I still marvel at his record-clamping system. It is simple and effective, turning *every* record into a flat one.

Needless to say, my initial fears over buying used high-end gear (especially turntables and tonearms) via mail-order were allayed. I felt good about my purchases and was reassured, after talking with Bruce Thigpen and Harry Weisfeld, that there still were manufacturers out there who stand behind their products. I have read all too often the horror stories of consumers' relations with certain manufacturers. Component reliability, customer service, and manufacturer accessibility are important issues in high-end audio. It depresses me when I hear of the lackadaisical attitude of some manufacturers toward their customers. To my way of thinking, this is indefensible. After all, we, as music lovers, to some extent pursue the muse to escape the common and parochial attitudes we have to deal with every day. We audiophiles are a strange breed (if you don't believe me, ask a non-audiophile) and are caught up in a maniacal quest for the "perfect" sound, whatever

² Guy has only been writing for the magazine for four months and already he's treating a turntable upgrade as a Number-One Priority. Draw your own conclusion, all you readers hanging onto Technics SP-10s and Kenwood KD-500s for sentimental reasons. —JA

that might be. In this quest we need all the help we can get, especially from manufacturers. We need more men like Bruce Thigpen and Harry Weisfeld in this industry.

The sound of my VPI/ET exceeded my expectations. I had transformed my system, in one fell swoop, from a pleasant-sounding "hi-fi" into an instrument for reproducing music. The extraneous noises and colorations I had previously adapted to vanished. There was much less intrusion of extra-musical elements into the aural experience, which allowed more of the music through. Bass went lower, with more tautness and better pitch definition. The highs were airier and extended. The midrange was brought to life, and instrumental timbres were rendered naturally. The sense of the recording venue was conveyed with solid ambient clues (if the recording had captured them in the first place), and the soundstage was broader, deeper, higher. Overall system resolution increased dramatically, and I could "see" deeper into the music and pick out fine details of the performance heretofore obscured. One of my favorite soundtrack albums, *The Mission* (Virgin 90567-1), has become a much more intimate and involving experience for me. I feel

closer to the intent of the composer and performers. I realized, shortly after making this front-end upgrade, that I had suddenly acquired a new record collection.⁵

If you, like me, cringe at the escalating prices of high-end audio, I urge you to investigate *Audiomart*. You may be surprised at what you'll find. \$20 gets you 12 issues, and I am confident you will not be disappointed. Your subscription also enables you to run free personal ads so you have the opportunity to get rid of gear you no longer want. *Audiomart* can be reached at P.O. Box 223, Crewe, VA 23930, Tel: (804) 645-8816. Incidentally, more and more ads for records are appearing in *Audiomart*. This may be your chance to find that copy of *Casino Royale* you've been searching for all these years. Check it out. I'd also like to hear from our readers of *their* experiences in buying used, mail-order audio equipment. Now, if I can locate my copy of issue #185 and that ad for the Monster Alpha Genesis 1000. . .

—Guy Lemcoe

⁵ You see, gentle readers, all *this* was a result of a turntable/tonearm upgrade. See footnote 2. Absorb the moral of Guy's tale. Get rid of that Kenwood; junk that Sony; put that Technics out of its misery! —Ye Editor.



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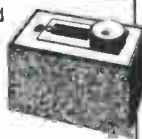
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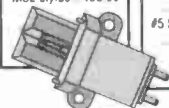
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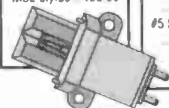
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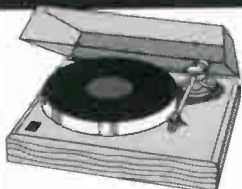


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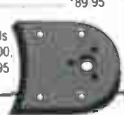
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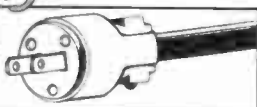
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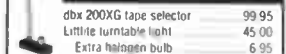
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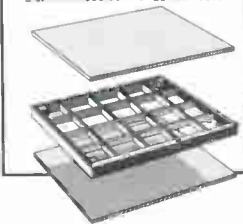
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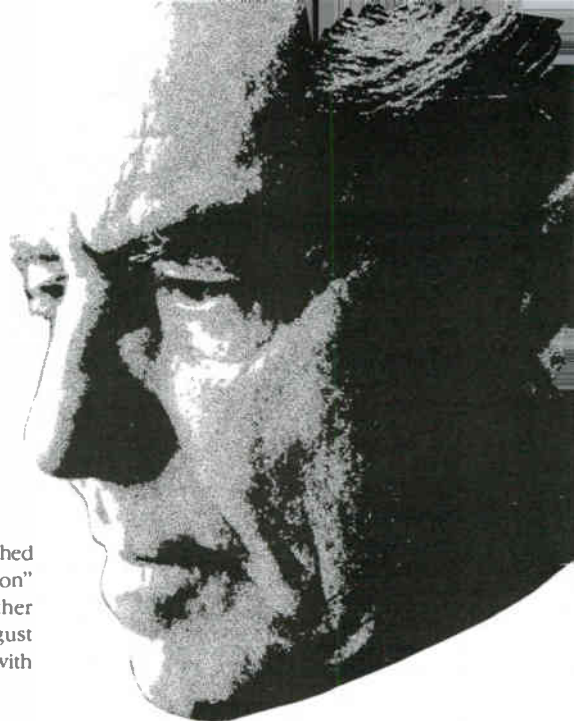
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HERBERT VON KARAJAN (1908-1989)

Of Greek-Slavic descent, well-established in Austria with a hereditary title ("von" indicating that his great-grandfather had been honored by Duke Friedrich August of Saxony), Herbert von Karajan could say, with the English poet Walter de la Mare:

*When music sounds, all that I was I am,
Ere to this haunt of brooding dust I came.*

His forbears were distinguished men in scholarship and medicine, with more than a touch of music and theater in them, so that his upbringing, unusually happy for a World War I child, gave him discipline, sensitivity, and musical talent far beyond the average. What a character! To a distant streak of stoicism he owed his self-control and his fervent devotion to a demanding art; his instinctive feeling for color and rhythm came from an old central European tradition. When he met the brooding dust of the postwar world, he rose above it, at first hesitantly but then with determination and triumph. He believed that the Creator chose people as His instruments to produce some beauty in an all-too-ugly world, and he knew that since his gifts derived from that source, his duty was to exploit them to the fullest. That is why he was a driven man: a man with an insatiable thirst for absolute perfection, and an inexhaustible energy to ensure that this perfection would reach as many people as possible.

Much has been made of Karajan's political sympathies in the 1930s, and of his membership in the only party open to a German or Austrian of that time. But there is no more evidence of his approving the misdeeds of Nazi leaders than there is of Mascagni's endorsement of Fascist ideals, or of Prokofiev's allegiance to Soviet

terrorism. A musician in any country, especially during wartime, is obliged to be part of the system; for if he declines, such prizes as are available will be withheld from him. This happened to Karajan in 1941 when he was relieved of his post as General Music Director at Aachen on the grounds of too-frequent absence. The real

Denis Stevens,
who played under HvK in
the Philharmonia Orchestra,
recalls the Maestro

reason? He was courting a slightly Jewish lady who later became his second wife. From 1942 until 1945 he was obliged to go into hiding in Italy, where later on he gave concerts for the occupying British army at Trieste in return for safe conduct back to his parents' home in Salzburg. From then on, until officially cleared by the still squabbling Allies, he was forbidden to conduct and almost starved.

Little wonder that he then formed an ambition to achieve far more than seemed humanly possible, and to leave us a legacy of recordings ranging from shellac discs through CDs and a collection of filmed concerts and operas suffi-

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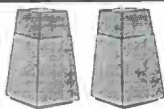
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cient to satisfy the most broad-minded collector. His repertory was generally wide, embracing Bach, Handel, Corelli, and Vivaldi at one end of the spectrum, and as far as the Second Viennese School, Stravinsky, Bartók, Holst, and Honegger. He possessed a remarkable memory, absorbing symphonic and operatic masterpieces with a detailed thoroughness that stood him in excellent stead in later years. He was never in a hurry. He refrained from performing music he had insufficiently digested, and refused appointments until ready to assume full responsibility for them. While waiting for the Berlin Philharmonic conductorship to fall vacant, he busied himself with the Philharmonia, and it was in London that he made his debut with his fledgling orchestra in April of 1948.

Walter Legge, founder of the Philharmonia, was in an excellent position to build up its strengths and assure steady recording and concert work. His German was as fluent as his English, and it was in Vienna two years before that he had first heard Karajan and made a tentative contract with him. Within a short time Karajan became principal conductor, besides developing his contacts with Milan, Vienna, Berlin, and Salzburg. Each man needed the other, for Legge was an extremely rude but powerful producer who stopped at nothing, while Karajan was further sharpening an already formidable technique and pursuing perfection in an almost ruthless manner.

It was nothing for an entire session to be given up to achieving a perfect balance, or for ten sessions to be spent on a Mozart Divertimento. A Tchaikovsky Fourth made at this time owed its full-throated opening fanfare to Legge's standing the four horn players on chairs with their backs to the conductor, so that the bells would face the microphones. At a Royal Albert Hall concert not too long afterward Karajan faced away from the orchestra, closed his eyes, and dropped his hands very slowly for the opening of the "Pathétique." But he was a trainer second to none. "When you have to play a pizzicato with a woodwind chord, wait until you hear it start; you will be quite soon enough," he would say; and in praising the almost unbelievable unanimity of the "royal family" (the quartet of principal winds), he once asked them how they managed it. "We sleep together, Maestro," answered the burly bassoonist.



Berlin 1939, DG session

The often grim, craggy face slowly learned how to relax. Legge was yelling at him one afternoon through the intercom, and Karajan, undismayed, held the telephone as far away as possible, uttered three words ("His Master's Voice!"), then let it drop on the floor. On another occasion, to attract the incorrigible producer's attention, he let fly with a wolf-whistle that brought him running at once. On the whole, however, it was a happy and productive collaboration which projected Karajan's career into international orbit. The year 1955 was decisive, for he toured America twice: in the spring with the Berlin Philharmonic (when the conductorship was offered and joyfully accepted), and in the fall with the Philharmonia. He was moving into loftier spheres, but continued working with EMI and made many operatic recordings which have never been surpassed, especially *Così fan tutte*, *Hansel und Gretel*, *Ariadne auf Naxos*, and *Der Rosenkavalier*. His sensitivity as a vocal accompanist was legendary, for he breathed with his singers and molded their interpretations in his piano rehearsals, yet constantly gave them the impression that they alone were responsible for the effects they produced.

When he began to record for DG in 1959, a new era opened for him and for the orchestra. He had already initiated a process of gradual replacement and renewal among the personnel, which in course of time was to refine and

redefine the color, range, and dynamics of the entire orchestra. A subtle procedure in auditions and trial periods ensured that new artists were absorbed into the ensemble in such a way as to fulfill what Karajan sought most of all—a wonderfully responsive, infinitely flexible instrument which represented a sound-ideal that had coursed through his veins for decades. The Berlin Philharmonic of the 1960s was a spinoff from his growing personal fleet of high-tech transportation: fast cars, yachts, and executive jets. A casual listener might well be excused for thinking that he had only to turn on the automatic pilot for the orchestra to play by itself, which it undoubtedly did most of the time since he continued to conduct with closed eyes.

There was of course a price to pay, even though his vastly growing public cheerfully paid the price for the 150 million records he made. Perfection to some extent defeated its own end, and not a few critics and critical listeners detected a lack of spontaneity, of differentiation, or of personality in his renderings of the great classics. His performances and records were so carefully prepared that there was no room for last-minute inspiration. The final rehearsal was better than the performance, as it was also in the case of lesser orchestras and conductors. When all tension has been removed from the interpretation of a work, it cannot be expected to engender tension among the audience, so that what they applauded was the spectacular rather than the spiritual.

His methods are fairly well-known even though his rehearsals were mostly closed to the general public, for DG issued records of his arduous preparation for the recording of Beethoven's Ninth in the early 1960s. Analyzing the problems of the cello-bass recitative in what sounds like an orchestral seminar, he tells his men: "Half the effect is lost if you cover it with a dull grey deposit. . . the most important thing is beauty. . . impressive but beautiful. . . once more, forte but lyrical!" He never threw tantrums, never argued. Only once did I hear him raise his voice, and that was in 1966 when I interviewed him in a series of video programs called "The Art of Conducting." We were in the Studios de Boulogne, south of Paris, and the renowned director Henri Clouzot was in charge. The entire Berlin Philharmonic had been flown over for sessions featuring Dvorák's

"New World" Symphony. At one point members of the orchestra were talking to each other, reasonably quietly as I thought, but suddenly there was a thunderclap "Rube!" from Karajan, and in the ensuing silence you could have heard a plastic mute drop.

He was an indefatigable worker throughout his nine-times-nine years. As a young director at Ulm, he had the unenviable task of teaching the long and complex role of Baron Ochs to a bass who could not read music. After hundreds of hours of rehearsal, he succeeded. For the BPO's 1970 tour, he arranged weeks of rehearsal for Beethoven's Ninth alone, although it was far from being their first performance of the work. Striving for perfection and total control came as second nature to him, for he knew at an early age that he was not here to take orders from others. In his opera productions in Milan, Vienna, New York, and Salzburg he insisted more and more on direction, which often worked out extremely well, and on lighting (or, in the case of the *Ring* cycle, "darking"), on which he would spend countless hours of detailed work. Like many self-made men, his search was for ultimate independence, and he achieved this in 1967 with the Salzburg Easter Festival, which he planned and financed himself, thanks to the enormous sums he was receiving from fees, record royalties, performances, tours, and films made by his own companies. He recorded more than 40 concert and opera programs for video, and they are either currently available or due to be released on videodisc.

It was not only the small-town German and Austrian houses where all opera was sung in German. Even Vienna followed the custom until Karajan began giving Italian operas with Italian singers, prompters, and producers, often with considerable opposition. But he knew how to get his way, and made the maximum use of political power to achieve his aims. His fluent Italian helped a great deal, as did the excellent French he had acquired, especially after his marriage to Eliette Mouret. He gave Vienna a memorable *Pelléas et Mélisande* in the early 1960s, but held off recording the opera until he had reached his 70th year. It was the outcome of extensive thought and study, representing the culmination of his lifelong love-affair with French music.

Karajan now has many rivals in the ability to make fortunes, and as pillars in the power struc-

ture, but as musicians they are light-years away. His memory, far greater than Toscanini's, less catholic than Beecham's, was a central feature of his multi-faceted talents. He has probably done more for the art of music than any man before his time, and has set a record that will not easily be equalled, let alone broken. His rugged appearance effectively hid a musically sensitive nature, and he was often kind and considerate toward his younger colleagues. A great nature lover, whether it was the warmth of an Italian spring, the purity of a snow-clad peak, or the cloudscapes familiar to jet pilots, he took his sports as seriously as his art, although (as many have pointed out) music was for him a mission rather than a profession. He detested vulgarity, led a very private kind of life when he could, and was devoted to his wife and two daughters. He never forgot a kindness shown by others, and when the city of Lucerne invited him to conduct at the international festival for the first time in 1948, he visited them annually thereafter, occasionally thrilling the inhabitants by arrival at the Festspielhaus in a police-escorted motor launch three minutes before the concert was due to begin. I have one photo of him sunning himself at the Strandbad,

and another (seated next to Walter Legge) applauding Dennis Brain's virtuoso performance on an alphorn in 1954. He undoubtedly had his lighter side, although few caught a glimpse of it.

Among records still to be released are Verdi's *Un ballo in maschera* (his first recording of the opera) and Bruckner's Seventh, both with the Vienna Opera; Bruckner's Eighth and Schumann's Fourth, with the Vienna Philharmonic; Brahms's Third and Fourth Symphonies, and the Tchaikovsky Piano Concerto (Yvgeny Kissin), all with the BPO. DG's special catalog to celebrate his 80th birthday may soon become a collector's item, including as it does tributes from musicians from all over the world and a special edition of 25 CDs issued as an overview of his career.

"Agmen claudit mesochorus consummatus, Salisburgii natus . . ." (A consummate conductor ends our procession, a native of Salzburg), said the Public Orator at Oxford University on June 21, 1978, when Karajan went there to receive, in his cloth-of-gold gown, the honorary degree of Doctor of Music. Rarely has so great a distinction been so well and truly earned. **S**

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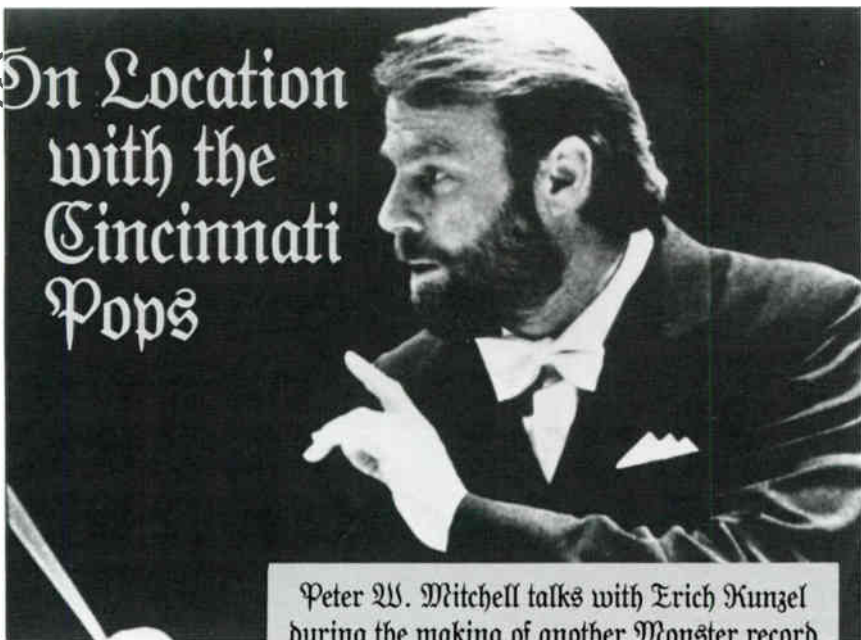
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On Location with the Cincinnati Pops



Peter W. Mitchell talks with Erich Kunzel during the making of another *Monster* record

If the Post Office has done its job well, you will have received this issue within a few days of Halloween, the holiday of ghosts and goblins. To celebrate the season, Telarc has released a Cincinnati Pops recording of music with demonic associations, ranging from Mussorgsky's "Night on Bald Mountain" and Saint-Saëns's "Danse Macabre" to themes from films and TV shows (Frankenstein, Psycho, Poltergeist, "Twilight Zone," and "Alfred Hitchcock Presents").

Telarc's recordings of light classical and film music, especially those featuring Erich Kunzel and the Cincinnati Pops, have been consistent best-sellers because they combine appealing music with spacious and powerful recorded sound. They are also among the most-played (some would say overplayed) demonstration recordings at Consumer Electronics Shows, in hi-fi showrooms, and in the homes of audiophiles showing off—or testing the limits of—newly purchased loudspeakers. The *Chiller* album was recorded during Halloween week-end last year. *Monster Cable* (appropriately!), whose interlink and loudspeaker cables were being used by Telarc for the sessions, flew writers from *Stereophile* and two pro-audio magazines to Cincinnati to observe the pro-

cess. The Pops performed the music in a Chiller concert on Saturday night, for which both the orchestra and the audience dressed up in costumes—some appropriate to the occasion (Frankenstein masks, fright wigs, conical witches' hats) and some not (orange hair and clown suits).

As the house lights dimmed, a pipe organ gradually became audible, sounding the ancient Dies Irae death anthem while ghostly images flitted about the darkened auditorium. Lucifer rose out of a smoking pit, costumed in red satin with a long pointed tail, and revealed himself to be conductor Erich Kunzel, waving the devil's forked trident instead of a baton. Some of the music was augmented by ballet and pantomime, featuring performers from a local acting school, including one actress made up to resemble Elsa Lanchester in *The Bride of Frankenstein*.

