The Loudspeaker Issue
Part One

Sommerwerck in the Summer - The 1985 Summer CES
Sam at the Show — The Cheapskate Hits the Windy City
Acoustic Research, Connoisseur Series loudspeakers, look as good as they sound and sound as good as they look. Their beauty extends to every facet of system design. Each acoustic element is precisely combined to ensure accurate reproduction for a refined listening experience. Unwanted sound wave reflections are reduced by rounded cabinet edges and recessed drive units which enhance the loudspeaker appearance as well. A uniquely designed stand (optional) places the system at the optimum listening height. A high quality Crossover Network, long-throw woofers and domed tweeters enable optimum dispersion, smooth frequency response and large signal performance. The new Acoustic Research, Connoisseur Series is available at select audio retailers. Stop by to see and hear for yourself, the beauty of accurate sound.
The Monster Speaks:

Answering questions about linear crystal.

Many audiophiles have asked us recently about linear crystal type copper and whether or not we are going to convert our designs.

Extensive evaluation of linear crystal has shown that its benefits have been exaggerated out of proportion. In fact, our designs have progressed far beyond that of just looking at the quality of copper. Monster uses 99.999% high purity copper. Our listening tests have shown that beyond this, the type of copper used has little or no effect on the sonic performance of audio wire. The complex constructions employed in our designs have a far greater influence on the overall sound than do the type of material used. Perhaps compared to conventional "straight" copper designs, linear crystal has more of an advantage.

You Can't Wind It.

Another reason why we don't use linear crystal in any of our cable designs is that it's extremely brittle, and you can't wind it without damaging the crystals. This precludes its use in complex constructions without defeating its original design philosophy.

Let your ears be the judge.

In the final analysis it's not what we say that's important, but what you hear. We want to be on top of the latest developments and as you might imagine, we spend many late night hours listening to just about every kind of cable. Linear crystal might be a good marketing story but its not yet ready to claim state-of-the-art status. Listen for yourself and we think that you will agree.
THE FLAT RESPONSE VS. TAS—NO COMPARISON

Dear Mr. Archibald:

To my knowledge, Stereophile is the oldest “underground” audiophile magazine currently being published in the United States. I would have thought that such a venerable position could only have been obtained by scrupulously observing the highest possible journalistic standards, and that protection of your hard-earned reputation would demand very careful watch over innuendo and rumor-mongering. Statements published in your most recent issue, however, have disabused me of this trusting opinion.

In that issue, Alvin Gold referred to a publication, The Flat Response, in the following very denigrating tones: “a blatantly sycophantic organ designed to preach Linn and Naim.”

He makes it quite clear that this publication is nothing more than an attempt to influence public opinion in favor of Linn and Naim products in an apparently dishonest fashion, that is, by posing as an unbiased critical review. This sort of deceit is to be abhorred, and any phraseology which compares any other individual, manufacturer, or magazine with The Flat Response and which suggests similar motives had better be backed up with evidence. This sort of allegation is extremely serious and might even be viewed as slanderous by the accused parties. I refer specifically to your footnote (1): “On the other hand, U.S. manufacturers like SOTA don’t need a separate journal to promote their products. They have The Absolute Sound, whose reviews of SOTA products bear an astonishing resemblance to the same manufacturer’s promotional literature.” While I never thought to find myself defending The Absolute Sound, the notion that this neurotically independent magazine could be controlled by SOTA is laughable. (Frankly, I doubt that Robert Becker or Rodney Herman would wish to control Harry Pearson, even if they could.) As far as I know, the SOTA turntable is not even HP’s favorite, nor is one owned by every TAS writer. If TAS has quoted from SOTA literature, perhaps that is because SOTA’s literature is just a little more literate and intelligent than most manufacturers’ drivel or the pseudo-science written by most underground “journals.” In any event, I think it would be appropriate for you either to state your evidence for making the above allegations or to withdraw them and apologize for the unwarranted remarks. If, as it would appear, you are engaging in the latest episode of a long-term feud with TAS, then I hardly see how it is fair of you to involve SOTA in the dispute. Surely you can find something about TAS to criticize without making it up.