On Sunday the orchestra reassembled in casual clothes to perform for Telarc's microphones. The classical repertoire was recorded on Sunday and the movie/TV music on Monday. Most of the music on the disc was recorded in just one or two complete takes. For the longest and most complex work (the Mussorgsky), two complete performances were

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The orchestra on-stage in Cincinnati's Music Hall, ready to record.

recorded, followed by about two dozen re-takes of a difficult section near the end where the musical line is tossed back and forth among various instruments entering in groups of two of three. Slightly mismatched entrances might go unnoticed in a live concert, but for the record, producer Robert Woods and conductor Kunzel insisted on redoing those entrances until each phrase had the correct ensemble timing, rhythm, and pitch.

While the orchestra tuned up for the Sunday session, the visiting writers spoke with Erich Kunzel in his backstage office.

Peter W. Mitchell: How many records have you made for Telarc?

Erich Kunzel: Twenty are out now. All except two (*The Stokowski Sound* and *Wellington's Victory*) have been on *Billboard's* best-seller charts. That's a record; no other orchestra has even come close.

PWM: You're not likely to run out of program material. . .

EK: Oh no, we've got projects already outlined for the next five years.

PWM: Under a contract?

EK: I'm on an exclusive ten-year contract with Telarc (until 1998), and the orchestra has a renewable five-year contract. It specifies a minimum of three recordings a year; currently

we're doing five each year. We play every program in concert first, so that rehearsals aren't paid out of the recording budget. The Cincinnati Pops plays about 30 concerts a year. We have to schedule recordings about a year in advance in order to mesh them with our concert schedule and make everything come together at the right time—soloists, scores, etc. **PWM:** How long have you been conducting here?

EK: I've been with the Cincinnati Symphony since 1965, and with the Cincinnati Pops since it was formed in 1977. They are the same orchestra; only the name and conductor are different. The Symphony, conducted by Lopez-Cobos, also records exclusively for Telarc.

PWM: You used to record for Vox/MMG as well.

EK: Until about 1982. Those recordings are still available, but we're already planning to re-do some of them for Telarc. For instance, we'll do the complete *Gaité Parisienne* of Offenbach; the earlier recording was excerpts only.

PWM: And there was a wonderful Vox disc of Sousa—

EK: *Peaches and Cream*, which took me months of research in the Library of Congress to prepare. That was historic, because it showed the other side of Sousa—his waltzes and overtures.

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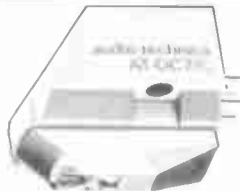
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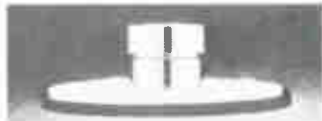
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The orchestra seen from the back. The infamous Telarc bass drum is not unusually large, but it is optimally placed at stage center, facing front, and is struck from the back so as to produce a solid positive-pressure 38Hz wavefront in the hall. In contrast, the Boston Symphony's bass drum is often mounted sideways on the stage; consequently, both the compression wave off the front skin and the rarefaction wave from the rear reflect off the stage walls and propagate out into Symphony Hall together, partially cancelling each other for listeners in the center of the hall.

He wrote 13 operettas, but people only think of his marches.

PWM: *How did you choose the repertoire for the Chiller concert? Was it worked out in conjunction with Telarc?*

EK: Sometimes it's a joint decision, sometimes only me. In this case the classical selections

everything these days. *Pops Roundup* did so well that we're doing a second *Roundup* disc. We followed *Star Tracks* with *Time Warp*, and *Orchestral Spectaculars* followed *Symphonic Spectaculars*. There will be a second *Straussfest*, two more Hollywood albums (one of love songs and one of blockbusters), another disc of overtures, and so on. Our aim is to be as diverse as possible. We've done a Tchaikovsky disc, an all-Copland record with Katherine Hepburn, a Western album, a Strauss album, *Star Trek*, *Grand Canyon Suite*, *Porgy and Bess*, marches from Elgar to *Rampart Street*, Gershwin (the original version of *Rhapsody in Blue*), *The Sound of Music*, and a Disney album.

PWM: *What does this mean to you as a conductor?*

EK: Work! But I've always loved making recordings. It's a matter of pride to me that what we've accomplished here in Cincinnati is preserved forever—especially with the digital process, which has been used for all of our recordings. What we're doing here will be available for generations. True, the work of earlier conductors—Toscanini, Bruno Walter, Arthur

It seems we have to do a
Volume Two of everything
these days.

were rather obvious. We left out "Sorcerer's Apprentice" because we've already recorded it on our "Orchestral Spectaculars" disc. Of course there is a lot of related repertoire among modern movie/TV stuff that we could do—*Dracula*, *Journey to the Centre of the Earth*, and so on.

PWM: *Do you foresee a Volume Two?*

EK: It seems we have to do a Volume Two of

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Fiedler—is being re-released on CD; but if it was recorded tinny, it still sounds tinny.

PWM: *Many observers regarded you as the logical successor to Fiedler at the Boston Pops; so in career terms it looked like a disappointment when you didn't get that job after Fiedler's death. Ironically, if you had gone to Boston you probably wouldn't have your present success, because you would be recording for Philips. Thanks to the Telarc recordings, Cincinnati has replaced Boston as the best-selling Pops orchestra.*

EK: I announced at the time that I didn't want the job, because I didn't want to follow Fiedler. Anybody who follows a great person has a hard time. Sir John Barbirolli followed Toscanini at the New York Philharmonic and was a flop. Boulez followed Bernstein; he was a great conductor but another flop. I wanted to make my career on my own terms, without hinging it to the Boston Pops, and the opportunity existed here in Cincinnati.

PWM: *As for differences in sound, do you use different arrangements from other Pops orchestras?*

EK: I do some myself, and we commission many. You'll notice, for example, that the Boston Pops doesn't use electronic instruments in its recordings; we do. In pops material we use electric piano, Fender bass, or a synthesizer where appropriate. For instance, we perform the original version of the "Twilight Zone" theme, with two electric guitars. So we do have a different sound from other Pops orchestras.

PWM: *What do you think of the acoustics of the Cincinnati Music Hall?*

EK: The best. This is more than half of the secret of our success. It's a very rounded, very beautiful sound, and Telarc knows how to capture it. One of our trumpet players used to be the principal trumpet of the Boston Pops; he says that it's very difficult to record Pops material in Symphony Hall. It's so live that the recordings come out too brilliant, lacking warmth. Our hall has tremendous warmth. And from our first recording with Telarc (*1812 Overture*), they've used those three microphones out front to capture that big sound (except for special projects like the *Big Band Hit Parade*, where about 25 microphones were used).

PWM: *When the concert started last night, I immediately recognized that bottom-heavy Telarc sound, live in the hall. Even the bass*

I was a bass player in college, and when I conduct I think harmonically from the bass up.

drum has much more punch here than, for example, in Boston's Symphony Hall.

EK: We have good bass-frequency response in this hall. It brings out that warmth; but all the highs are still there, just floating. I was a bass player in college, and when I conduct I think harmonically from the bass up. For instance, in the brass I think of the tuba first. If you establish the sound from the bottom up, everything else falls into place. The highs—the piccolos and so on—are going to get there anyway [*points to the audience*].

PWM: *Robert Shaw balances a chorus the same way, building on a bass/baritone foundation. You'll always hear the sopranos, regardless.*

EK: Yeah, no matter what.

PWM: *The Chiller concert, with the orchestra made up and costumed, would have been a great video presentation for PBS if only it could have been taped.*

EK: I agree. We're not equipped to do that yet, but we're getting into it. Our televised concerts won't look like the Boston Pops, though. That old-fashioned visual style—just showing the oboe player and then somebody else—was fine 25 years ago, but we're going to have a lot of graphics and visuals.

PWM: *On another subject: one of my pet peeves about records, especially CDs, is the skimpy program notes that don't provide enough background information about the music. Telarc is the great exception, with remarkably thorough booklets. When I reviewed several recordings of Tchaikovsky's Nutcracker, Telarc's booklet was miles ahead of the others; it really told what's going on in the music. The others didn't.*

EK: We're fussy about this. For instance, the leading authority on big-band music is George T. Simon; he wrote a book. So we got him to do the notes for our big-band album.

PWM: *Some of your recordings are now being issued on cassette tape as well as CD.*

EK: Eleven so far. Originally Telarc didn't want to do tape because it was inferior. They thought,



Gary Reber of Monster Cable (left) thanks conductor Erich Kunzel for the *Big Band Hit Parade* album.

if somebody wants it on tape, they can copy the disc. But most people don't do that; it's a nuisance.

PWM: *Despite what the RIAA says. . .*

EK: It's ironic. Now that we have our stuff on cassette, people can play it at the beach, in the car, whatever. All these years that we've been on the *Billboard* charts we were only on CD, even though we were competing with recordings in all three formats. We're now going backwards: since many music-theater (Broadway) buffs are sticking with the LP, we've issued *The Sound of Music* on LP, and our *Big-Band Hit Parade* as well. But no others.

PWM: *Do you have any special working arrangement with Jack Renner?*

EK: Since we don't spot-mic the orchestra in sections, we don't need anything special. All the balancing is done on the podium, by me. For instance, for a movie theme where we wanted the celeste to stand out, we simply moved it forward on the stage, closer to the mics. Soloists, like a singer or the pianist in a concerto, are also picked up by the main mikes. Exception: when there's an electric guitar, we feed it straight into the board. Jack sets his mic levels while the orchestra is warming up, so we don't need to waste the orchestra's time with a balancing session. When we work with a chorus they are in the auditorium, facing the orchestra, so that everything is picked up by those three omnidirectional mics along the front of the stage. The great thing about working with Jack Renner is that I'm in control.

We don't spot-mic the orchestra in sections, all the balancing is done on the podium, by me.

What you hear on the record is what I heard at the podium. With other record companies, the conductor is not in charge. Here, once we start recording, Jack doesn't dicker with the dials; he could go out for a beer. We don't have a nudnik in the control room saying, "let's have more second violins here, and then more of something else. . ."

PWM: *How were the mic positions selected?*

EK: For our first recording, Tchaikovsky's *1812 Overture*, Telarc experimented during the week while we were rehearsing. The mic positions have remained essentially the same ever since—about a decade. For Pops repertoire with a lot of brass, Jack lowers the mics a fraction to enhance the strings; for classical repertoire they go back up.

PWM: *You record a lot of material that hasn't been in the standard Pops repertoire. Is it difficult to get access to the scores?*

EK: Particularly with some of the Hollywood stuff. For instance, we searched everywhere for the *Pollitzergeist* score; nobody had it, not even Jerry Goldsmith, the composer. Finally somebody found a piano reduction in a back room. Using that and the soundtrack record as a guide, we reconstructed the orchestral score ourselves. In the case of the "Krypton Fanfare" from *Superman*, the original soundtrack was recorded in London, and the orchestral parts were a mess. Fortunately John Williams still had a Xerox copy of the score in his attic, and he dug it up for us.

The film of *The Sound of Music* starts with nuns singing in an abbey and jumps to Maria singing on a hilltop; for the record I wanted a sound for that transition. I found the original orchestral parts in the Library of Congress and discovered that Richard Rogers had actually written eight bars of "nature music" for that spot! It wasn't used in the Broadway show or in the film, but it's in our record.

PWM: *Are you especially fond of movie music?*

EK: Yes, but I like all types of music.

PWM: *Your first three Telarc recordings were of classical music, but in recent years the bal-*

ance seems to be weighted heavily in favor of movie/TV music and other pop repertoire. Do you plan to continue that trend?

EK: We aim for a balance. For example, two-thirds of this Chiller Concert is classical, as was all of the *Symphonic Spectaculars* disc. We just did a Mancini album, which will get us played on radio stations that specialize in the "easy listening" market. The Disney album is our first for young people, but it appeals to all ages; and we're planning our first Christmas album. We'll be working more with Doc Severinsen, but we have to be careful not to do too much jazz. We want to do a Beatles album, but in order to avoid a Muzak-ish sound we've engaged a rock-'n'-roller to help us, Christopher Brubeck (Dave Brubeck's son). We want to hit every possible market.

PWM: *Who are your musical heroes?*

EK: Pierre Monteux is my hero. He was my teacher, a wonderful person and a great humanitarian. He was a walking part of history. He was in a string quartet that played in Brahms's house in Hamburg! He conducted the premieres of the Ravel and Stravinsky ballets in Paris in the early part of this century, was music director

We're in this business to make money! If it won't sell, we won't record it.

of the Boston Symphony in the '20s and of the London Symphony when he was 85. I was fortunate to be his assistant in London.

PWM: *Do you have any ambition to record music that is out of the mainstream—Mabler symphonies, for instance, or obscure music by avant-garde composers?*

EK: We're in this business to make money! If it won't sell, we won't record it. Seriously, I love to conduct Pops music. It's a very broad field—ballet, music from opera, big-band, Broadway, rock, jazz, they're all Pops. Remember, Pops is a diminutive of "popular." From a Pachelbel canon to rock'n'roll, as a conductor of Pops repertoire I can do anything I want, and I have a lot of fun. **S**

To follow: a companion interview with Jack Renner, discussing Telarc's recording procedures and equipment.

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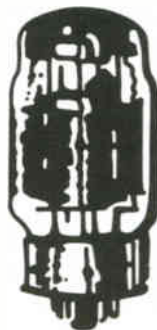
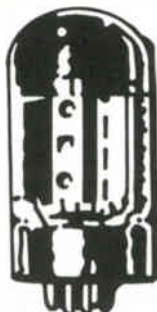
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Simon Estes, bass; New Philharmonia Orchestra, Gaetano Delogu

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SAMUEL RAMEY: Opera Arias

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JAMES MORRIS: Opera Arias

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Stars, superstars, possible stars; today's favorites, tomorrow's replacements, perennial favorites. And all these on only eight CDs—a veritable world of opera. At times I got the feeling that we were living in another Golden Age, at other times I thought it was all too dull to bear. But, as they say, it ain't over 'til—oh, never mind.

I realized while listening to these discs that recitals by three basses have never before come my way at the same time. Are these the “new” Chaliapins, Kipnises, and Journets? The new Christoffs and Ghiaurovs? Hotters? The answer is a decided “I doubt it, with an exception.”

Beginning with the least successful recital, we arrive at **Simon Estes'** tedious disc of Verdi arias. This Zürich-based American is better known as a Wagnerian—I've found his Dutchman convincing, his Wotan ungodly. He sings with great regularity in most of the world's major opera houses. Listeners hearing him for the first time here would be hard pressed to figure out why. This disc makes it clear that Estes is neither at home with the Italian language nor the Italian style. He exclaims, he doesn't phrase. Furthermore, although there is a certain opulence to his voice, it is not particularly beautiful and its timbre is uninteresting.

He sings arias for both bass and baritone (he's normally billed as a bass-baritone and it's clear he takes the appellation seriously), but lacks the weight for the bass arias and the brightness for the baritone selections. He has all the notes, but they sound the same. Count di Luna's “Il balen” is wooden and passionless, Renato's “Eritu” is noisy and sung with generalized feeling, and Iago's “Credo” is so dull that when he says “La morte e nulla,” the uninitiated could mistake it to mean “This dinner's lousy.” The bass selections are a bit better because the voice sits more comfortably in them, but Attila's cabaletta lacks swagger, King Philip's monolog is devoid of pain and without personal feeling, and Fiesco's ravishing “Il lacerato spirito” is shallow. The arias, their situations and characters might as well be interchangeable. Estes also has pitch problems and conductor Delogu adds to the general lethargy with uninspired accompaniment. A booklet with a synopsis of each

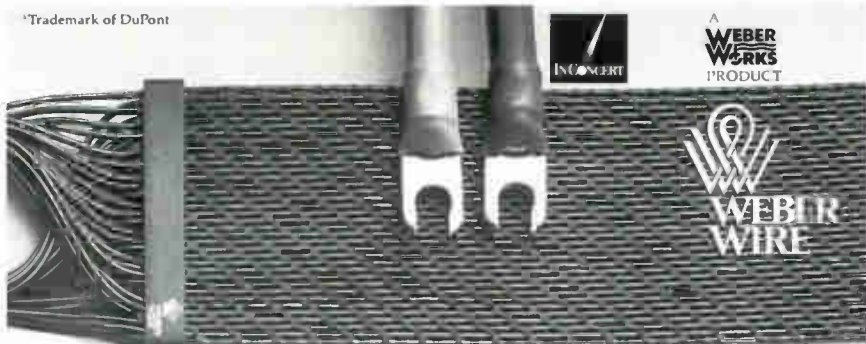
aria is included. The selections were recorded at different recording levels, and so one must continually leap up and down to adjust the volume. There's one way to avoid this problem: Don't buy this disc.

In the opera house, **Samuel Ramey**, with his dashing presence and exquisite voice, rarely fails to please. I've seen him in almost every one of his roles since the mid '70s, and am always taken by the sheer beauty of his sound, his technique, and his intelligence. He is particularly impressive as Mozart's Figaro and Don Giovanni, and in the florid operas of Rossini, where, for the moment, he is peerless. I occasionally find him a bit soulless and generalized in his emotions, and his two new EMI discs reaffirm all of these feelings.

The Rodgers & Hammerstein collection, which includes songs from *Carousel*, *The King and I*, *South Pacific* (both of de Becque's and Lt. Cable's), *Pipe Dream*, *The Sound of Music*, *Oklahoma*, *Flower Drum Song*, *Cinderella*, and *Allegro*, is certain to enrage admirers of the American musical stage. Ramey is as American as the idiom itself (he's from Kansas), but he makes the mistake that opera singers most often make: he over-articulates and under-emotes, and sounds anywhere but at home. José Carreras, on the weird CBS *South Pacific* (MK 42205), sounds far closer to the character of de Becque than Ramey does, even with the music transposed up a third, and Ramey inexplicably omits the rising, *pianissimo* conclusion to “Some enchanted evening” on the word “go,” thus flattening the song like a board. Certainly he *has* the required D—he rises way above it elsewhere. Ramey's “Younger than Springtime” is completely unenthused and without wonderment—just listen to Mandy Patinkin's glorious singing of it on CBS to hear how it *should* sound. Ramey seems incapable of introspection—he sounds simple.

He also can't get a handle on the “inspirational” songs. “You'll never walk alone” is almost guaranteed to stir the blood, but here it fizzles; and “Climb ev'ry mountain,” in Ramey's reading, sounds like the response to a request for directions. Bland city. Both “The surrey with the fringe on top” and “Oh, what a beautiful mornin'” fare better—they're direct and energetic—but they still sound like the singer is out of his element. “I have dreamed” is devoid of reverie; “June is bustin' out all over” should not be sung by such a voice. There are no attempts at characterization in any of the songs; they're all out of context. I don't object to this *per se* if each is treated as a small personal drama instead, but there's none of that here either. Should I go on? I doubt it. I'm not denying that the vocal production and smooth-

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ness of delivery are admirable, but there's no adventure. This is white bread slathered with mayo, and Ramey and arranger/conductor Peter Matz should be ashamed of themselves. A surprising failure.

Ramey's disc of opera arias is somewhat better. The program is fabulous—unhackneyed, varied, and generous. The voice rolls out like San Francisco's fog rolls in—impressive, seemingly endless, and surprising. Once again, I find too much of it faceless, although I can pretty well pin much of that on Jacques Delacote's lackluster conducting. It really isn't enough for a bass to boom out Don Basilio's words in "La calunnia" from *Il barbiere di Siviglia*; the orchestra must sound like it's having fun, there should be some playful conspiracy in the strings. Similarly, Mefistofeles' serenade from Berlioz's *La Damnation de Faust*, no matter how well articulated the singer's attitude, can fall flat if the orchestra refuses to strut with the singer. Delacote, I fear, is a hack—just listen to the way he rushes through King Philip's "Elle ne m'aime pas" for real insensitivity. There's no room for sorrow.

Elsewhere, Ramey comes close to carrying the arias all by himself. Silva's aria from *Ernani*, a total washout on the Estes disc, is vibrant here, and the inclusion of the cabaletta strengthens the portrait. The rarities from Rossini's *Le Comte Ory* and Meyerbeer's *Robert le Diable* are not only welcome, they're gorgeously sung, and Alfonso's aria from Donizetti's *Lucrezia Borgia* has great energy: these are object lessons in bel canto delivery. "Il lacerato spirito" finds the bass blinding out with the conductor, or rather, being defeated by him. A pity. Selections from *Nabucco* and *I vespri siciliani* are glossed over as well—these, like the *Don Carlos*, are arias on epic subjects; Ramey and Delacote underplay them.

What to say? The singing *qua* singing is beautiful, the artistry incontestable. Ramey needs strong leadership; I've heard him knock the socks off an audience. Here he succeeds despite both his own and his conductor's lack of passion, but only intermittently. I wish the powers that be had seen fit to include some more of his coloratura, razzle-dazzle repertoire—it never fails to please. The sound is rich and full as it is on the Rodgers & Hammerstein disc, and the balances are realistic: all one could want, sonically. The accompanying booklet (which won't fit back in the case after it's been removed) contains an uninformed and uninformative essay on basses, Ramey, and the arias, as well as texts and translations.

Just when I had almost given up, bass-wise, along came the **James Morris** recital, and it lives up to this bass's current reputation. Mor-

ris's apprenticeship has been long and he has learned well, having sung an enormous variety of roles, from Don Giovanni to *Hoffman*'s four villains. Until now the most under-recorded bass of his generation (bass soloist in the Duruflé, Mozart, and Fauré Requiems and two brand-new *Walküres*), Morris's first solo disc was worth waiting for.

It contains five Verdi arias: the *Ernani*, *Don Carlo*, *Boccanegra*, and *Vespi* recorded by the other two basses, plus Banco's aria from *Macbeth*. His Silva is well-defined and clearly wounded (how I would have loved to hear the cabaletta here), his King Philip a towering, lonely figure (finally!), and his Fiesco finely drawn, alternating between the hatred of "O vile seduttore" and the terrible introspection of a father's grief. His Banco and Procida are a bit all-purpose for me, but that's often the case when these arias are performed outside their operas.

Morris's Verdi singing is impressive. He's at his best when he can give his huge voice free rein (I recall his Claggart in *Billy Budd* at the Met years ago; the sheer sound was terrifying in its size and darkness), but he also knows when to hold back. His sense of legato, the simple knowledge of how notes go together to form a melodic, dramatic line, is just what's missing from, say, the Estes recital. In general, in this Italian repertory, Morris tends to slide into notes a bit too much—it's more than portamento or legato, it's a bad habit and should be checked. But the even production, like Ramey at his best, is a gift, and he has the Verdi style down pat. And this is all the more reason for the listener to be impressed by the disc's second half hour.

After this Verdian *festspiel*, we suddenly come upon two excerpts by Wagner: the Flying Dutchman's first and the *Walküre* Wotan's last monologues. The Dutchman's scene is moody in the extreme, with variations in dynamics during the recitative which immediately let us know what we're dealing with: "Dein Trotz ist beugsam—doch ewig meine Qual!" is spooky beyond belief. The aria itself is ravishingly sung, once again with its manic-depressive moodswings in place, reminding us that there are reasons why this is rarely recorded out of context—it's simply too difficult for most basses to become so involved in 12 minutes. There is an occasional problem with pitch (similar to the one caused by his sliding in the Italian pieces), but the singer's sustained intensity more than compensates. Morris's/Dutchman's cry of "Vergebe ne Hoffnung!" will stay in my mind for months—the tragedy is all here.

I recommend a break of a minute or two before listening to Wotan's final 17 minutes; fol-

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lowing immediately after the *Dutchman*, the two selections together are almost too much to take. As Morris has proven in the opera house and on complete recordings under both Levine and Haitink, he is *the* Wotan of this generation. He is in Wotan's skin; he knows this character. And dare I say it—I somehow prefer this final scene to either of the other two. The sound of the voice remains luxurious in the extreme, but there's a stillness here which moved me even more deeply. My feeling is that Morris lacks only a few years' experience to turn him into a singing actor on the level of Hans Hotter.

It certainly doesn't hurt that Morris has the best assistance of the three basses. How different the Munich Rundfunkorchester sounds here, under Ralf Weikert! This conductor brings out the contrasts in the different scores, and carries the action of each piece along with great dramatic thrust, getting handsome tone from the orchestra. Booklet with flimsy essay, texts, and translations. Sound is superb, although at slightly too low a level at the start of the Dutchman's scene. But this is highly recommended.

Less than half of **Plácido Domingo's** new disc is taken up by Plácido Domingo, and most of his fans will feel they haven't gotten their money's worth. What they'll discover are Rimsky-Korsakov's *Capriccio Espanol* with an unidentified (!) violin soloist, the overture to von Reznicek's *Donna Diana* (just what we were all waiting for), Johann Strauss Jr.'s coloratura ditty "Voices of Spring" transposed for orchestra (talk about boring), and "O mio babbino caro" sung uninterestingly by soprano Adriana Morelli. All of these feature the New York Philharmonic and Zubin Mehta at their most energetic. But where's the beef?

Well, when he's around, for the most part, the great, ubiquitous Domingo delights. He opens with a rousing "Amor ti vieta" from *Fedora*, all 90 seconds of it. Has any tenor ever gone wrong with this aria? Domingo sings it wonderfully, though he's short on involvement—but that's obviously not the purpose of this evening's entertainment. There follows a song from Lehar's *Guiditta* ("Comrades, this is the life for me!"), sung with such verve and rambunctiousness that the voice fairly pops through the speakers. Later we get the beautiful "Cherry duet" from Mascagni's *L'Amico Fritz*, handsomely sung by the tenor and not-so-handsomely by Morelli, all of it hardly eclipsing memories of Pavarotti and Freni, let alone Tagliavini and Tassinari. The obligatory goofy version of "Granada" eventually shows up, then *Traviata's* "De miei bollenti spiriti," which has no impact whatsoever in this free-for-all context. Tosti's "Ideale" is beautifully intoned but spoiled by a soppy arrangement,

and the program closes with Gastaldon's "Musica Proibita," which sounds familiar even though it isn't. This is a shiny-sounding album for those who don't want to work too hard or must have every note Domingo records. Of limited appeal otherwise, it tends toward background music. Thrills are to be found elsewhere.

The Dutch soprano **Elly Ameling** has rarely thrilled, but I doubt whether anyone who has ever heard her has not been positively affected and enriched. She is a singer of such warmth and charm that she brings the listener close to the music with no difficulty: she never gets in the way. She also loves what she's doing and transmits that love. She sings 19 songs on her latest recital disc, ranging from Beethoven's "Ich liebe dich" to "The Last Rose of Summer" (not the Flotow arrangement, the traditional one), to a Ravel song in Greek and a Japanese song, and back to numbers by Brahms, Hahn, Massenet, Chopin, and Barber, not to mention Tosti, Schubert, and a few others. It's a delicious disc of encores.

It would be folly to single out favorites here, but I know I wouldn't want to do without Schubert's evocative "Wiegenlied," Mendelssohn's "Auf Flügeln des Gesanges" ("On the Wings of Song," the disc's apt title), or Tosti's "Aprile," which Ameling returns to its proper perspective, after so many years of having tenors over-sing it. The recital is a veritable how-to of lieder singing, despite the fact that the voice is hardly as fresh as in days gone by. But I won't carp—I'll merely be grateful for this lovely disc, and grateful, too, to Rudolf Jansen for his accompaniments and to Philips for their usual gorgeous sound. Enchanting.

If there was any doubt as to **Jessye Norman's** standing as a superstar, her singing of the *Marseillaise* on Bastille Day in Paris for their bicentennial, draped in a mile or so of French tricolor, should put that doubt to rest. She became a superstar when no one was watching, and, as Paul Anka would say, she did it her way. Her voice is uncharacterizable—it is contralto, mezzo, and soprano. She may be a *soprano assuluta* the way some feel Maria Callas and the singers of the early 19th century were—*ie*, if it's written for woman's voice, she can sing it. Indeed, at the 1982 Edinburgh festival she was slated to sing the soprano part in the Verdi *Requiem*, and when the mezzo took ill, she stepped in easily and with splendor, leaving the soprano line to another singer.

Norman has, for one reason or another—probably nothing more serious than personal taste—kept away from Puccini and Verdi (the two exceptions, besides the *Requiem*, are the latter's *Un Giorno di Regno* and *Il Corsaro*, recorded in the mid-'70s but never, to my

knowledge, sung onstage), and all the bel canto composers. She has only recently begun dipping herself in Wagner—and still cautiously. For most singers, this refusal to perform the standards would spell doom, at best a sort of esoteric cultdom. But Norman's gifts are so prodigious and she is such a riveting figure onstage that she has made people listen to Berlioz, Strauss, Mahler, Offenbach, and others whom they normally wouldn't go near. One wonders what Tosca would sound like in her throat—imperious, elegant, majestic, most likely—but as long as *Erwartung* beckons, we'll probably never know.

The items on the generous disc under consideration here were recorded during November of 1987, in various European cities: Amsterdam, Berlin, Hamburg, Paris, Munich, Milan, Brussels, and others. It's a typical Norman evening, one which could be confused with no other singer's recital. It moves from the Baroque elegance of Handel's "Lascia ch'io pianga" from *Rinaldo* to the arch-Classicism of Haydn's 19-minute cantata *Arianna a Naxos*, through Ravel and Strauss, with a generous sprinkling of Alban Berg songs (from 1907 through '25), plenty of Mahler, and a couple of roof-raising Spirituals. One is left wondering—Is there anything this voice can't do? Is there any style alien to her? Is there no part of her voice which is insecure? The answer to each would seem to be *no*.

Arianna, which opens the program, is severe and doleful in its exclamation at first, turns lyrical and imploring, then introspective and ultimately indignant and fiery. Norman fairly turns it into a mini-opera, observing its rigid Classicism but infusing the words and music with utmost dramatic conviction. She embellishes the vocal line slightly (once with an almost wayward but exciting roulade), and sells us this otherwise dreary piece wholesale. The Handel selections are handsomely rendered, although each of us will have our own favorite *other* versions, I'm sure. All of the Mahler is stunning, particularly the tragic "Das irdische Leben," the final line of which is shattering in its brutality, and, conversely, the playful "Wer hat dies Liedlein erdacht?," which is light and lovely.

The Berg fascinates, especially two versions of the same setting composed 18 years apart (and inexplicably separated by a Mahler song on the disc). Richard Strauss's "Kling" (Op. 48 No. 3) turns out to be a virtuoso masterpiece, with Norman's descendo on the final "kling" a sheer delight, and the Spirituals have to be heard to be believed: "Great Day" finds the singer flying high, ecstatically rising twice to high C, and "He's got the whole world in his

hands" is passionate enough to make the audience want to roll in the aisles (they sound as if they might). Ravel's "Vocalise-Etude (en forme de Habanera)" is the final encore, and it's as odd—and successful—a choice as the rest of the program.

I realize that I've waxed rapturous about this disc, but it really should be experienced by anyone who loves the human voice. Norman's sound gushes forth like an oil well or a geyser—it's close to miraculous. Geoffrey Parsons cannot be praised highly enough; nor can Philips's engineers, who take the edge off the live recordings and put us in the third row. There may be *too* much presence for some listeners, but we're dealing here with a singer who can eclipse the French flag, so we may as well bask in it.

Last, but hardly least, is the youngest, newest of the singers: Arkansas-born Susan Dunn. The big question is, is she the Verdi soprano we've been waiting for, the one the opera world so desperately needs? Well, I wouldn't be surprised, but she may also, judging from this recital, become something else as well.

Dunn is not much of an actress on stage, but neither were Milanov or Leontyne Price. Rather like those ladies, she prefers to color her phrases in such a way as to make the needed dramatic point. The voice itself is rich and fruity and capable of a myriad of colors. Her *pianissimi* are not quite real, they're merely gentler notes, but the effect is impressive. If she has one great shortcoming at the moment it is her discomfort with languages. She has a novice's difficulty getting around Italian; her German is somewhat better, but not much. This is a problem which can be solved; I won't dote on it, but the careful listener is certain to notice.

The program is ambitious—this is a brave singer. I can't recall the last time a soprano opened a debut recital with Beethoven's "Ah! perfido;" it's too exposed for most singers to risk. Dunn's reading is a smashing success. The opening recitative is dramatic, with some interesting plunges into chest voice (careful, but interesting), and the rondo itself is sung tenderly and with great beauty of tone. And when she lets loose in the rapid coda, she amazes with her virtuosity, right-on rhythm, and accurate pitch. More temperament and we've got Norma.

There follow three Wagner selections—"Dich teure Halle" from *Tannhäuser*, and "Der männer sippe" and "Du bist der Lenz" from *Die Walküre*. All are masterly. Elisabeth's invocation is bright and enthusiastic (Riccardo Chailly's leadership throughout helps make this disc a success), with pointed delivery and warmth. The *Walküre* chunks, though harder to convince with out of context, are also winning. The first is properly moody and the second, while lacking the real

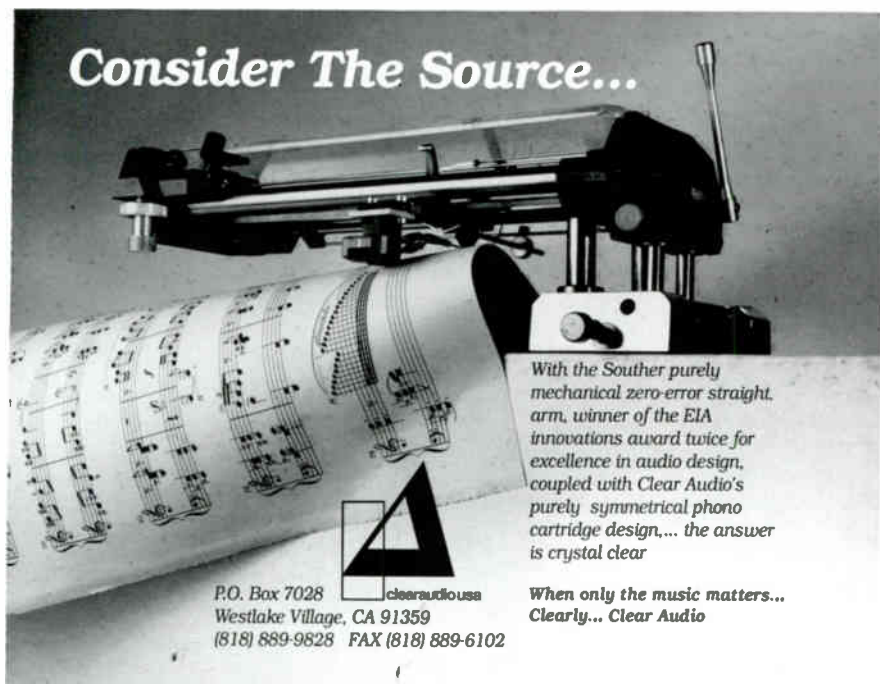
rapture it should have, makes one want to hear this singer in more Wagner. Her Elsa would be ideal, judging from this.

This brings us to the Verdian test pieces: arias from *Ballo*, *Ernani*, *Vespri*, *Forza*, and *Trovatore*. The first, "Ecco l'orrido campo," is fabulous, once again helped along by Chailly's surging additions of mood. Dunn's dramatic sense is sharp here, and the aria's brutalities hold no fears for her—the voice rings out at all registers, with clarity and potency. Elvira's aria, "Emani, involami," is more of a problem, particularly in its cabaletta, where Dunn can't muster up the correct abandon—but what soprano since Rosa Ponselle sings this music convincingly? "Arrigo!, ah! parli a un core" is a brute of a piece, and while Dunn hardly embarrasses herself, she takes the easier descending scale from high C at the aria's close and still doesn't quite get through it with ease or grace. Her trill is vestigial as well. "Pace pace, mio Dio" is excellently rendered but needs further emotional exploration, and the same can be said for Leonora's "Tacea la notte" and its cabaletta. I'm being slightly overcritical here because we are dealing, without a doubt, with a major singer who is flirting with greatness. She's so good, she can take the heat.

Dunn is an exciting singer with a remarkable

technique. She has to let go a bit emotionally and hurl herself into her roles before she'll begin to bowl them over in the aisles. But her attention to detail, the beauty of the sound, and the sincerity of her delivery are all to be treasured. As suggested above, Chailly and the Bologna forces offer more than assistance—they're partners, and very good ones at that. A booklet with an essay about Miss Dunn and texts and translations is included, and the disc is vibrantly recorded and produced. Highly recommended. Susan Dunn has grandeur in her voice and great intelligence; it will be a pleasure to watch her develop.

Quite a crop, these eight discs, and five of the seven singers are home-grown. Ameling and Domingo are, of course, the best-known quantities, and the latter disappoints only because of the casualness—and flimsiness—of his program. Norman is a natural resource to be treasured. Estes should, judging from his recital disc, stick to Wagner, although he's hardly the end-all in that *fach* either. Ramey remains problematic—a luscious voice which can do everything with such ease and class that too little thought is being put into the interpretations. Morris is a dynamo who has only to check some bad habits. And Susan Dunn may just rise, albeit carefully, to the top. As I said, quite a crop. **S**




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RECORD REVIEWS



Classical

BACH: *Orchestral Suites, BWV 1066–1069*

Christopher Hogwood, *The Academy of Ancient Music*
L'Oiseau-Lyre 417 834-2 (2 CDs only). John Dunkerley, eng., Suites 2, 3, 4; John Pellowe, eng., Suite 1; Peter Wadland, prod. DDD. TT: 94:22

It's been quite a while since we all came to realize that the authentic-instrument movement was more than a fad. But whether you regard its seeming permanence as good news or bad, you should be glad to know that despite all the bookish research done in the name of recreating the one, true, authoritative interpretation of music from the past, differences flourish among authenticians. Score one for the rugged individualists.

Christopher Hogwood's richly diverse interpretation of Bach's four orchestral suites differs as much from those of his fellow period practitioners as it does from those of the modern school. This can only mean more fun and a greater breadth of choice for all of us.

Hogwood is not afraid, for example, to impart more lyricism—even strains of melancholy or grandeur—to these scores than do such counterparts as John Eliot Gardiner (English Baroque Soloists, Erato) or Sigiswald Kuijken (La Petite Band, Pro Arte). But he does so without ever losing the momentum or the Baroque buoyancy vital to the music.

The result of these confidently and carefully chosen accents is that Hogwood gives us greater contrasts within and among the suites. A full, rewarding picture emerges—a sense that the music is more than just the sum of its notes and that the individual still has a place in the pursuit of historical accuracy. Suite 2, with the concertante flute beautifully played by Lisa Bez-nosiuk, is particularly illustrative of this eloquence and broad interpretive vocabulary.

But do not infer from this that Hogwood's versions are Romanticized, or that Gardiner's or Kuijken's are dry. Hogwood and his orchestra are still bright and lively, in the proper Baroque style. Gardiner's readings are also very spirited, and move beautifully through the varieties of the works' moods. Kuijken seems at times to be having more genuine fun than

either, though his musicians fall just short of the caliber of those under the command of the other two conductors. But it is Hogwood's recordings, in the end, that present a more comprehensive view, one that would probably hold up better to repeated listenings.

The L'Oiseau-Lyre sound quality is very good, too. It has excellent detail without losing the fullness of orchestral body. And the steely drone of the Baroque violins—which can bore through solid bone on some recordings—is very civilized here.

For an excellent alternative on modern instruments, turn perhaps to Neville Marriner's grand, stately effort with the Academy of St. Martin-in-the-Fields on Philips. But even the most vehement anti-authentic crusader would have trouble resisting the appeal of Hogwood and the Academy of Ancient Music.