Kenneth A. Gould
Berkeley Hts, NJ

Criticism noted and, to some degree, accepted. For quite a long time I’ve been bothered by the degree to which Tom Miller’s review of the SOTA turntable paraphrased the SOTA literature. He did not, as you imply, quote the literature, which would have been straightforward. Instead, he rephrased, mildly, their ideas, presenting them as his own. I think if you reread that review, and carry out a little bit of textual analysis with a piece of SOTA’s early literature close at hand, you will realize the truth of this allegation. Subsequent very positive reviews of the SOTA in TAS, and concomitant attacks on Linn (who were most willing to respond in kind), did little to dispel the notion that TAS was strongly supporting SOTA. You are right, however, in stating that Harry Pearson prefers a different turntable, the Goldmund, and by a large measure.

This, then, is the background that led to my footnote. One of the dangerous temptations of journalism is the opportunity to be
ADD-ON ARMS FOR ARS

Editor:

In a recent letter to you, one of Stereophile's readers asks for advice concerning a better arm for an old AR turntable. Unless one wants to spend at least $200 for the arm itself, we agree with your opinion that one should not spend the extra money for a "better" arm when the new $125 Japanese-made AR arm is so good. (See Vol. 7, No. 1, p. 89).

We have recently successfully converted a 16-year old AR turntable using the fine new AR arm, and other parts made by AR for their new turntable. The cost of the parts, including the arm, new T-bar/bearing assembly, new top plate, etc., is approximately $200. This compares to the $450 price of the AR turntable.

We know of no turntable selling anywhere near the price which provides better sound than the converted turntable. The converted turntable's sound is indistinguishable from the new AR table.

We are thinking about offering a conversion kit using the new AR arm, or possibly the Linn LV-X arm for those who want later upgrade to a more expensive top-line Linn arm. We have not made the final decision whether we will market this kit. However, we are willing to sell to perhaps some half-a-dozen Stereophile readers, a set of parts needed for the conversion, and supply free prototype template and conversion instructions—if they in return would critique our instructions. We believe that very well-written instructions are the key to the success of a kit. And nothing is better than a real-life test of the instruction booklet.

Books Unlimited-Audio
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PLATTER MATS MATTER

Editor:

Like Sam Tellig (Volume 6, Number 6), I too have done extensive evaluation of turntable mats. I auditioned a felt mat, the Oracle Groove Isolator, and the Platter Matter on my VPI. a fine belt-driven turntable. In a state-of-the-art production studio I evaluated a stock Denon mat, the Music Mat, the Monster Cable Tripad and the NAD mat on a Denon DP-75 turntable and VPI base. Both setups used a Talisman B cartridge with the Princeton Design Group Active Cartridge Stabilizer as a step-up, and the Technics EPA-500 arm with "L" tube. Since the EPA-500 has a variable height adjustment, I was able to compensate for the differing mat thicknesses and thus maintain constant VTA for all the tests.

I auditioned many discs, including both audiophile and "commercial" pressings, vocals and instrumentals. On some cuts I had 15-ips studio submaster tapes for reference, and even though tape decks and dbx professional NR processors have their own sonic signatures, the tapes allowed invaluable comparisons with the discs.

Although I encountered Mr. Tellig's article after completing my tests, I arrived at the same general observation that he did: the harder mats seem to impart a more solid bass and a "harder" treble sound than the softer or more rubbery mats. I am well aware of the arguments against such a statement, but many hours of listening merely reinforced my conclusions about this.

On the VPI, the Platter Matter, a somewhat rubbery mat, seemed to add an upper-bass bloom (not "boom") at the ex-
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All CWD cabinets and accessories available in handsome Dark Oak (shown here) contemporary Natural Oak, and classic Natural American Walnut.
pense of the low bass. The highs were clean if somewhat recessed, and the imaging seemed two-dimensional when compared with the other mats, with instruments tending to blend together on complex material. The felt mat produced a more satisfying low bass, but the highs tended to "shatter." Oddly, the Oracle mat accentuated vocal sibilants, a characteristic which I had observed in a friend's system which includes, coincidentally, an Oracle mat. In short, I felt none of the mats to be entirely satisfactory on the VPI.

On the Denon DP-75 the stock mat was not awful, just inferior to the custom mats. The rubbery Music Mat was similar in sound to the Platter Matter. The Tripad elicited a wealth of detail but had a sonic hardness which soon offset the initial excitement in much the same way that familiarity eventually breeds contempt for many solid-state amplifiers. The sound was not unlike that when VTA is set higher than optimum, but changing the VTA did not ameliorate the problem.

Now for the surprise. On the Denon, the $20 NAD mat sounded best, striking a good compromise between correct tonal balance, naturalness, detail, "air," and image solidity. Having recently moved, I was unable to try the NAD mat on my VPI.