—Robert Hession

BEETHOVEN *Piano Concertos 1–5, Choral Fantasy* Vladimir Ashkenazy, piano and director; Cleveland Orchestra

Decca 421 718-2 (3 CDs only). Simon Eadon, Colin Moorfoot, engs.; Andrew Cornall, prod. DDD. TT: 3:18:59

What was once considered an impossible task, that of directing all the Beethoven piano concertos from the keyboard, has not only been accomplished by Barenboim, but also now by Ashkenazy, and extremely successfully too. Ashkenazy told me that it had been Barenboim's inspired direction of Mozart's *tuttis* from the keyboard that had encouraged him to try those concertos—all have now been recorded with the Philharmonia—but whether or not Barenboim has also been the influence behind the Beethoven I cannot answer. Ashkenazy shows here such a natural sense of dialog, of intuitively timed and balanced give-and-take with the Clevelanders (with whom he has often recorded), that I feel the decision to undertake this project was probably determined purely by the strength of their relationship.

Here the myth of soloist *vs* orchestra is exploded: Ashkenazy, now in dual responsibility, is spiritually of one mind with his colleagues, and the balance of piano with orchestra, of necessity a more integral feature,



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heightens that impression. His control, and coordination with the orchestra, are masterly—better, I would hazard, than is often achieved by the intervening, middle-man conductor. Consider the immaculately timed *ritardandi* of the “Emperor” and the *pp leg-giermente* markings of the first movement observed to beautiful effect. There is a great deal of poetry in Concerto 3, too, with some breathtaking moments in the Largo, and a delightful delicacy to the Rondo.

Yet I feel a lack of refinement in Concerto 2, most readily displayed by a less caring approach to dynamic contrast. Aggression rather than playfulness seems to be the keynote here; nothing like the charm of Murray Perahia’s view of the work (CBS MK 42177) ever surfaces. What is of interest, however, is Ashkenazy’s use of his own cadenza for the first movement, already to be heard on his recording with Solti/CSO.

As for the piano, it doesn’t sound in the best of condition. In fact, the way it resonates is often reminiscent of the *fortepiano*. But this is much less distracting than the unpleasant edits throughout the set, those in the Choral Fantasy being the most regrettable, as that work’s inclusion in this set should be seen as a bonus. All begins well, Ashkenazy whipping up a high degree of tension and anticipation from the very first notes of his opening solo. The excellently balanced bank of soloists gives a fine performance, too. So why has London passed tapes that show two of the soloists to have receded so noticeably into the background by its close?

Whether or not to recommend the set is difficult. I’m happy to be able to dip into it, and complement it with Perahia/Haitink (now also available as a boxed set, minus the Choral Fantasy, on CBS CD 44575), but I’d say a definitive version has yet to be made. —Barbara Jahn

BEETHOVEN: Piano Sonatas

Sonatas 3, 5, 8 (“Pathétique”), 13, 14 (“Moonlight”), 15 (“Pastorale”), 18, 20, 23 (“Appassionata”), 26 (“Les Adieux”)

Bruno-Leonardo Gelber, piano

Denon CO-2203, CO-72539, CO-73006 (single CDs only). Peter Willemoës, eng.; Takashi Baba, prod. DDD. TTs: 68:45, 55:12, 59:21

The 48-year-old Argentina-born Gelber, who studied with Marguerite Long and now makes his home in Paris, is the latest contender in the complete recorded Beethoven Piano Sonata sweepstakes. Judging from the first issues, three separately available CDs, this performer is definitely worth hearing for his strong interpretive profile. His range of dynamics, almost always warm-toned even when dramatically explosive, is exceptionally wide, and there is

a welcome sense of forward momentum. An ability to probe poetically, to seek and summon up character, added to a dazzling technical command, invariably reveals interpretations that are highly assertive, even at times arresting. Perhaps one could legitimately complain that Gelber at this point does not really distinguish between earlier and later Beethoven in any stylistic sense. Indeed, what the performer produces here is often very large-scaled, almost larger than life—and we are not discussing any kind of comparison with the less sonorous kinds of pianos that Beethoven knew or, conversely, any abnormally high-level playback of Gelber’s modern Steinway. The results are often fascinating, and, perhaps with only the exception of the overly deliberate variations movement in the “Appassionata” or a somewhat impatient-sounding No.18 opening, these are startlingly attention-getting interpretations. That applies equally to those introspective moments that are the most quiet and tender as well as, more obviously, to those sections where the pianist evokes the agitated, *Sturm und Drang* Beethoven. The Paris-made recording is remarkably vivid, clean, and full-blown, although close enough for the listener to be aware of the distractions of occasional light performance noises. One important feature particularly recommendable to music teachers or those wishing to understand aspects of sonata form is the indexing, with anywhere from three to as many as eight internal sections per movement being accessible at the push of a button. Those having that capability on their CD players will surely find this a most welcome bonus.

—Igor Kipnis

BEETHOVEN: Symphonies 1 & 2

Telarc CD-80187. TT: 58:49

BEETHOVEN: Symphonies 4 & 8

Telarc CD-80198. TT: 58:43

Boib: Christoph von Dohnányi, Cleveland Orchestra CD only. Jack Renner, eng.; Robert Woods, prod. DDD.

BEETHOVEN: Symphonies 1 & 4

Claudio Abbado, Vienna Philharmonic DG 427 301-2 (CD only). Werner Mayer, eng.; Günther Brest, prod. DDD. TT: 58:43

With these releases, two conductors complete traversals of the Beethoven symphonies. The Dohnányi cycle was begun about five years ago with this performance of Symphony 8 (originally coupled on CD with the conductor’s account of the Schubert “Unfinished”). It is a generally fine account weakened by a few shortcomings: a blended sonority that deprives the music of its piquant color and brashness, a few untoward breathpauses, and a generally pervasive coolness. Far more disappointing is the new 4, spoiled by ludicrously fast outer movements in which Dohnányi skates across

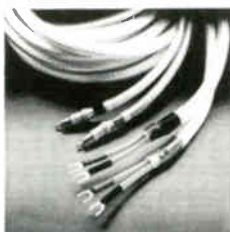
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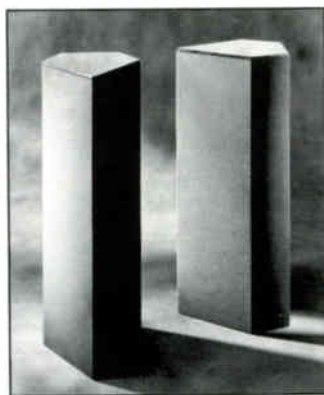
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the music's surface with little inflection. All one can do is marvel at the Clevelanders' virtuosity in keeping step with the jet propulsion. Lost in the rush is the first movement's requisite explosiveness and weight and the finale's bubbly waggishness.

Dohnányi does better with 1 and 2, where the only unorthodox feature is the rapid tempo for both slow movements, a trait that deprives them of their incipient atmosphere and delicacy. And the outer movements of both scores would benefit from a bit more inflection and rhythmic shading in order to underscore the music's drama and wit. One misses, for example, the joke (in the first movement of 1) of a bass line that fails to keep in step with the rest of the orchestra; similarly, the brusque humor of the finale of 2 is eroded by a tight-fisted rigidity. Dohnányi observes all exposition repeats and inserts gratuitous ones in the reprise of the third movements of 1 and 2. Telarc's slightly hard-edged sound is acceptable. In short, these releases, though not without virtues, cannot compete with the best available.

The Abbado release is more successful, at least in part. No.4 is one of the best Beethoven performances I have heard from the conductor: beautifully balanced, carefully shaped, and with just the right suggestion of the crackling tension that is at the work's core. Note, for instance, the superbly molded first-movement recapitulation that develops from a trip across harmonic galaxies and explodes under Abbado like a nova; note, too, the sharp etching of the motivic profile in the work's finale that brings out the humor so conspicuously absent in Dohnányi's reading. Unfortunately, Abbado's No.1 is another matter, its rhythmic spinelessness echoing weaknesses in the conductor's earlier Beethoven recordings. This shortcoming, let it be added, has nothing to do with tempos being too slow (although I would prefer greater animation in the first movement of 1). Rather it is rooted in a seeming inability to generate energy and a sense of thrust. Abbado observes all exposition repeats, and DG's in-concert recording is gorgeous, with considerably warmer ambience and more judicious balances than Telarc provides.

Among currently available editions of these warhorses, my preferences for 1 remain with Wand (soon to be reissued by RCA) and Bernstein (DG), both boasting pointed color, humor, and swagger. Bernstein also gives a grand anticipation of the "Eroica" in his DG account of 2, and Szell's fine old reading of the work—trimmer, fleetier, and less well-recorded than Bernstein's—has recently been reissued on a mid-priced CBS CD. No.4 received a power-

fully intense reading from Karajan in a 1977 DG version recently reissued on a mid-priced DG Galleria CD, and Bernstein's DG version of a year later is also large-scaled and incisive. Fleeter and a bit more lightweight, but equally commanding and gorgeously recorded, is Kegel's superb performance on Capriccio. And 8 can be heard in all its craggy brashness in fine readings by Szell, Karajan, Bernstein, Kegel, and Wand (see my "Building A Library" in the next issue).
—Mortimer H. Frank

DVORÁK: Piano Concerto, Op.33

SCHUMANN: Introduction & Allegro appassionato, Op.92

Andras Schiff, piano; Christoph von Dohnányi, VPO
London 417 802-2 (CD only). Simon Eadon, eng.;
Christopher Raeburn, prod. DDD. TT: 53:02

Andras Schiff, one of today's most sensitive interpreters and a pianist I very much admire, performs both these works with his usual poetic understanding. At least in the case of the uncut Dvorák, however, his rhetorically understated approach (the first-movement cadenza is an exception) seems more classically conceived than as a representative product of the beginning of the last quarter of the 19th century. Perhaps my reaction to the performance as a whole, too, is colored by the prosaic, albeit accurate, orchestral direction. Not without vigor, the accompaniment nonetheless decidedly misses romantic warmth, ardor, and sweep, as well as a firm profile. Nor is the live recorded sound of the Dvorák—we are told only that it derives from Nov. 1986 in the Vienna Musikverein—particularly pleasing. One has the impression of multiple miking with the palpably felt, closeup piano too forward in relation to the orchestra. The non-live Schumann, a 15-minute gem, benefits from a sound picture that is much better integrated.

—Igor Kipnis

ELGAR: The Dream of Gerontius

PARRY: Best Pair of Sirens; I was Glad

Felicity Palmer, mezzo-soprano; Arthur Davies, tenor;
Gwynne Howell, bass; Richard Hickox, LSO & Chorus
Chandos DBRD-2014 (2 LPs), CHAN 8641.42 (2 CDs).
Ralph Couzens, eng.; Brian Couzens, prod. DDD. TT:
1:54:00

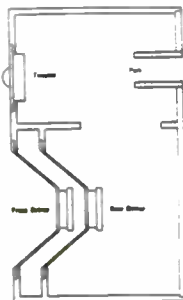
Richard Hickox has been Director of the London Symphony Chorus for 12 years now, and this performance of *Gerontius* alone would speak reams of how good he is at the job. I've never heard a reading in which the chorus was so much an indispensable part of the work; it usually feels like an also-ran, left over when rehearsal time ran out! Here, its superbly attentive members sing with breath-stilling pianissimos as the assistants and the distant Voices from Earth, with great joy as the Angelicals, and, just as happily it seems, with spiteful, spine-

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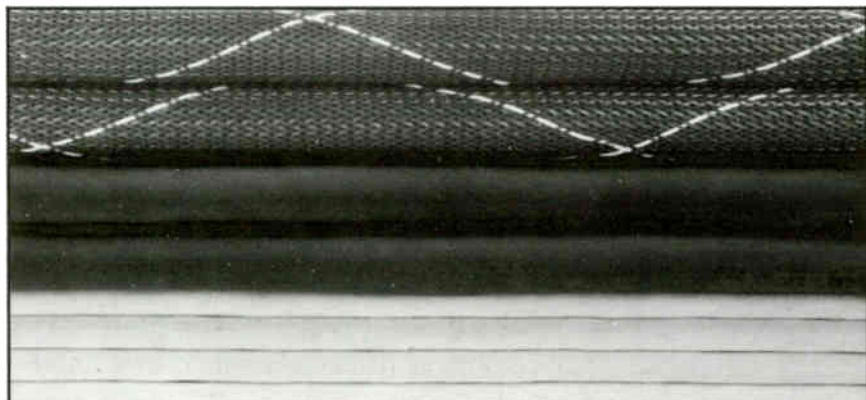
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tingling venom and menace as the threatening, invisible demons. Whoever selected Arthur Davies to take the title role certainly knew what they were about too. He brings a drama to the score that lifts the notes from the page as no other has done, in my experience. There is real anxiety in his voice at "Sanctus fortis," resignation at "Mary pray for me," and heart-rending supplication at "Take me away." I defy anyone not to be moved by this, heightened as it all is by Hickox's calculated risks with dynamic and tempo gradations.

But nothing is ever perfect, and where I thought this performance's strength would lie, with the normally superb mezzo Felicity Palmer, there is not only weakness but some surprising unpleasantness. Her voice becomes harsh under pressure, high notes acquiring a desperate quality that is distinctly uncomfortable to live with. Gwynne Howell, too, while coping admirably with the different tessitura of both the Priest and Angel of the Agony, disappoints by the odd, slightly sharp note.

To say that the orchestra goes unnoticed for much of the time is a compliment; that it plays the perfect supporting role, both here and in the two excellent Parry fillers, shows how well-judged is the recorded balance of this disc. And by its unassuming stance, it points up the greatness of *Gerontius* which, ironically enough, for all its Catholic inspiration, represents the pinnacle of sacred choral composition in England at the turn of the century.

—Barbara Jahn

HAYDN: String Quartets, Op. 54 Nos. 1–3

Endellion Quartet

Virgin Classics VC 90719-2 (CD only). Mike Hatch, eng.; Andrew Keener, prod. DDA/DDD. TT: 60:16

The only competition on CD for this release is a splendid account of the three Op. 54 quartets recorded a little more than a decade ago for Hungaroton by the Tátrai Quartet. Favoring a slightly wider vibrato, marginally faster tempos in outer movements, and an equally lean sonority, the Endellion Quartet conveys this music's emotional range—its pathos, humor, and exuberance—with somewhat greater intensity than the Tátrai displays. The stuttering close of No. 1 has never sounded wittier; the hilarious silent beats in the exposition of the opening movement of No. 2 are superbly prepared; and the sobbing gloom of the succeeding Adagio—one of Haydn's most expressive slow movements—is italicized by clarifying all of its stark, almost modern chromaticism. And in soaringly lyric moments, as in the opening movement of No. 3, the Endellion projects the music's ethos with apt, unaffected simplicity.

At times I missed the tension suggested in

portions of these works by the Juilliard Quartet in a magnificent, long out of print, superbly reproduced 1964 recording that has reposed far too long in the CBS vaults. Unless it is reissued, this Virgin Classics release may well be a preferred edition, especially as it boasts far better engineering than that of the hard-edged Tátrai account. The Endellion plays all exposition repeats in this warmly recommended release.

—Mortimer H. Frank

HAYDN: Symphonies 101 & 103

Frans Brüggen, Orchestra of the 18th Century

Philips 422 240-2 (CD only). Dick van Schuppen, Eva Blankespoor, engs.; Gerd Berg, prod. DDD. TT: 60:10

This release has major shortcomings, but comprises one of the most communicative period-instrument presentations that I have heard and the most commanding performances that Frans Brüggen has recorded to date. In every way, 101 is an unqualified success. Brüggen gives us a Haydn who is the progenitor of Beethoven, a Haydn at once dramatic, brusquely surprising, and a master of orchestral color. All of the music's wit, motivic profile, and vibrant joyfulness are conveyed, and even with the smallest orchestra supported by but three double-basses, Brüggen projects a weight and intensity that typify Haydn. If there is a weakness in the performance, it may be the slightly exaggerated staccato execution in the slow movement, which tends to overdo the tick-tock syndrome that has inspired the nickname "Clock." But this is a minor cavil with what is clearly a major achievement.

Many of the same admirable traits are to be found in 103, but major problems exist here: The first movement—perhaps as a result of Brüggen's effort to suggest weight and power—moves too slowly to sound joyful. The contrast between the variations of the slow movement is weakened by insertions of pointless breath-pauses between them. And the finale is compromised by an egregiously ill-judged decision to employ Haydn's original, relatively unfamiliar version, which he later shortened, thereby tightening the movement's already extraordinary terseness. Also disturbing is Brüggen's elongation of the horn call that introduces the movement, one of Haydn's wittiest strokes in which the horn's structurally central motif enters, in effect, one measure too early, a delightful joke whose humor is wiped out when the passage is not played in tempo. Finally, one wonders why Brüggen is inconsistent in his treatment of the first movement's timpani roll, playing an extended crescendo-diminuendo at the opening, but—when the passage recurs near the movement's close—opting for the forte-diminuendo pattern that

modern scholarship deems correct for both statements. For those undisturbed by such idiosyncrasies, this release should prove an unqualified success. Certainly it is worth hearing for 101 alone. Brüggner observes all exposition repeats. Philips' sound is close, clear, and richly detailed.

—Mortimer H. Frank

MAHLER; Symphony 1

Leonard Bernstein, Concertgebouw Orchestra

DG 427 303-2. TT: 56:05

MAHLER; *Des Knaben Wunderhorn*

Lucia Popp, soprano; Andreas Schmidt, baritone; Concertgebouw Orchestra, Leonard Bernstein

DG 427 302-2. TT: 57:41

Bob: CD only. Hans-Peter Schweigman, Klaus Scheibe, engs.; Hanno Rinke, prod. DDD.

Bernstein's new Mahler 1 is a massive improvement upon his 1967 NYPO recording. That earlier performance was fatally hard-driven, dominated by a cold-as-steel substitution for Viennese sweetness. In contrast, the new recording breathes with a life and understanding that is unmistakably European. Thus the second-movement *Ländler* is broad and beautifully proportioned; the movement's trio has a Viennese ripeness that eluded Bernstein in the 1960s. In the first movement Bernstein takes a page out of Bruno Walter's performance book, making the woodwind cuckoo-calls graceful and literal.

Most telling of Bernstein's encyclopedic understanding is the finale, where he leads us through a little history of 19th-century music. In the pastoral sections there are Bohemian evocations of Dvorák which I, at least, never before detected. As in Bernstein's recent Mahler 5, the brass fanfares are given a Brucknerian grandeur, here quite incongruous with the music's overall sense of personal willfulness à la Berlioz. (Can you think of a better derivation for Mahler's central musical crisis than the conflict between Brucknerian and Berliozian histories?)

But one wonders if the virtuosity is misplaced: whether this youthful music is probed too deeply. Where Bernstein gives the first pastoral interlude of the finale the significance of a Bruckner Adagio, Andrew Litton, in his RPO reading on Virgin Classics, makes it the romantic reverie of a spring afternoon. Litton may sound a little breathless at times, but the material can bear it: it's not subtle music. By comparison, Bernstein lumbers a bit.

My first recommendation for a Mahler 1 is the Litton. For a superior *interpretation* of the music, consult Horenstein/LSO on Unicorn. For a mature, broad reading, loyalty remains with Walter, the recent Haitink/BPO being too dull.

Mahler's song-cycle *Des Knaben Wun-*

derborn, or *The Youth's Magic Horn*, was completed just after Symphony 1. Based upon a collection of German folk tales, this cycle is vital to comprehending Mahler, since it provided much material for Symphonies 2-4, and some for the later symphonies. Akin to Bernstein's revisits to the symphonies, this Concertgebouw performance is more infused with European tradition than his 1969 NYPO recording with Christa Ludwig and Walter Berry. Unlike Bernstein's new Symphony 1, this mellowing is no automatic advantage. Bernstein's treatments of songs with humorous or pastoral character ("Rheinlegendchen," "Wer hat dies Liedlein erdacht?," "Verlor'ne Müh") have developed a gentle wit over the last 20 years. But many songs in *Des Knaben Wunderhorn* are polemical, bitterly satirical, and based on military themes; these tend to be the songs reappearing in the symphonies. Bernstein's sometimes caustic and slashing NYPO manner better suits them. The anti-war song "Die Tambours' sell" on Bernstein/NYPO retains to this day the chill it had when first recorded during that painful Vietnam era; Berry's last exhalation of "Gute Nacht," as his drummer-boy character reaches the gallows, is breathtaking.