Just a note about the Talisman cartridge. Some audiophiles feel that it is bass-shy, but of many cartridges I have tested, it is the only one that measures ruler-flat through the bass region. All the others had a bass hump between 100 and 200 Hz, no matter what the manufacturer's response curve shows. If your speakers are flat and the VTA is correct, the Talisman will deliver exquisite sound. The Princeton Design Group's Active Cartridge Stabilizer brings out the best in the Talisman, providing a three-dimensionality that's breathtaking.

Ed Osborne
E. Brunswick, NJ

HALF VOLUME?

Editor:
I have been told that no speaker/amplifier combination should be played above half volume, due to distortion caused by clipping. Now I wonder what the practical definition of "half volume" is, when the recordings I make on my cassette deck play back at higher volume than the discs I record them from.

J. Gambardella
Long Beach, CA

Similarly, you should never go up more than half way, drive at more than half speed, wait more than half as long, or drink more than half as much Perrier water. These make no less sense than "half volume." There is no such beastie.

We suspect that what your misguided advisor had in mind was that an amplifier should not be operated at more than half its power-output rating, in order to avoid clipping (which can damage tweeters), but this doesn't make much sense either. Any amplifier can safely be operated up to its maximum power output without clipping, because clipping is defined as overload, and overload does not occur below maximum-output capability.

The practical problem is that, since an amp's clipping point is determined by its load as well as by its rated power, you cannot usually judge the safe maximum level by ear. Clipping at 10 kHz produces only distortion at 20 kHz and above, and you won't hear it. Your first clue will be when your tweeter dies.

Actually, you have little to worry about here. It takes truly prodigious, very audible amplifier overload to damage a modern speaker system—even a modestly rated one. Most amplifiers/speakers that a critical listener could live with will safely produce levels of up to around 95 dB in a modest-sized room, and that is usually enough noise for anyone but a heavy-metal nut, a drunk, or a pothead on cloud 17. Most recorded cases of speaker or amplifier damage have resulted from people listening at ridiculously high levels with amplifiers rated at around 35 watts per channel and less.

So, as usual, you cannot generalize here. The advice to listen at "half volume" is
Within this 7-inch, 9-pound cube is, quite possibly, the most powerful story in the history of high fidelity amplifier design.

The genius of a music loving physicist was turned loose and the result is an elegant technology that substantially reduces the massive bulk, weight, and cost of high power audio amplifiers. Conventional amplifier power supplies are very costly and inefficient because they produce a constant high voltage level at all times—irrespective of the demands of the ever-changing audio signal—even when there's no audio in the circuit at all!

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Once the crudeness of conventional power supplies was overcome, a wholly uncompromised signal path was designed: Fully complementary topology from input to output; the latest, fastest, highest current transistors; virtually pure class A biasing of the basic linear amplifier; direct coupling; linear metalized film capacitors; precision laser trimmed resistors; vapor-deposited 24 Karat gold connectors; and finally, an output inductor whose corner frequency is almost a quarter of a megahertz.

Audition the Carver M-400t and hear the difference: transparency, openness, detail. Without the clipping, distortion, and constraint of lesser amplifiers. With Carver the pure sound of music can be, very affordably, yours.
both meaningless and impractical. Let common sense prevail and you’ll have no trouble. Just bear in mind that up to a reasonable limit of loudness, you are more likely to damage tweeters with a low-powered amplifier than with a high-powered one. The latter will generally destroy woofers instead, and you usually get plenty of warning, through very loud clicks (as the cones “bottom out”), before a woofer sustains damage.

BORROWED GOODS

Editor:

Sometimes when an exotic component that you feel is of general interest cannot be borrowed from the manufacturer, you have borrowed a sample from a reader. Why not do this with the NAD 3020? I, and probably many other readers, would like to know your opinion of how this amplifier, which has received such high praise in other quarters, sounds with the various inexpensive speakers it might be used with, such as the Bill Reeds and Spectrums. The NAD appears to be the only candidate for a low-cost music lover’s system. What about it?

Chet Price
Davis, CA

Good point. We can actually borrow NAD products from a local dealer and it’s only our general slothfulness (and the deluge of products provided by manufacturers) that’s led us to ignore NAD. Who knows, our recent rise from the pits of the “underground” may persuade NAD that we’re a good bet to review their new line of products.

DAMPING THE RABCO

Editor:

I own a RABCO SL-8 straight-line-tracking arm which I have modified somewhat for decreased mass, and while the unit works well and has been well maintained, I feel it could benefit from some added damping. How would you suggest I go about doing this?