As in the NYPO recording, Bernstein has the singers take male and female roles in the four songs where this is appropriate.

Comparisons of singers is a mixed bag. Lucia Popp is more believable in the young girl roles than Ludwig, her pronunciation more natural; and her voice doesn't suffer from the hardness on top that sometimes afflicts Ludwig. Baritone Schmidt, though possessing a fresh, controlled voice, cannot approach Berry's dramatic skill.

In the matter of sonics, there is no comparison. The new DG approximates natural timbres and a realistic perspective between singers and orchestra. The CBS recording is awful, ruthlessly miked singers slapped over orchestra in a phase-scrambled manner that no good pop producer would tolerate.

Either of Bernstein's *Wunderhorn* recordings will provide a fine introduction. Both include fine translations, though William Mann's on the new DG could stand a little more bite. I anxiously await CD re-release of an excellent performance, previously available on Vanguard LP, with Felix Prohaska conducting the "Vienna Festival Orchestra." This '60s-vintage recording features Maureen Forrester, a great Mahlerian contralto, at her prime. The baritone part is sung with consummate skill by Heinz Rehfuss, a most underrated singer-actor. Specifically *not* recommended is the 1968 Angel recording with George Szell and the LSO. Despite fine singing by Elisabeth Schwarzkopf, it is sabotaged by Dietrich Fischer-Dieskau's

uncontrolled hamming. —Kevin Conklin

STRAUSS: *Ein Heldenleben, Til Eulenspiegel*

Michael Tilson Thomas, LSO
CBS MK 44817 (CD only). Mike Previn, VPO
John Johnson, engs. David Mottley, prod. DDD. TT: 62:40

STRAUSS: *Ein Heldenleben, Four Last Songs*

Arleen Auger (Songs), André Previn, VPO
Telarc CD-80180 (CD only). Jack Renner, eng.; James Mal-
linson, prod. DDD. TT: 68:30

With his appointment as Principal Conductor of the LSO, Michael Tilson Thomas has entered the heavy-duty industrial stage of his career. Except for an Ives series, CBS has been busily recording him in standard repertoire, numerous pieces of which have been downgraded in status to their midprice line. Some 20 years ago, a very different CBS recorded the orchestral music of Ruggles with Thomas at the helm of his first orchestra, the Buffalo Philharmonic. The Ruggles is currently unavailable. In terms of recordings worth hearing and rehearing, Thomas's forté is 20th-century music, the more complex the better, and a rare affinity for novelities. Despite the fact that his Beethoven did not survive as full-price catalog for more than a year, CBS still takes him down the well-worn paths of repertoire which can only be recorded so many times before the very ideas wear thin from overexposure.

Not that this is a bad *Heldenleben*. Thomas is fully competent, and the LSO is a world-class orchestra currently involved with some half-dozen other world-class London orchestras in a strenuously competitive atmosphere, vying for audiences, private and public support, and recording assignments.

The LSO appears prepared to give Thomas its all, but Thomas walks on eggs. "Let's not take anything too far out," he seems to be saying. *Til Eulenspiegel* is even worse in this regard—not bad, just dull. For 15 bucks, that could be bad. The production from Watford Town Hall is both detailed and spacious, but despite the improved clarity of the bass, it's still no match for Reiner's 1954 stereo recording on RCA.

André Previn could make the *Guinness Book of World Records* as the World's Most Hot and Cold Running Conductor. I can scarcely think of a conductor from any period capable of greater extremes from excellence to mediocrity. Running hot, he was capable of a brilliant Prokofiev 6 with the LAPO on Philips; the companion work on the same disc, Prokofiev's *Scythian Suite*, ran cold. I found his first Strauss disc with the VPO for Telarc, *Zarathustra*, dull and pedestrian beyond belief. At least this *Heldenleben* has a bit of life to it, some tenderness when called for, and a lot of VPO character.

Previn has the advantages of the VPO's native style with the music, and the acoustic signature of Vienna's Musikvereinsaal, captured by Jack Renner far better than he had done in the Previn/VPO *Zarathustra*. Since the VPO is one of the profession's most conservative orchestras in terms of instruments and approach, Telarc has provided an excellent modern-sounding recording of a concept which sounds "quaint" to those accustomed to the more powerful British and American orchestral performances of *Heldenleben*. I would be even more impressed if Previn had been more than lukewarm. Could producer James Mallinson be the culprit for these doldrums? Arleen Auger's fans may want this disc for her performance of the *Four Last Songs*. Her purity of timbre and identity with the texts are winning qualities, and appear to bring out the best in Previn as a sensitive and professional collaborator. There's probably more compulsive duplication of vocal repertoire in the hands of serious collectors than any other type, so I won't even mention the Schwarzkopf/Ackermann performance on EMI midprice.

Otherwise, I cannot escape the notion that no recent *Heldenleben* recordings have surpassed the fascination or commitment of those made by three of the conductors who knew Strauss, studied with him, assisted him, were assigned premieres by him, and who maintained lifelong friendships with him: Mengelberg on Victrola and Teldec, Böhm on DG, and Reiner on RCA. Anyone who wishes to hear how this work ought to sound should have any or all of these three. Anyone who has problems with mono or 78 sound may still enjoy modern stereo with the Reiner performance.

—Richard Schneider

TCHAIKOVSKY Symphony 5, *Swan Lake Suite*

Sir Georg Solti, Chicago Symphony
Decca 425 516-2 (CD only). James Lock, Stan Goodall,
engs.; Michael Haas, prod. DDD. TT: 71:51

Although both works on this disc were recorded in the CSO's own Orchestra Hall, they could not present greater contrast. Symphony 5, laid down in September '87 by James Lock, is held in soft focus, so the dark hues characteristic of this score, and Solti's encouragement of over-ripe sounds, hardly let in much light between them. It has to be said, though, that a more detailed, analytical recording would only have highlighted Solti's general disregard for musical detail: rhythms lack bite, transitions are disjointed, and dynamics are lunged at rather than prepared.

His *Swan Lake Suite* is a happier prospect. Recorded a little over a year later, by Stan Good-

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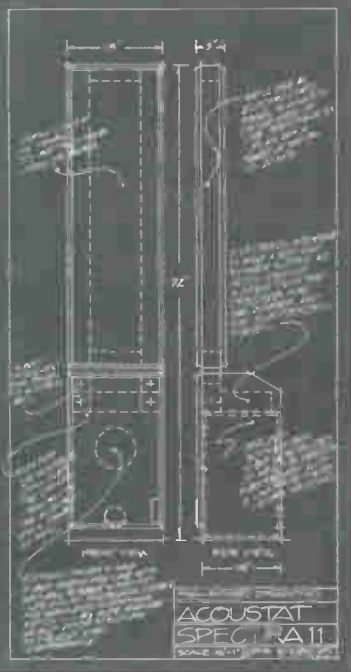
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all, it has captured Solti's empathy for the balletic foundation of this piece. Altogether greater clarity makes for a more pleasing sound, but if recording artificially is your particular *bête-noire*, steer clear! Here, solos and duos are spotlighted to the extent that movements more-or-less for full orchestra, like the "Danse hongroise," suddenly seem shockingly distant. Approach with caution.

—Barbara Jahn

Classical Collections

BARTÓK-WEINER: Two Rumanian Dances

DEBUSSY-BUSSER: Petite Suite

RAVEL: Tombeau de Couperin

STRAUSS: Til Eulenspiegel

Fritz Reiner, Symphony of the Air
Music and Arts CD-292 (CD only). AAD. TT: 54:14

Three of the four works on this CD were recorded commercially by Reiner, although none of them are available at this time. However, *Til Eulenspiegel*, which Reiner recorded for RCA in 1956 with the VPO, along with its flip side, *Death and Transfiguration*, will probably find their way to a Decca/London budget CD in the foreseeable future.

This particular CD derives from a broadcast concert given in January, 1952, by an orchestra which did not take on the name given to it by Music and Arts' Fred Maroth until after Toscanini retired and a leading radio/TV network cast his orchestra adrift to fend for itself. Just to give you a hint as to this orchestra's true identity, Reiner made studio recordings of the Debussy and Ravel works for RCA with the NBC Symphony, in January, 1952.

I admit that I am neither a fan of Debussy's *Petite Suite*, nor of Debussy works orchestrated by Busser. *Petite Suite* is a bit too pretty and bland for my taste, and Busser, Debussy protege though he was, could only hint at the possibilities of Debussy's own unique orchestral concepts. Reiner and the orchestra made a better case for this work in the RCA recording by means of more sensitive dynamics.

Most of Ravel's orchestral music derives from piano originals, but Ravel orchestrated them himself. Despite its title, *Tombeau* is not a deep piece, but its melodies are haunting, its harmonies arresting. Reiner's French repertoire has been underrated, but it's a fact that his performances of these works could stand up to the best efforts of his French contemporaries. There is little to choose between this live performance of *Tombeau* and the RCA studio recording, except that the former is available now and the latter is not. The audience, which fell to vigorous applause between movements in the Debussy and Bartók works, behaves itself properly in the Ravel.

Bartók's *Rumanian Dances*, the orchestration of which, according to sources within the Fritz Reiner Society, is mistakenly attributed by M&A to Tibor Serly (who could have easily done it), is actually by Leo Weiner, who, along with Bartók, was one of Reiner's teachers at the Budapest Academy. Unlike Busser, who sounds almost like Debussy but not quite, Weiner makes us believe that Bartók could have orchestrated it just this way. I am not aware that this work has been recorded before. This performance takes place well in advance of Bartók's acceptance by the middle-brow public and those who pander to its tastes, and Reiner and the orchestra play it to a fare-thee-well, easily the best performance on the disc.

Til Eulenspiegel disappointingly lacks the drive, character, and security Reiner gave it on other occasions. I also feel that Reiner's VPO recording is overrated. In 1950, Reiner recorded *Til* with the RCA Symphony, and that is a *Til* to write home about. An even greater *Til* exists only in the "pirate zone," a CSO concert broadcast from 1957, which deserves to be authorized for release (if by no one else, then by the CSO itself, as part of a fundraising premium).

The mono sound, as with most M&A CDs, is clean, full-bodied, and far better than the source or vintage would lead one to believe. Nearly all M&A CDs bear disclaimers about their sound, and in most cases, the disclaimers are overstated, a refreshing if odd state of affairs. The two dropouts that this CD's disclaimer refers to are indeed there, but not so you'd notice. For me, the Bartók alone makes the disc worth having, but I hope that M&A will find more Reiner sources to offer us and make better performance choices in the future.

—Richard Schneider

BORODIN: Quartet 2

SMETANA: Quartet I

Cleveland Quartet

Telarc CD-80178 (CD only). Jack Renner, eng.; Elizabeth Ostrow, prod. DDD. TT: 56:46

This coupling of two of the most wonderfully lyrical string quartets from the last quarter of the 19th century, played with such love and intuitive musicianship, and in such excellent recorded sound, definitely has my vote for the best chamber-music issue I've heard so far this year.

The Cleveland Quartet is not afraid to wear its heart on its sleeve, developing some of the most intoxicatingly beautiful and evenly balanced sounds I've heard, thanks in part to the set of four Paganini Strads it uses, courtesy of the Corcoran Gallery, Washington.

Although Borodin's *Quartet 2* is packed full with memorable melodies, it is the theme of

the Notturmo (used as "And this is my Beloved" in the Broadway musical *Kismet*) that is most instantly recognizable. As David Loebel wittily points out in his insert notes, Borodin "won a Tony" for it, giving "new meaning to the phrase 'awarded posthumously'"

Smetana's Quartet I is autobiographical, a "more or less private composition," and here the Cleveland Quartet expresses its intimate statements with deep-seated sensitivity. The Medici Quartet (reviewed in June, p.14) is a little too consistently brash by comparison. In a warm (some may consider it *too* warm) recording of great clarity and presence, these quartets have, to my mind, been given the best possible opportunity to prove themselves.

—Barbara Jahn

RACHMANINOV/WILD: 12 Song Transcriptions

Earl Wild, piano

Dell'Arte CDDBS 7001 (CD only). Chris Rice & Tom Lazarus, engs.; Philip G. Moores, prod. ADD. TT: 52:22

SCHUMANN: Piano Works

Sonata No.1 Op.11; *Papillons*, Op.2; *Aufschwung*, Op.12 No.2; Romance, Op.28 No.2; *Vogel als Prophet*, Op.82 No.7

Earl Wild, piano

Dell'Arte CDDBS 7005 (CD only). Mike Skeet, eng.; Philip G. Moores, prod. DDD. TT: 55:07

From the standpoint of Earl Wild's artistry, it is in general a good thing that these albums, made for Dell'Arte respectively in 1982 in New York and in 1984 in London, now see their CD reincarnations. Taking a leaf from Rachmaninov's own examples of songs transcribed for piano solo from their original voice-and-piano settings, Wild has expertly, as well as stylistically, fashioned works that add marvelously contrived filigrees to Rachmaninov's own ravishing vocal melodies and sensuous harmonic palette. Because the 12 songs have a certain similarity of tempo and mood, not least through their often pervading melancholy, I would not necessarily recommend a straight-through listening, but, sampled a few at a time, these song transcriptions ("The Muse" and "To the Children" are my own particular favorites) are impressive.

Perhaps even more auspicious is the album entitled *Earl Wild's Schumann Recital*, in which this distinguished American pianist reveals the surest command of style. I found his performance immensely stimulating, from the quirkiest of Schumann's rhythms through the poetic sensibilities of the Op.11 Sonata to the panache of *Papillons*, an account of the latter that deserves to stand on its own in comparison with the classic Cortot version. What I found immeasurably disappointing, however, was the shocking CD processing of both discs. In the case of the Rachmaninov, serious equali-

zation is mandatory in order to prevent the piano from sounding paralyzingly muddy on the bottom and stultifyingly dull in the treble; as it is, the attenuated midrange reproduction only succeeds in producing ear fatigue. With the Schumann, there is an obvious imbalance, the principal piano sound coming from the left channel, the lower midrange and bass from the right. The pickup of the essentially bassless instrument itself is boxy as well as muddy, although I found some improvement apparent both in dynamic response and transparency when I added a CD ring to the disc. In sum, then, for the Wild collector but not the audio enthusiast.

—Igor Kipnis

VARIOUS: The English Lute Song

Julianne Baird, soprano; Ronn McFarlane, lute

Dorian DOR 90109 (CD only). Craig D. Dory, prod., eng.; Douglas Brown, eng. DDD. TT: 65:11

Dorian Recordings is a small label based in Troy, NY; if you do not read the audiophile-oriented magazines (or *Fanfare*), you are unlikely to have heard of them. This recording should remove that problem permanently. On this disc, Julianne Baird, previously heard with the Waverly Consort, the English Baroque Soloists, and elsewhere, gives the recital of her life. If you attend a number of live concerts, you are certain to find a very few where the real magic happens. It is rare, but there are those times when performers and audience are so in accord with each other and with the music that everything falls together. As unusual as this may be in live performance, it is even rarer in the studio. This is a remarkable and wholly beautiful example of the latter case.

Those relatively familiar with English lute-song writing may be a bit surprised by the choice of material on this record. There is, for example, nothing by John Dowland and only one song by Thomas Campion. Anonymous, on the other hand, contributes eight tunes, second only to Robert Johnson, who has ten works present (mostly settings of Shakespeare's lyrics, which RJ wrote before he emigrated to the New World and created Delta blues songs). In her excellent and literate notes, Ms. Baird explains this choice as emphasizing the more florid style of writing which grew up in the first quarter of the 17th century. Once you have heard her performance, you will have no quarrel with her choice of repertoire, although like me, you may prefer the few examples she does include from the earlier style. In particular, she gives affecting renditions of Thomas Morley's "April is in My Mistress's Face,"¹ and the anony-

¹ Please don't ask who April was. I'll bet that joke was current when Elizabeth I was still alive.

mous lament (often attributed to Anne Boleyn) "O Death, Rock Me Asleep." Nothing here, however, is less than wonderful.

Ronn McFarlane is a lutenist with whom I am not familiar. The notes list him as a student of Paul O'Dette, among others; this is in itself remarkable, since O'Dette himself is a mere youth. (By which I mean that he is about the age of the present author.) We appear to be producing generations of lutenists at a very rapid pace indeed. I'm certain we will hear more from McFarlane, whose technique and expressive ability are far above his years. As an accompanist, I doubt he could be bettered, and his three solos are exquisitely rendered.

In discussing sonic considerations, let us leave The Digital Question aside for the moment, and consider the matter of microphone choice and placement. Given the existing state of the art, I honestly believe that no better job could be done than this. The balance between singer, accompanist, and room sound are absolutely right—if there is a more believable recording of voice and solo instrument out there, I certainly haven't heard it. This will certainly be one of the discs I trot along to my next equipment audition; good thing CDs don't wear out, since before that listening session takes place, I will probably have played this a dozen times for sheer enjoyment.—**Les Berkley**

VARIOUS: Proensa (Songs of the Troubadours)
Paul Hillier, vocals; Stephen Stubbs, lute, psalter; Andrew Lawrence-King, harp, psalter; Erin Headley, vielle
ECM 1368 (837-360-1 LP, -2 CD). Manfred Eichler, prod.
Peter Laenger, eng. DDA/DDD. TT: 70:17

This is, without question, the best Troubadour disc I have heard in a very long time; indeed, one of the best ever. There are, however, two vital *caveats* to observe when buying and listening. One: do not read ECM's hype sheet, should one be available at your record store or wherever. Record companies should save a few trees and not issue these things at all. Two: do not begin your listening with track one. I, of course, was unaware of these strictures, and so did both of the above. The hype sheet (aka "informational literature") was couched in terminology usually applied to post-modernist compositions; it may have validity in that context, but it has none here. Track one consists of Hillier reading Guilhem IX's famous "Song of Nothing" ("Farai un vers . . .") while one of the instrumentalists tunes up behind him. "Et tu, Paul?" thought I. Not so. Immediately after this, Hillier sings the *alba* "Reis glorios," another of the most famous Troubadour songs, so beautifully it stops you cold.

I have heard many a Troubadour recording;

a great number of them well-conceived and -executed, but only Montserrat Figueras (on my beloved *Cansos des Trobairitz*) equals Hillier's emotional involvement with the songs. A more truly felt performance of this repertoire would be difficult to imagine. Hillier has an absolutely marvelous voice, and he has worked out a spare but moving technique of accompaniment that his colleagues perform perfectly. If this is the influence of the minimalist school, let's have a lot more of it.

For me, the highlight of this performance was Bernard de Ventadorn's oft-recorded "Can vei la lauzeta mover," supposedly written for Eleanor of Aquitaine. I was fairly certain we didn't need another one of these, the *Four Seasons* of Troubadour music. Paul Hillier proved me wrong with the first line. Not only is he at one with the text in a way that is almost unique, but according to my housemate, who also sings this repertoire, his pronunciation of Old Provençal is exemplary. If there can be a definitive performance of a work 800 years old, this is it.

Space is limited in these reviews, and this puts poor souls like me on the proverbial dilemma's horns. The above description of this disc is probably sufficient for those familiar with Troubadour performance; were it not, I could say a great deal more. But what of those who have never heard these songs, whose notion of Troubadours is conditioned by the Hollywood image? The following will have to suffice. About 800 years ago, in the part of France known as Languedoc, the Troubadours (*trobadors*, they would have said) lived, loved, wrote, fought, and died. They were part of a brief cultural and artistic flowering sometimes called the "Renaissance of the 12th century," and they and their society were obliterated by an act of religious and cultural genocide called the Albigensian Crusade. While they lived, they revived an old notion, nearly dormant in literature since the time of Sappho—the idea of romantic love. Fifty or a hundred years or so later, someone or a few someones in the monastic community had the good sense to write down many of the texts and some of the music they had created.

The remarkable thing to me about the Troubadour art is that it retains the power to move in an age utterly removed from that of its creation. It shares with the 16th-century art song an immediacy of emotion that is as affecting today as it must have been when it was first made. The 1960s saw the rebirth of nationalism in the Languedoc, 720 years after the fall of its last stronghold, testimony to the power of the Troubadour artistic and cultural ethos. The selection of songs (with excellent trans-

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lations) on this disc will serve as the best introduction I know to that time and culture.

Lately, everyone has been jumping on the bandwagon of using photographic analogies in describing audio concerns. These analogies have run from excellent (Peter McGrath) to unfortunate (you can't put Kodachrome 25 in a Hasselblad—64 yes, 25 no). Never let it be said that I missed a trend. The photographer Edward Weston said that his finest work contained not merely a representation of reality, but a kind of super-reality. What I think he meant by this was that the photograph, by its ability to simplify a complex visual structure and to resolve it into its component shades and textures of light and dark, sees in a way that the unaided eye cannot, and so reveals things outside of ordinary perception. In addition, it enables the viewer to study at leisure, and in infinite detail, a specific moment in time.² The same, more or less, could be said of an audio recording. So how, given all of this, can we assess the work of Eicher and Laenger? This is one of the most detailed and "informative" recordings I have ever heard, and yet there is evidence of manipulation—close miking to emphasize detail, and added reverb and "presence." What is the end result? One of the very finest works of craft I have heard. Weston and Adams dodged and burned their prints³—anathema to some purists—but it is the result that counts. The same is true here.

This recording achieves something that digital had heretofore not accomplished, something *better* than any analog recording I have heard—it captures with uncanny accuracy the initial attack of a hammered dulcimer struck by wooden hammers. I have heard a lot of hammered dulcimers around the Philadelphia folk conspiracy, so I was amazed to hear such a life-like sound emerging from my Vandersteens. Don't get me wrong: I am not proclaiming the Triumph of Digits here. I have heard better harp and vielle recordings, and Hyperion's analog LPs did as good or better at capturing Paul Hillier's voice. (The latter may have as much to do with the difference between natural and artificial reverberation as with that between the two media.) The CD was a bit better than the LP (35 minutes per side) at getting the transients right and keeping the not unpleasant edge on Hillier's voice (which is also present on the Hyperion LP, and not a digital artifact). Before the editorial axe descends—highly recommended.

—Les Berkley

² Look, if *Modern Photography* really is dead, somebody's got to fill the gap.

³ Adams referred to the printing of a negative as "performing the score." Weston said, "When I can feel a Bach fugue in my work, I know that I have arrived."

Show Music

EILEEN FARRELL *Sings Harold Arlen*

Eileen Farrell; Loonis McGlohon, piano & arrangements; Joe Wilder, special guest artist

Reference Recordings RR-30 (LP), RR-30CD (CD). Keith O. Johnson, eng.; J. Tambllyn Henderson, Jr., prod. AAA/DDD, TT: 47:36

In an interview with JA in the June 1989 issue, Reference Recordings' Tam Henderson describes working with Eileen Farrell as "more than a dream come true." Endowed with one of the glorious soprano voices of our time, Farrell is best known for her concert and operatic repertoire, but she did record an album of popular songs in the early '60s (*I've Got A Right To Sing The Blues*, now available as CBS Special Products ACS 8256). She has retired from an active career, but her contribution to the recent Telarc *Sound of Music* (CD-80162) showed that, even after 40-odd years of singing, she still has much to offer. Henderson says he was so pleased with the results of her return to the recording studio that they recorded material for two albums, with two more in the offing. The present recording is the first in this series, and, to my ears at least, is not entirely successful.

It's true that, as Henderson points out, Farrell approaches popular music on its own terms, so that she does not end up sounding like a slumming opera singer. The voice remains an attractive instrument, and although she no longer has—or essays—the soaring high notes of yore, this is compensated for by a creamy low register. At her best, such as in "A Woman's Prerogative," with its deliciously risqué lyrics, she proves she can sing *and* swing with the best of them. The problem (and there's no polite way of saying this) is that she does not always sing in tune. Unfortunately, this problem is particularly apparent in the first two numbers, so that for the rest of the record I found that I was wary, not quite trusting her to maintain proper pitch. Perhaps the worst example is "Out of This World," where she has the additional handicap of singing against (I use the word advisedly) an extremely "busy" arrangement. In fairness to her, I must point out that stronger guidance from musical director Loonis McGlohon and/or producer Tam Henderson probably would have resulted in singing that is more consistently in tune. Also, heretical as this notion might seem in an audiophile context, the major recording companies routinely deal with singers' intonation problems by having a large number of vocal takes in a multitrack format, takes that are then edited down into a more nearly perfect composite. Of

course, there's a sonic penalty for this technique, but it *does* allow much greater control over the results.

Having thus made an argument for multitracking (never thought you'd read this in *Stereophile*, did you?), let me acknowledge that sound quality on this recording is superb—all right, much better than if they had used multitracking. Since I've updated my Arcam Black Box with the latest TDA1541A-S1 and SAA7220P/B chips, I've heard fewer differences between LP and CD formats, and, in this case, they amount to a slightly warmer tonal balance and a bit more depth on LP.

—Robert Deutsch

BERNSTEIN: *West Side Story, Symphonic Dances & Songs*

Katia & Marielle Labèque, pianos; Jean-Pierre Drouet, Sylvio Gualdo, percussion; Trilok Gurtu, jazz drums & percussion

CBS MK 45531 (CD only). John McLaughlin, prod.; Jean-Louis Rizet, eng. DDD. TT: 48:52

Arranging orchestral and vocal music for piano tends to be a task that don't get no respect. If the arrangement is a straight note-for-note transcription, it's likely to be regarded as unimaginative; if the arranger deviates from the original harmonically or rhythmically, the result will be criticized for lack of stylistic authenticity. Irwin Kostal's arrangements of *West Side Story* for two pianos and two-pianos-plus-percussion somehow preempt both kinds of criticisms: they are at once fresh *and* authentic. When the rhythms *do* deviate from what Bernstein originally envisaged (eg, the boogie-woogie "Jet Song"), this does not come across as a capricious change but as one that just allows us to hear the music in a slightly different context.⁴ The Labèque sisters and, in the *Symphonic Dances*, percussionists Jean-Pierre Drouet, Sylvio Gualdo, and Trilok Gurtu play with great panache, *élan*, and all those other wonderful French qualities. This recording is, of course, no substitute for hearing *West Side Story* in the format in which God and Lenny intended it to be heard (the CBS Original Broadway Cast has not been superseded by more recent recordings, least of all the Te Kanawa/Carreras on DG), but I suspect that Lenny, at least, is very pleased with it.

Sonically, the general impression is that of a wide, deep soundstage, with powerful dynamics and realistic piano/percussion timbres. There is, however, one significant anomaly: many of the piano passages are accompanied

by a rattling/rasping noise. The problem is confined to the left piano/left channel and is noticeable mostly in the numbers for two pianos only. (The first minute of track 12 shows the effect quite clearly.) I had several people listen to the recording in three different systems; the consensus was that the noise represents some sort of electronic artifact (malfunctioning microphone or badly adjusted A/D converter?) rather than a mechanical resonance. (Thanks to the folks at Audio One and Stereo Factory for lending their ears and systems.) I love the music and the performances, so this sonic blemish would not put me off buying the recording, but I do wish the recording team had managed to identify and correct the problem prior to release.

—Robert Deutsch

Jazz

CHET BAKER: *Let's get Lost*

Chet Baker, vocal & trumpet; Frank Strazzeri, piano; John Lewtich, bass; Ralph Penland, drums & percussion; Nicola Stilo, guitar & flute
Novus/RCA 3054-1-N (LP), 3054-2-N (CD*). Many engineers & producers. TTs: 47:43, 62:56*

The year was 1960. I was 16. A baritone sax player in my high school stage⁵ band brought me an album by Gerry Mulligan featuring Chet Baker on trumpet. From that day on, my perspective on the art of jazz trumpet changed. Chet Baker's playing epitomized what was to be called the "West Coast" sound—sparse, highly contrapuntal, quiet, lyrical—the antithesis of "East Coast" hard bop. Chet used no vibrato in either his playing or his singing, consistently producing one of the purest sounds I have ever heard. It sounded as if the edge of the tone had been carefully filed off. I switched mouthpieces to get his sound, but it didn't work.

Having recently seen the Bruce Weber film profile of Baker, *Let's Get Lost*, I'm glad my destiny took another path. Though the film did not stress the importance of Baker's musical legacy, it showed, in stark black and white, the toll that years of substance and other abuse take on a human being. My memories of the youthful Chet, with his Elvis Presley pout and glamor-boy persona, were shattered by the images of the frail, insecure, emaciated Baker of later years.

This soundtrack album from that film is a *must* purchase for any jazz fan. Chet plays and sings as well as he ever did, perhaps a little less confidently than before, but always with an emotional depth rarely heard these days. This

⁴ The Labèques' Gershwin album (EMI CDC: 7-49752 2) manages a similarly successful balance between freshness and stylistic authenticity, but, for me, their *Gladraggs* (EMI CDC: 7-47093 2) often seems too idiosyncratic.

⁵ In Houston, Texas, the idea of a "jazz" band did not meet with the approval of the school administrators.

man has lived *bard*, and it shows all too clearly in this music. The songs are melancholic, slow-paced ballads, voice and trumpet "just there," making his classic *Chet Baker Sings* (Pacific Jazz 1222) seem animated! In some respects, the record makes for perfect cozy, shared, late-night listening; in others, it represents a poignant, swan-song album by one of the most important white jazz trumpeters.

The accompanying musicians were well chosen, Frank Strazzeri being especially complimentary to Chet's style. John Leftwich adds ideal support, and Ralph Penland, featured on only five songs, does not intrude. Over half of the cuts feature Chet backed by only piano and bass, these trio selections standing out as some of the most moving on the album. Listen to "Imagination," "Blame it on My Youth," or "My One and Only Love" for glimpses into the most personal side of this most vulnerable man.

The sound does not detract from the music, though there is little air around the performers (a digital recording? The notes don't say). CD and LP sound quite similar; however, I perceived a bit more "presence" on vinyl. Chet's horn and voice are closely miked, the other instruments portrayed in a believable soundstage.

Don't hesitate to get this recording if you care at all about music aimed at the soul. Chet's voice and horn are silent now; we are left only with his recordings and some film footage. To my knowledge, the only source for Chet's early Pacific Jazz and World Pacific sessions is Mosaic Records, which is now reissuing much of his work. For now we have this session, which embodies Herbie Hancock's eloquent liner notes—"The notes became pivots connecting the chords. His intuition was flawless, his musical choices were perfect." Go for the CD: it contains over 15 minutes more of Chet Baker's music, and archival photos absent from the LP.

—Guy Lemcoe

QUEST: *Natural Selection*

Dave Liebman, soprano sax; Richie Beirach, piano; Ron McClure, acoustic & Fender fretless basses; Billy Hart, drums. With: Tom Beyer, percussion; Caris Vinentin, oboe; Mitch Forman, keyboard synthesizers
Pathfinder PTFCD 8839 (CD), PTF 8839 (LP). David Baker, eng.; Quest & David Baker, prods. TT: 54:36

At many junctures, Quest has been, and continues to be, a free-floating cooperative effort whose members—soprano saxophonist Dave Liebman, pianist Richie Beirach, bassist Ron McClure, and drummer Billy Hart—periodically come together to share musical experiences and compositions.

The quartet's latest effort, on Pathfinder, though steeped in jazz modes and meter, again defies categorization. The Beirach-composed title

track moves at points in classic straight-ahead form. McClure's electric-bass-aided, synthesized-assisted, percussion-heavy "Michiyo" entertains Metheny-like thoughts. And, while Beirach's "Nocturnal," with added percussion from Tim Beyer and oboe from Caris Vinentin, sounds as if it could be performed by Oregon, Hart's nine-minute "Amethyst Suite/Fahamivu," with its difficult, opaque rhythms, conjures Eastern and latter 20th-century, contemporary and/or "new music" styles. Liebman's "A Moody Time" (on CD only), shedding light on possible interplay between soprano sax and oboe, is quite reminiscent of the World Saxophone Quartet while simultaneously demonstrating Hart's skill as percussionist. These last two pieces are difficult, indeed.

Quest, a serious musical entity, is not for the lay person, the passing listener. Their compositions, even the more accessible ones, such as "Nighty-Nite," McClure's other borderline fusion contribution here, may confound, seeming to border the avant-garde. While never formulaic, most of Quest's compositions seem to require heavy listener input. It's as close as jazz comes to possessing a *laissez-faire* attitude.

—Jon W. Poses

THE ZAWINUL SYNDICATE: *Black Water*

Columbia FC 44316 (LP), CK 44316 (CD). Josef Zawinul, George Butler, prods.; Paul Erickson, Ivan Zawinul, engs. AAA/AAD. TT: 40:02

When was the last time you actually had *fun* listening to a Zawinul or Weather Report album? *Domino Theory*? 8:30? Well, try this one: it's a lot better than *Immigrants*, last year's dry exercise. Starting off with "Carnavalito," from 1986's *Dialects*, Zawinul's band picks up the energy where the earlier version left off, in a live recording so slick you'd swear it was studio. The rest of the album *is* studio, and the best thing Zawinul's done in a good while.

"Familial," a setting of Jacques Prevert's poem, is a modal chant, vocals heavily processed, about a son going off to war while mother knits and father wheels and deals. It's haunting, and very successful; Zawinul seems finally to have learned to handle vocals on his own heavily processed terms. "Medicine Man" has been getting some airplay—a joyful, New Orleans-style one-step celebration with Zawinul on his boyhood accordian and bassist Gerald Veasley interjecting hoodoo trickster jive throughout. "In the Same Boat" meshes African singing and Zawinul's linear Korg Pepe solos in the same style; irresistible rhythms, a fast four against a waltz. (The Korg Pepe is an electronic reed instrument invented by Zawinul.)

Then, amazingly, two Thelonius Sphere Monk covers: a brief "Monk's Mood," with

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Veasley's narration, *à la* Mingus's "Scenes in the City," over a synthesized brass chart. Followed by "Little Rootie Tootie," a straight-ahead quintet setting with pretty convincing swinging by guitarist Scott Henderson and half a dozen solos by Zawinul in as many electronic voices, this continued in "They Had A Dream," a slow jungle vamp overlaid by more synthesized soloing, but adding up to less than the sum of its parts. The master tapes are analog, and the LP sounds deeper, smoother, mellower, while the CD is flat.

With black American and Brazilian jazz, music from India and North Africa, and his own Austrian roots, Joe Zawinul has been inventing his own World Music for nearly 20 years. With the powerful, flexible band of *Black Water*, no longer an immigrant to his own musical land, he speaks without dialect. Recommended.

—Richard Lehnert

Rock

THE BODEANS: *Home*

Reprise 25876-1 (LP), -2 (CD). Jim Scott, "He and He," prods. AAA/AAD. TT: 57:09

There's something about the American heartland: Minnesota bred The Replacements, Wisconsin is home to the Bodeans, and Michigan claims The Romantics. John Cougar Mellencamp, of course, rarely leaves Indiana, and Bruce Springsteen taps a vein so direct to the heart he's clearly an honorary sobduster. What does this convocation of auteurs have in common? Seemingly, a fondness for a back-beat and a collective vision of hard-won personal values, honestly and plainly spoken, give or take a little lyricism.

Often the point of view is expressed in stories about third parties, or in the third person: Springsteen's vignettes, for example, or Mellencamp's Jack and Diane, the Bodeans' affecting love song "Brand New." Perpetually hung over and born too late for punk, even The Replacements establish a direct connection with their material, and the audience relates to the honesty. "You be me for awhile and I'll be you," they sing, in a twisted paean to empathy.

More sophisticated than some, the Bodeans fit the loose pattern of heartland rock: the material is strong, spare, well-observed, and hardly arty. Like Mellencamp's, it's surprisingly moral, supporting "traditional values" defined by a liberal, tempered by experience. If any of these more personal Midwest rockers ever listened to the self-conscious moral tales of Harry Chapin *et al*, thank God it doesn't show.

Home is the Bodeans' third album. *Outside Looking In*, the second, broke them to a wide,

pop-oriented audience thanks to a tour with U2 and a spot on Letterman. While that album moved them away from their early "roots-rock" (read "real fun beer-soaked bar band with lots of blues licks") image, *Home*, in a sense, digs down to the original ground. Many of the songs were written at home (or in hotel rooms waiting to go on and then go home: "Worlds Away," "Far Far Away from My Heart," "Red River"). The album itself was recorded with the Metro Mobile remote truck at the band's "rehearsal home," an old warehouse space in Milwaukee, WI. The tracks were cut with the musicians, amps, and drums in the same room, all played at maximum volume.

The album rocks, and it's great to dance to: the downside is that many of the tunes and a lot of the styles sound like somebody else. *Everybody* else. "Beaujolais" is a cajun-zydeco stew *ca* Little Feat nouveau; the "Killer" rock-'n'-roll tribute "Good Work" should be part of the Huey Lewis songbook, "Red River" reprises Mellencamp's "Paper and Fire," and "Far Far Away from My Heart," to pick one out, sounds like just about any track on *Born in the USA*. That said, the album sounds full and sassy, the rhythms just kick, and the whole affair is washed in harder-edged blues than any of the groups above.

Lyricaly, The Bodeans is a band which has found its voice, its eye, and its heart. Founders Sam Llanas and Kurt Neumann also work a distinctive sound: the cherished "a-ronk" they develop playing live. Unless this album is meant to be a *mélange* of all the different musical styles people call home, however, Sam and Kurt might benefit from turning the car radio off and working up more of their own arrangements. Nevertheless, the album is a pleasure, and full of surprises. Play the CD straight through and see if you can spot the track recorded on a 4-track cassette deck with two mics from Radio Shack.

—Beth Jacques

ZVUKI MU: *Zvuki Mu*

Opal/Warner Bros. 25916-1 (LP), -2 (CD). Brian Eno, prod. AAA/AAD. TT: 38:53

BORIS GREBENSHIKOV: *Radio Silence*

Columbia FC-44364 (LP), CK-44364 (CD). David A. Stewart, prod. AAA/AAD. TT: 47:22

PAUL McCARTNEY: *Ситова в СССР*

Melodiya USSR A60 00415 006 (LP only). Paul McCartney, prod. AAA/AAD. TT: ca 52:00

PAUL McCARTNEY: *Flowers in the Dirt*

Capitol C11H-91653 (LP), C21S-91653 (CD). Paul McCartney, prod. ??A??D. TT: 42:18

Things are turning upside down. It used to be that the US and Britain sent their rock-'n'-roll to Russia, and the powers there tried to ban it. The only way Soviet youth could hear rock music was via records hand-carried into the country,

or black-market second-to-tenth-generation tapes of those records.

Now it's barely 10 years before the year 2000. What with Gorbachev, *detente*, and *glasnost*, Soviet kids are getting to hear the real thing. Big American rock stars like Billy Joel and Bon Jovi are performing for thousands in Moscow. Even an ex-Beatle (a black-market favorite) has released a government-sanctioned album. So now the Russians are trying to return the favor.

Enter the debut album from the six-man group Zvuki Mu. The album contains ten self-proclaimed "modern songs from Russia" from one of that country's premiere once-underground/now-above-ground rock bands. Some of the titles: "The Source of Infection," "Forgotten Sex," "Zero Minus One," "Leave-me-alone," and "Traffic Policeman." It was recorded in Moscow back in November, 1988, and mixed in London. Producer Brian Eno needs little introduction. The songs are well-recorded. There is professional artwork on the covers, and English lyrics for everyone to follow along with the tunes.

You may have noticed I've avoided commenting on the music. That's because I'm not normally a fan of run-of-the-mill Eurodisco music, and one might understand how I could be especially bored with such music sung entirely in Russian. Without trying to insult anyone involved, listening to this album reminds me of the house band I've heard in a Russian nightclub in New York doing their disco version of "Livink een a Mahterial World." There must be better.

Enter Boris Grebenshikov. His album was recorded in London and New York by David A. Stewart of Eurythmics fame. They used "western" musicians and some famous "western" female back-up singers (Annie Lenox plus Bananarama/David's wife Siobhan Stewart) and wound up with a very "western"-sounding album. There are 12 cuts. Some titles: "The Postcard," "The Wind," "The Time," "Winter," and "Fields of my Love." All songs are sung in English.

The music is still Eurodisco-based, but the title cut, about the Soviet government's new policies, is worth the price of admission. And, with its strong folk-rock rhythm guitar throughout, "Radio Silence" makes for good listening (and a pretty good video too!). The rest of the album, though, is forgettable, even Grebenshikov's ode to his oppressed communist brethren in "China," but there's hope for more top-quality rock from the USSR in the future, maybe even with Soviet producers in charge. We shall see.

That brings us to *Снова в СССР* (*Back in the USSR*). Everything on this LP is written in Rus-

sian. That's because this is a release for the Soviet Union only, on the government label, Melodiya. But the music is in English. That's because the album is by Paul McCartney, recorded about two years ago, with friends, in Britain, just for the Russian market. Part of the proceeds go to help victims of the Armenian earthquake.

The songs were remakes of some early rock-'n-roll and early Beatles favorites: "Kansas City," "Lucille," "Ain't That a Shame," and "Lawdy Miss Clawdy." Paul even did an Elvis ditty ("That's Alright Mama").

Originally, EMI said Melodiya could press a maximum of 40,000 copies, none for export. Instead, 50,000 copies of the 11-song collection were pressed. They sold out immediately. Second pressing included an additional cut, Gershwin's "Summertime."

When word of this album reached the West, demand was high, to say the least. Smuggled copies went from the suggested 4-ruble price in Moscow (\$6.60) to \$100-250 in London and New York. By the time my copy reached the underground specialty stores, it was selling for \$25. It must be the third pressing because it contains 13 cuts, including "I'm Gonna Be A Wheel Someday." Rumor has it that 20 cuts were recorded at the session, and that someone has released them all on a bootleg CD. Despite the interest (and recently the airing of some cuts on one of the local FM stations), there are no plans to release the album here.

Ain't that a shame! This is really McCartney's best effort in years. A lot of years. That's because he wasn't trying to make this better than his previous work. He wasn't trying to prove anything. It seems he was trying to have fun, and it shows. Recorded quality is good: no overdubbing, no post-production work. Just a glimpse of McCartney live, having a great time doing some old favorites. If you can, try to pick up a copy of *Снова в СССР*—it will reinforce the reasons why the Beatles were as huge as they were.

And finally, that brings us to the album that McCartney wants us to hear, *Flowers in the Dirt*. Twelve cuts. All new stuff. Nicely produced. Well-recorded (CD and LP). Opening cut, "My Brave Face," one of two McCartney/Costello collaborations, is pretty good (nice video too!), but forgettable. Even taking into account pleasant cuts such as "We Got Married" and "Figure of Eight," I think the entire album is forgettable.

The problem is that this time around our hero seems to be trying to prove something—probably that he's capable of recording a good new album! He's worked very hard to do so. I think he worked too hard on mediocre-to-

good material, and the results are just okay. Others argue that *Flowers in the Dirt* is his best album in 8 years or so. No way—it's just the best album Paul has made available to us in 8 years or so. I say save your money—wait for what is now called "The Russian Album" to be released in this country. Better yet, if you're lucky enough to see Paul on tour this year, ask him to do "Midnight Special" or "Don't Get Around Much Anymore." You can't go wrong.

—Gary S. Krakow

LAURA NYRO: *Live at the Bottom Line*

Cypress YL6430 (2 LPs), YD6430 (CD). Mark Linett, eng.:
Laura Nyro, prod. AAA/AAD. TT: 62:00

Back in the early '70s, every one of my female friends (though none of the men) owned at least two well-worn Laura Nyro albums—*Eli and the 13th Confession* and *New York Ten-daberry*. Nyro proved, to an entire generation of coeds who were just a little scared of Janis Joplin, that a white girl *could* have soul (even if a sense of humor sorta went missing). The ultimate New York singer/songwriter, Nyro took Brill Building pop and soul, mixed in some Phil Spector and Motown girl groups, and raised it all to the level of histrionic spiritual apotheosis. Laura Nyro concerts of the late '60s were seances, this intensely shy, brilliant teenager lost in her own long, black hair, pounding the piano, her big, womanly voice rising and falling in cries of orgasmic joy and anguish so close you couldn't tell 'em apart. You loved her or you hated her.

Though I'm no '60s chauvinist—well, maybe just a little—sometimes it's hard to remember just how good and exciting her—*everyone's*—music was back then. This new Laura Nyro album sounded *great* to me until I dug out my 20-year-old copy of *Eli* and picked myself up off the floor 46 minutes later. Now *Live at the Bottom Line* sounds no more than pretty good. But maybe record reviewers should declare a moratorium on comparing the current work of surviving '60s pop musicians with what they achieved back then. After all, this *is* the best Laura Nyro album since 1971, and that *is* 18 years.

Bottom Line is Nyro's third comeback album. The first, 1976's *Smile*, ended the five-year silence that followed *It's Gonna Take a Miracle*, her last record as a pop star. *Smile* was comfortable, but comfort was *not* what anyone listened to Laura Nyro for; you could fall asleep to it, and many did. The unmemorable, soft-centered *Season of Lights* (her other live album) and *Nested* followed in quick succession, as CBS took a bath on the five-album, million-bucks-apiece deal they'd signed with Nyro right after 1970's *Christmas and the*

Beads of Sweat. Another six years of silence, then 1984's much better (though no match for any of her '60s records) *Mother's Spiritual*, which CBS released unpromoted, then let die a quick death. (None of the last four albums are now in print.) Five more years passed, labelless, and Nyro finally left her house to tour the country last year to great notices, the result *Live at the Bottom Line*.

Considering the times, it's a very good album. If Nyro no longer has her head in '60s apocalyptic clouds, she has managed to pull it out of '70s softrock sand. She offers new tunes, talks seductively to the audience ("you're my prisoners," she breathes huskily), and recreates some of her old songs. "And When I Die" is no longer the hallelujah hit single BS&T took to MOR fame, but a dark, slow, minor-tinged meditation by a woman more than 20 years older. "Wedding Bell Blues" is here too, as are "The Confession," "Stoned Soul Picnic," and "Eddie." The new songs can't match them, though they have their moments. "Roll of the Ocean" starts out rapwise, then rolls out into the classic Nyro piano groove that has never really left her, even in her worst work, and that has always made it a pleasure for me to listen to three or four of her albums right in a row. "The Japanese Restaurant Song" starts out telling of Nyro's dining out with her own unruly children, but quickly lifts into her fantasy of becoming a geisha with "a radical feminist bent" (applause from the delirious audience). The poetry is as succulent as ever, though her tendency toward opaquely personal pastel metaphors has always bordered on the cloying.

No, there's nothing here as good as any song on her first three records, but that was the timeless American pop of the gods; Laura Nyro got to write more of those songs than almost anyone except the Beatles, and most of them before she was 20. But she's fronting the best band she's ever had, built around a pair of the New York Italian rock musicians in the Rascals mold she's always cultivated (Felix Cavaliere produced *Christmas*, Charlie Calello—where are you now?—produced *Eli*). The arrangements are uncluttered, the playing clean, always interesting, and Nyro gives her band room to stretch their axeheads a bit. And Cypress's analog sound, in the tradition of their Jennifer Warnes release *Famous Blue Raincoat*, is warm, full, rich, and sounds very live. The CD is a bit glary on vocals, the LP a bit deeper in soundstage.

This is the *real* Laura Nyro comeback album. If you haven't heard any of her records since 1971, and if you loved her then, this might be the one. If you hated her, it might be time for second thoughts.

—Richard Lehnert

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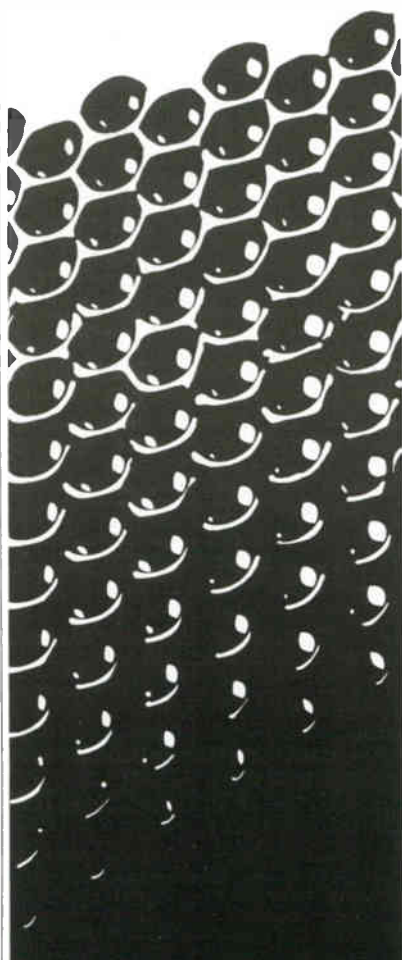
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Sony Discman complaints

Editor:

Thank you for bringing to our attention your readers' comments regarding service for Sony Discman products.

We were quite dismayed to read the comments of both Stephen Sweigart and Richard Myers in your current issue. Consequently, we contacted both of these gentlemen, to learn firsthand more details about their individual experiences.

While Mr. Myers and Mr. Sweigart each experienced different types of problems, both of their concerns seem to center upon the operating procedures of the independent service stations involved. Unfortunately, Mr. Myers discarded his Discman some time ago, so there was little that we could do at this time. However, Mr. Sweigart told us that his final service bill came to about \$75 and his D-15 is now working as well as when the problem first occurred.

Needless to say, any incident that causes frustration to our customers is, of course, regrettable. That's why Sony works diligently to resolve all problems that we become aware of as soon as they occur. Fortunately, even though Sony sells tens of thousands of Discman products each month, these types of repair problems are not the rule but the exception.

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Kathryn O'Brien

Director, Sony National Customer Relations

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At the outset, we give thanks for the bold and forward-looking editorial policies of this magazine, which make it the excellent forum that it is.

We deeply regret any negative feelings or impressions which this ad might have caused anyone. That was *not* our intent!

May we direct the readers to the Mondial ad which appears in the same September issue: "The better the advertisement, the worse the product." Tony and Bill of Mondial are very creative people. Humor is *always* an attractive thing, provided (of course) that it doesn't take from anyone's dignity. We at Amrita Audio are happy to be a part of the fresh wave of humor in high-end audio. And yes, everyone has their own brand of humor. Thank God there is still a First Amendment.

As LA said: The ad did not malign animals. Nor, for that matter, did it malign anyone or anything! Our desire was to give folks a good laugh—and, for many, that is exactly what it did. Isn't it neat to live in a country where each one of us can have his or her own opinion, and feel free to state it with as much vigor as we feel? Finally, only a masochist would cancel her or his subscription to *Stereophile*.

John D. Andre

President, Amrita Audio

UltraAnalog & dbx

Editor:

In the September 1989 issue of *Stereophile* (p.26), Peter Mitchell incorrectly reported that the "rights to raw dbx circuits, such as the high-resolution A/D converter designed by Bob Adams, have reverted to the former dbx engineering group." It is true that a new company, THAT Corp., has been formed and has rights to certain dbx products. These products do not include the dbx A/D converter.

Recently, UltraAnalog, Inc., entered into an

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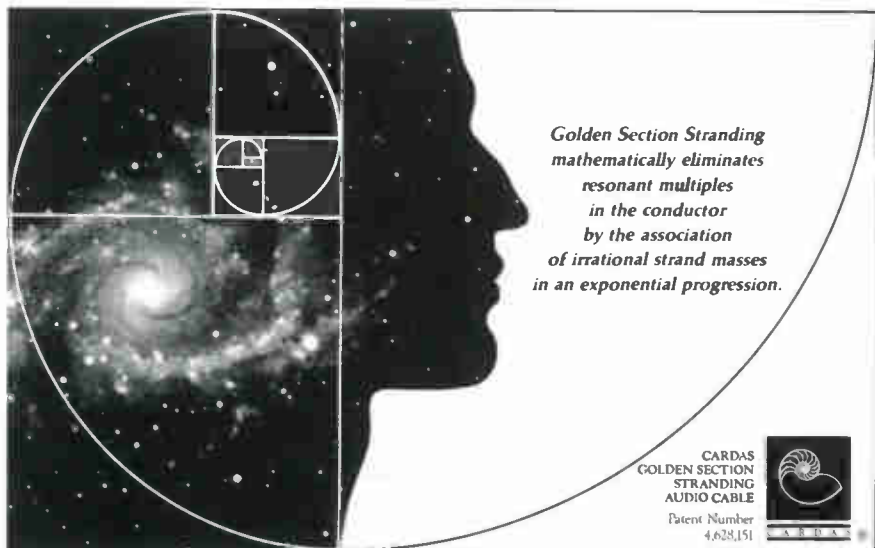
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agreement with Carillon Technology, Inc., parent of dbx, that gives UltraAnalog, Inc. the exclusive marketing and distribution rights in North America and Europe to the dbx A/D converter.

Dick Powers

President, UltraAnalog, Inc.

Sansui AU-X911DG integrated amplifier

Editor:

Thank you for the draft of the Sansui AU-X911DG review. We are grateful to *Stereophile* for the efforts extended in reviewing one of our products.

We do, however, feel that the reference to our power supply as not being state-of-the-art is somewhat subjective. The quality of the power supply is totally consistent with the product's performance objective. We are not in a horsepower race and don't need to make extravagant claims for power increase into low-impedance loads. Even at low impedance, the AU-X911DG delivers more than adequate power for high-quality performance.

We also feel that if the blown fuse is to be mentioned, it deserves more explanation than was given. The fuse in question was not part of the user-accessible protection circuits. It was within the transformer itself and should have reacted only under the most dire threat to the integrity of the unit. So far as we know, we have never had a similar failure. Since examining the sample (which LG used for several months), we have subjected random pieces from inventory to the same EIA standard conditioning without a repeat of the failure.

Deborah Hefferan

Advertising Manager, Sansui Electronics Corp.

Quicksilver KT88 monoblock amplifier

Editor:

Thank you very much for requesting Quicksilver Audio's comments on your review of the KT88 Mono amplifiers.

We choose to use the KT88 tube for its sonic performance. We have tested the best of the 6550s, and even though some manufacturers use them (a 6550 costs less than one-half of a KT88), our commitment to quality demands the extra investment in KT88s. All the tubes that come from China are subjected to individual burn-in and AC- and DC-matching. Eighty percent of the KT88s meet our rigid

specifications. The other 20%, while still operational, are rejected.

In your testing procedure you noted that you used 11' of speaker cable, contrary to our recommended 3 to 5' maximum. I realize you were simply plugging in the amplifiers to your preset ideas; however, individual owners will be able to make minor changes to their systems to realize the maximum sonic benefits of the amplifiers. To allow the amplifiers to be that close to the speakers, lengths of up to 100' of interconnect cable can be used with many preamps, including the Quicksilver preamp.

At least 30% of Quicksilver Mono amplifier owners use non-modified Quad speakers. I have never had any of these owners mention muddy or soggy bass while using the KT88 amps. Modification of any product immediately makes that product suspect. For two years I have had a pair of Quad speakers in the Quicksilver lab, which I find to be an exceptional match to the KT88 amp.

The Celestion SL600s, the Acoustat Spectra 22s, and the Martin-Logan Sequel IIs all have been tested in our lab and measure at least 6dB under our minimum recommended level of 88dB 1W/1m efficiency, which makes our KT88 Mono amp totally unsuitable for use with any of these three speakers.

I thoroughly encourage "in-home auditions." As we do no advertising, our product is sold by word of mouth and most of our sales result from in-home demonstrations.

Mike Sanders

Quicksilver Audio

Tera 621C TV monitor/receiver

Editor:

First, may I thank J. Gordon Holt for his thoroughness and courtesy in the review of Tera's model 621C.

Any such review is, of course, highly subjective, particularly so in regard to a video product, and while we respect Gordon's personal opinions, they in no way alter our fundamental belief that what we are doing with our approach to picture interpretation offers the consumer the most vibrant, exciting televisions on the market today.

Gordon refers to the 621C as "a stunning performer," and, "in short, the picture looked so good that it ceased to be a barrier between me and the film I was watching." To achieve these reactions, yes, we have adopted a different

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approach, and yes, there are some inevitable tradeoffs: yes, our picture does (at times) take on a blueish hue, *but* time and time again we at Tera are told the same thing that Gordon noted: *ie*, "the color has a vividness and saturation that remind me of the best Technicolor films."

Surely, the ultimate goal of all manufacturers of consumer electronic products is to give the consumer the most entertaining and exciting performance possible. One company's interpretation of this criterion is not necessarily the same as another's, but if new interpretations of existing technology can heighten the consumer's enjoyment, then we believe the exercise is justified.

In conclusion, may I say that in giving one of our products (for review) to someone as passionate and intense in his views as Gordon, we knew from the outset that we would be challenged. But we felt ready to face up to such a challenge. We hope that, as the worlds of high-end audio and video move closer together, *Stereophile* will allow us and other video manufacturers to offer products for critical review so that your readers can benefit from your tough but fair reviewing standards.

Ron W. Fone

President, Tera Electronics, Inc.

Reference Recordings *A Video Standard*

Editor:

Reference Recordings did not provide the funding for the actual production of the program. They did contribute their considerable audio expertise in the production process. RR's well-known attention to detail and noted audio capability are the major reasons why this program is on that label.

Consumers and professionals are seeing many of the test patterns in this program for the first time. They were first brought to the attention of the video professional by my research in monitor calibration, through SMPTE (Society of Motion Picture and Television Engineers).

If you study the film section very carefully, a case is made for both print and negative transfer. The choice depends on the "look" the producer wants. Until the introduction of the new Rank Transfer in June 1989, the choice had to be made for each program being transferred to video. We will probably see more release print material being transferred once the new Rank

is commonly available.

In the Electronic Field Production chapter of the disc, two video signals were brought together to form an 8:3 aspect ratio. The line down the center is a geometry problem between the two cameras. The right edge of the left image does not exactly match the left edge of the right image. Lens and electronic scanning errors, in combination, cause the line. From the album cover: "This video is a demonstration of our field production crew being creative, not of a new format in the early stages of evolution."

The film segment of the program has been displayed, directly from the disc, at several major professional conventions, on properly calibrated monitors, before film-to-tape colorists, television engineers, and film professionals. There have been positive comments about the quality of the transfer, and no negative comments. The calibration of the monitor being used to view this program by the reviewer, the gray scale in particular, is probably not correct. The wrong "color" of gray would account for the color shift noted. The film print and negative were transferred on a 4:2:2 Rank-Cintel Film chain directly to D1, the very best that can be done in our 525-line television system.

A few of our customers have called to report problems with audio not being properly encoded for surround sound. First of all, two of Dolby's best people were present during the final audio edit session to insure proper surround-sound encoding. Second, a copy of the disc was taken to a professional audio studio to check the audio encoding. Yes, the audio is properly encoded; and yes, the disc has uncovered some equipment problems in the playback path. It is doing its job.

Mention was made of difficulty in reading some of the text on a monitor. The graphically generated text is from a Dubner character generator, specifically designed for proper character display in the NTSC format. The disc signal, fed as an RF channel even to an older, 1980 Sylvania receiver, is quite readable. Displaying the video from the disc on a professional monitor shows no hint of legibility problem in any of the text. There are several slides in the monitor calibration and video recording equipment sections that could create a challenge to some consumer products. That is one of the purposes of this disc. They rep-



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resent valid NTSC information and are all readable on industrial-grade monitors. (Industrial grade is below broadcast grade.)

Chapters 4 and 5 do not contain picture stops, places where the disc will come to an automatic freeze frame. The reason for this is that there are three different programs going on at once in these two chapters. Placing picture stops for one of the three programs would interrupt the use of the other two. Picture stops are used in nine places in Chapter 6, with three others in the rest of the program.

Video test patterns have been placed in three sections of this disc: just after the beginning, toward the middle, and near the end. There are several technical and some program reasons for doing this. In the CAV disc format, video signal-to-noise and resolution improve from the beginning to the end of the program. Test signals allow that improvement to be quantified.

The book that comes with the disc really shouldn't be a book, it should be a computer data base. As you go through the program in detail you'll realize that most topics in video are dependent on other topics. As an example, the subject of color quality of a picture is dependent on gray scale. The "color" of gray is covered before the color section. The use of a book with a highly interactive program and subject material is a limitation in itself.

The SMPTE Resolution chart is properly centered in the video. The Indian Head test pattern is missing about 2% on all of its edges. The Indian Head chart has not been available for many years. The only copy we managed to find in usable condition was altered in the Quantel Paint Box/Harry combination. There were things at the edges we did not wish to display. It is displayed in the program for archival reasons, and is one of the best representations of the pattern currently available.

The opening studio sequence contains "state-of-the-art" video directly from the RGB output of the BTS solid-state LDK-90 camera. The film transferred to video in this program was done on the best equipment available prior to June of this year. The subject material in the film was designed to show the latitude of film for production and the potential problems of transferring film to video. It was also the best technical demonstration material available to the project at the time of the production.

The request for three low-level lines for setting the initial cutoff points of the screen con-

trols has no validity as an NTSC signal. This is a CRT RGB-domain function, independent of scanning and/or the NTSC-to-RGB decoder. In most sets, both the incoming signal and vertical scanning are turned off when the screen controls are initially set.

Providing print material for comparison to the video has validity only if the primaries used to print the material exactly match the primaries of the television system. The light source used to illuminate the print material has to be 6500° Kelvin with a Color Rendering Index (CRI) of 95 or better. Most printing primaries are completely different from video primaries, a real problem in desktop publishing. A 6500°K bulb of a CRI of 95 or better will increase the cost of a light by a factor of 20 to 40 times. The correct bulb is something most consumers just do not have.

This disc is interactive. It will require many hours of actual use before the viewer will begin to realize just how much information is there.

This disc does point out both audio and video equipment problems. Most people jump to the conclusion that the disc is at fault because these problems have never been seen or heard before. The disc is not perfect. It does, however, have the capability of challenging most consumer audio and video equipment.

Joseph J. Kane, Sr.

Producer of A Video Standard

AudioQuest

Editor:

It is enlightening to witness the audio wanderings of a consummate professional like Sam Tellig (aka Audio Anarchist). Sam is certainly not the first person to be hopelessly confused while trying to evaluate what a given product does or does not do right or wrong in an audio system.

I certainly appreciate that at the end of this journey Sam finds himself using the AudioQuest Clear speaker cable and AudioQuest Lapis interconnect. If Sam had followed our (almost always ignored) advice to all reviewers to conduct bypass testing of cables, he might have found the route to enlightenment much more direct.

The awkwardness of misevaluating a product's quality because of other flaws in an audio system is a problem all of us professionals and consumers face all the time. This often leads to our opinion-leaders hiding behind a shield

labeled "compatibility." Bypass testing can quickly eliminate this confusion by showing what the actual character of a cable really is. This allows for the accurate predicting of performance in almost all audio systems. There are very few exceptions where a particular brand of amplifier is marginally unstable and requires a filter between it and the speaker; this is literally a one-in-a-thousand problem.

It is somewhat unfortunate that the best cables don't cost 10 cents/foot, that the best amplifiers aren't \$10, that a beachfront lot in California isn't \$100. It is also unfortunate that some cables, some amplifiers, and some real estate cost more than they are worth. Luckily this is a free country where the consumer is free to vote with his/her wallet. In fact, it is in large measure the consumer's responsibility to vote carefully, to reward those manufacturers and dealers that are deserving. If this responsibility was taken more seriously there would be less variation in the quality of comparably priced products. There would be more competition in the area of quality instead of marketing.

I make no apologies for the fact that AudioQuest Clear Hyperlitz costs \$50/foot. While this cable is very simple in philosophy, it is very expensive to construct and uses very expensive materials. On the other end of our line is a speaker cable called F-14, which costs 79 cents/foot. I might even suggest that Sam would have preferred F-14 on the system with which he initially did not like the Clear. It is extremely clean but not as revealing as the Clear. F-14 also clearly demonstrates an absence of any plot to rob helpless consumers. We have given an entire spool of F-14 to *Stereophile* so hopefully as many people as possible can decide for themselves what a cable is worth.

Sam's heavy-duty investigating has apparently turned up a cable with a fancy name on it that really is just a generic product. I am sure we would all like to learn what this cable is rather than enduring a slanderous attack on all cable companies as a result of Sam's inside information. I design every AudioQuest cable from the strand up. There has never been a generic AQ cable. For that matter, hardly any specialty cable made in the US is generic. If Sam knows of any such cable, then please stick to the facts!

As to record wear, I have 3500 records in perfect condition. All have been played with a vari-

ety of MC cartridges over the years. Some of the demonstration/testing collection have had certain songs played over a thousand times. The wear after a thousand playings is surprisingly subtle on a well-maintained record. I hope Sam will both learn about record care and the dynamics of record wear before playing any more of his precious records. Has he heard of tip mass, stylus shape, proper tracking force, arm resonances, and feedback? Does he know not to use blank records to set anti-skating?

Sam sets an example for all of us about just how easy it is to fall into potholes on the road to audio nirvana. I know my trip isn't over yet, and I gather Sam's isn't either. I sure hope he can avoid getting lost like Pooh and Piglet, who circled the same group of trees how many times?

William E. Low

AudioQuest

AudioQuest

Editor:

"Stop Press!" indeed. Wow! Is Sam Tellig an ace investigative reporter or what? You really nailed us on this one, Sam. Since you already have in your possession my "smoking gun" memo of September 1, I guess I should come clean and let the truth out.

Recently, *Audio* magazine published an article by R.A. Greiner (written in 1980!) that, in essence, states that sonic differences reported in specialty speaker cables are nonexistent and are a result of fantasy on the part of the listener. It does not appear that Mr. Greiner actually listened to any of the cables under test. In any case, none of the cables mentioned in the article are available today.

In the following issue of *Audio*, Ivan Berger's column contained an attack on the specialty cable industry by Frank Van Alstine, who accused all cable manufacturers of knowingly selling goods without any merit, in other words, accused the cable industry as a group of committing fraud.

Not surprisingly, audio cable manufacturers were upset by these articles. Sam, I'm sure you can understand why. I mean, how would you feel if someone questioned your journalistic integrity by accusing you of having working relationships with audio manufacturers and distributors outside of your involvement with *Stereophile*?

Over the close to seven-year period of time that I have been with AudioQuest I have had nodding acquaintances with two or three other

wire manufacturers. This has consisted exclusively of hallway CES show greetings of the "how's everything going" variety. After these articles appeared, I heard from these manufacturers and from some others that I have never had the occasion to meet or speak with. There was (and is) a consensus that because the credibility of all wire manufacturers had been questioned, and because *Audio* has indicated a reluctance to give the matter further press, a letter to *Audio* setting forth generalized feelings and attitudes in response, signed by all wire manufacturers, would have a better chance of getting published than a barrage of individual letters from cable companies.

I note that you did not feel it appropriate to quote from the letter to *Audio* because it was not addressed to you. Neither was my cover letter, but what the hell, in the name of better investigative reporting let's take a sneak look at the concluding paragraph of the *Audio* letter.

"This is not a case where a few cultists have banded together to pull something over on the reasonable majority. This is a situation where the vast majority hear differences, differences that affect the performance and value of an entire audio system. American high-end cable manufacturers have become among the world leaders in the cable industry, but it did not start here. The big Japanese companies, the ones whose products often get the US reviews that say 'everything sounds more-or-less the same so you should judge by features and price,' these same companies are the ones who pioneered the cable industry 15 years ago. Sony, JVC, Denon, Hitachi, Pioneer, Kenwood and Nakamichi are just a few of the better-known companies who have sold specialty cable and/or are very careful about the cable inside their products. Audio Research, Madrigal, Krell, Apogee, and Threshold are just a few of the world-class US manufacturers who supply their own lines of specialty cables, in large part because they are concerned about the proper presentation of their primary products. Consumers, reviewers and manufacturers all know what Mr. Greiner doesn't know; listen first, think second."

Sam, I hope this sheds a little light on your quote of my cover letter. I'm afraid that I'm not professionally qualified to comment on your apparent fear that there is something sinister about wire manufacturers signing a common letter.

By the way, if you want to sink your teeth into some real investigative reporting, why not look into *Audio*'s motivation for publishing these articles in the first place? Very interesting.

Joe Harley
AudioQuest

Wildboar Records

Editor:

Thank you for the kind review in your August issue of our first LP, *Bach & Bobm: Extravagant Harpsichord Music* (WLBR 8101), with Edward Parmentier. This disc has been on the market for more than five years, and continues to attract a following.

Wildboar recordings are distributed by Harmonia Mundi USA, or at least they were until that fine company decided to stop distribution of black vinyl. The address you published is accurate, but dealers and readers desiring to obtain Wildboar LPs (there are five titles) would do better to contact The Musical Offering, 2430 Bancroft Way, Berkeley, CA 94704, Tel: (415) 849-0211. Wildboar CDs continue to be distributed by Harmonia Mundi USA.

A brief note about unequal temperaments: Meantone temperaments were almost universally employed in the early 17th century, and as the century wore on composers began pushing at the harmonic limitations imposed by such tunings. The dissonance which Mr. Berkeley describes as "downright out-of-tune" is intentionally grating to the ear, but by definition perfectly in tune. It is difficult for the modern ear to let go the idea that there is some sort of God-given "in-tuneness" which is unchanging from century to century. Many people will tell you in all seriousness that they or their friends were born with "perfect pitch," as if A=440 is a natural phenomenon, engraved upon our genes. Pitches and concepts of intonation change. I find it intensely interesting to explore the ramifications of tuning systems used centuries ago. Mr. Berkeley and I could have a protracted discussion on this topic, and it would be a time-honored debate: musical journals of the 17th and 18th centuries are filled with arguments on the same topic.

Edward Parmentier is featured on a new Wildboar CD to appear this fall, *Seventeenth Century French Harpsichord Music*, which employs a tuning that can only be described as extreme. When we were recording certain passages by Froberger, Mr. Parmentier exclaimed

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that the dissonance caused the hair on his arms to stand. Precisely the appropriate response. Mr. Berkeley will probably hate it. I love it.

Joseph Spencer
Wildboar Records

Symdex loudspeakers

Editor:

We would like to thank Lewis Lipnick for his kind words regarding our loudspeakers (CES show report Vol.12 No.8) and say that it was a pleasure discussing music with him. As well as the new Epsilon Signature speakers that Mr. Lipnick commented on, Symdex introduced a new two-way floor-standing model, the Gamma Signature, that incorporates many of the same features as the larger Epsilon for \$1600 the pair. Finally, Symdex has recently moved to a new location. The new address is: Symdex Audio, Box 7096, Gonic, NH 03867. Phone: (603) 335-2549.

Elsa and Leland Wallace
Symdex Audio, Gonic, NH

EAR recording equipment

Editor:

I was certainly pleased to read your positive

comments about Tim de Paravicini's EAR recording equipment. [In "Stereophile Cuts An LP," Vol.12 No.9 p.66—Ed.] There is only one thing that I'd like to add: the equipment is distributed in the US, and readers who want dealer information may contact the distributor: Audio Consulting & Engineering, 1909 Judah Street, San Francisco, CA 94122, Tel: (415) 661-4143.

Paul Stubblebine

Audio Consulting Engineering Services
San Francisco, CA

Martin-Logan Sequel II

Editor:

Thank you for bringing to light some of the virtues of the Sequel and the real strengths it brings to the marketplace [in October's "Follow-up" review by Dick Olsher, Vol.12 No.10].

Gayle Martin Sanders

President, Martin-Logan, Ltd.

The Waveform loudspeaker

We received a response to LA's review from Waveform's John Ötvös which was unfortunately too late and too long (more than 4000 words) to be included in this issue. It will be published in the December issue.

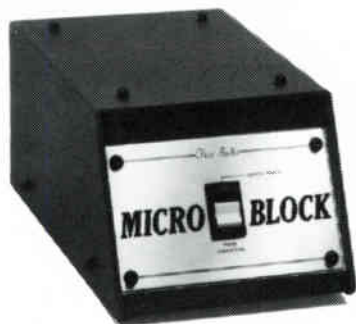
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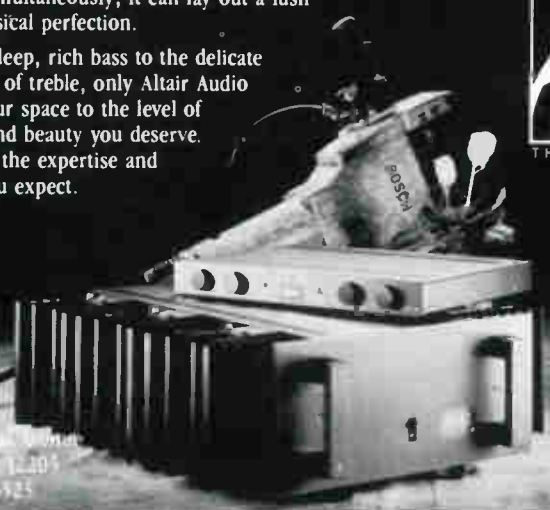
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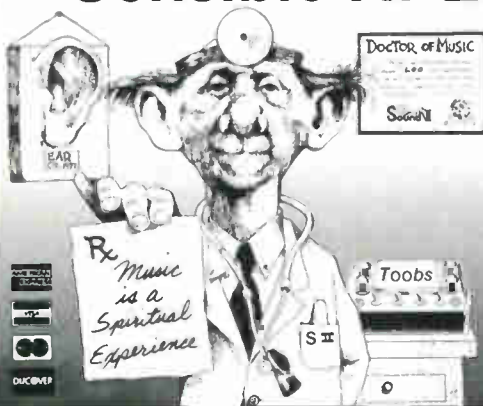
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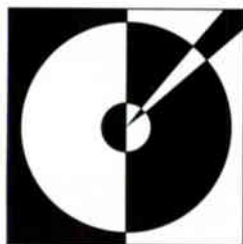
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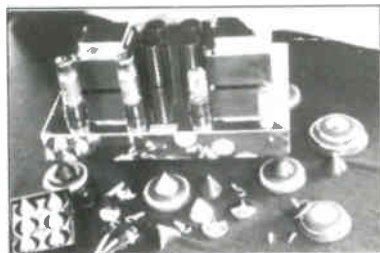
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THE FINAL WORD

WAMMs—Second Time Around

I reviewed the WAMM Series III loudspeaker back in 1983 (Vol.6 No.3). At the end of September I invited myself to the house of Wilson once again, and Sheryl Lee and David were kind enough to accept. They treated me royally, arranging for a visit to George Lucas's Skywalker Ranch in nearby Marin County. The occasion was Harmonia Mundi's first recording at Lucasfilm's scoring stage, designed for use in recording soundtracks for films (which are projected on a 44' x 22' screen during recording so conductor and musicians can be perfectly in synch). On hand were many familiar faces: the Philharmonia Baroque Orchestra, Peter McGrath manning his Stellavox(es), Nicholas McGegan conducting and accompanying on harpsichord, and Robina Young running the whole show.

This scoring stage presents an ideally adaptive acoustic environment, with an area of 5000 ft.², 30'-high ceilings, and movable absorptive panels to vary reverb time from 700ms to 3.5s. Peter, Nicholas, and Robina were delighted. The acoustically isolated control room overlooks the stage and has lots of space for recorders, producers, recordists, and kibitzers (me).

Sheryl Lee and David had brought me along to show off the Wilson WATTs in a control room, their designed-for environment. The WATTs are, in fact, very good in this application. Though the sound from microphones through the WATTs didn't exactly duplicate what I heard sticking my head in the scoring room (it couldn't have—the mics were about 45' away), the WATTs were impressive in their ability to give you the *feel* of the live music.

And they were all too good at revealing differences among the various recording media Peter McGrath had on hand: a Sony 2500 DAT recorder whose digital section was fed by a proprietary 128x-oversampling A/D converter, the Stellavox used for all of HM's US recordings, and an identically set-up Stellavox (loaned to Peter by Michel Reverchon) with Dolby SR noise reduction in and out. For those who love the convenience of DAT or the noise-reduction capabilities of SR, the results were discouraging: both simply removed the reason for Peter's being there. He'd captured a wonderful ambient sense of the hall on the Stellavox, and 80% of

that was sheared off by digital encoding or Dolby SR. There were tonal-balance differences as well; the "naked" Stellavox sounded the most real. The digital did nose out Stellavox+Dolby SR by a hair, but neither represented an acceptable system. The difference between live mic feed and off-tape from the basic Stellavox, on the other hand, was so minuscule I couldn't reliably detect *anything*. Impressive.

My experience this time of the WAMMs, again in Dave and Sheryl Lee's home (different address), was even shorter than my visit in '83, but enough to get an initial feel for the capabilities of the system. The primary ingredients have changed: the Crown equalizer included in the system now has discrete op-amps rather than ICs, and the midrange units, which used to be modified Brauns, are now wholly made by Wilson along the lines of the WATT.

The system, driven by the massive Krell Reference amps and a single KMA-200 on the bottom end, had the same ease and size as before. As I told Dave, though, I think the system has shifted somewhat away from the romantic and toward the analytical. Now differences between different records were more startling; comparisons between master tape and LP were much more conclusively in favor of tape; recorded annoyances were more annoying. Superbly recorded sources came off superbly, but—in the pair of WAMMs I'll never be able to own—I would probably choose to have Dave introduce a gentle rolloff above 8kHz. These WAMMs were also set up in a much smaller room than before, with a minimum of space behind the speakers, which tends to yield a sound that puts me off.

But this is nitpicking. The WAMM is a heroic endeavor, appreciated by its purchasers as such. No one with this kind of money to spend on reproduced sound should pass up the opportunity to audition it, either at a local dealer (there aren't many) or at Dave's home. We at *Stereophile* would welcome a chance to spend more time with the WAMM under more familiar circumstances. Unfortunately, Wilson Audio's budget for review samples would have to be downright extravagant to afford us this opportunity. Sigh.

—Larry Archibald

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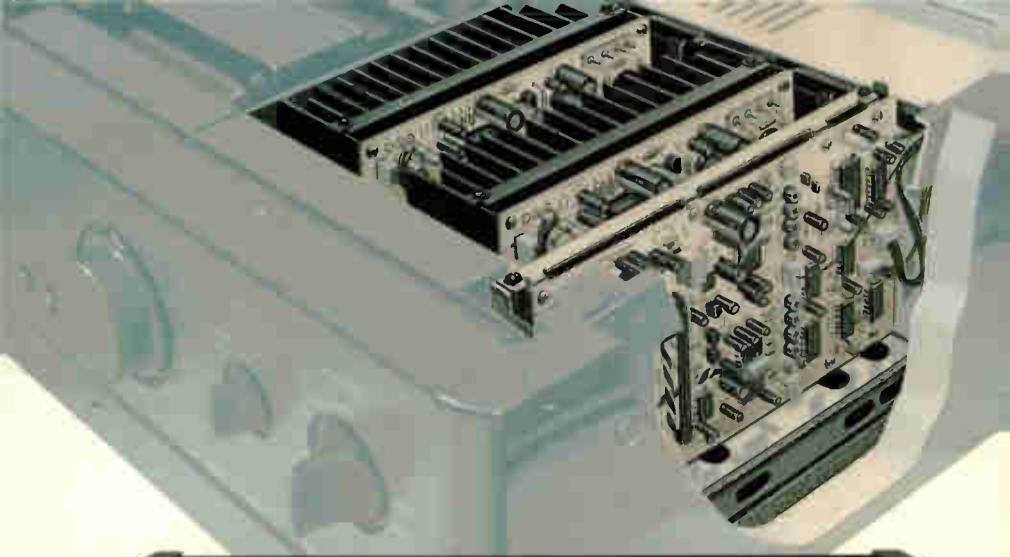


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