J. Boncer
Carlsbad, CA

There is no way we know of to add viscous damping to a straight-line arm in order to reduce the system’s LF resonance, but the metal arms used with the SL-8 benefit significantly from locally-applied (topical, as an M.D. would put it) damping to reduce mid- and upper-range resonances which normally develop in the arm itself.

The easiest way to do this is to cover the entire underside of the arm with any dense, pliable material that will adhere to it. Non-hardening modeling clay (Plasticene) is ideal, but since it is quite dense it should be applied in a very thin layer so as not to increase the arm’s mass any more than necessary. (¼2-inch thickness is usually enough.) Apply this also over the area where the cartridge will contact the arm, and tighten down the cartridge bolts enough to squeeze a fair amount of it out from under the edges. Leave a narrow (¼ inch) bare strip at the junction between the two sliding sections of the arm, to allow for tangency adjustments with different cartridges.

To check the efficacy of the treatment, mount identical cartridges (cheap ones will do) in a treated and an untreated arm, then try tapping the end of each with a straightened out paper clip (TT motor off, stylus resting in an inner groove, volume at normal listening setting). You will notice that the treated arm comes much closer to producing the desired inert “thud” when tapped. By comparison, the untreated one will ring audibly at several different mid- and upper-range frequencies.

DUST DEPOSIT

Editor:

Everyone tells me that record-cleaning brushes like the Decca and French Statibrush should do a good job of removing dust before I play a disc, but every time
The Model 17 Preamplifier epitomizes Amber's dedication to sophistication made simple... and incomparable sound made affordable. Passive RIAA equalization minimizes phase shift and improves detail. While direct-coupled circuitry heightens strong, clean bass response. Recreating live-sounding sound is critical. But so, too, is controlling it. The Model 17 features three recording loops, contoured tone controls, high output headphone jack and bass-boost... making it ideal for beginner and audiophile, alike. Visit your Amber dealer. Hear the difference between mere components and fine musical instruments.

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I have tried to use one it sweeps most of the surface clean but leaves a heavy line of dust across the surface at whatever point I lift it clear of the disc.

Am I doing something wrong, or aren't these brushes all that they are cracked up to be?

Jerome Mattsen
Toronto, Ont.

You're doing something wrong.

There are two tricks to using these brushes. First, they should always be held lightly, at a low angle to the disc surface so the bristles are directed against the direction of the groove travel. This tends to cause the dust particles to get wedged between the bristles. Second, the brush should be moved slowly towards the outer edge of the disc so that dust-laden bristles are off the edge of the disc before they spring back to their normal position and dump the dust they are holding.

Getting the knack takes a little practice but is worth the effort. Properly used, one of these brushes will remove every loose dust particle big enough to see as well as most that aren't.


Music recording microphones held in high esteem by perfectionists include the English-made Coles ribbon mikes, the Schoeps "Colette" series condensers, and the (also English) Calrec "Soundfield" condenser system.

SOFT HIGH END

Editor:

I would appreciate a clarification of terminology used in your magazine. The phrase "soft high end" turns up quite often. Does this mean that high frequency transients are blurred, that the highs have diminished dynamics, or that some other effect is present?

Scott K. Starry
Wilmington, DE

It simply means all high-frequency phenomena are diminished—transient sharpness, detail, and overtone content.

DIFFERENTIATION

Editor:

In reviewing a component, you describe how it sounds. Just how do you differentiate between it and the other components in the chain: stylus, cartridge, arm, turntable, preamp, amp and speakers?

Albert Sadler
San Diego, CA

With preamplifiers, tape recorders, and signal processors, we frequently rely on bypass testing that compares the sound of a direct-wired hookup with the sound when the device is inserted into the signal path.

This is obviously impossible with phono components, power amps, and loud-
As music lovers your excitement can be dimmed by the reality of high end audio equipment costs when it comes time to choose from the exciting array of equipment offered by audio manufacturers.

Like you, those of us at Sumo are in pursuit of ultimate music listening pleasure. Through years of hands on, ears open scientific engineering Sumo created that special quality of sound that transports the listener into the actual performance. As a result, Sumo products are consistently acclaimed by industry experts for their music accuracy.

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speakers, so here we must rely on comparisons with similar products. For example, a cartridge is considered to be accurate if it makes a representative sample of good discs sound like real-time copies of the original tapes used to make the records (or their CD equivalents). Also taken into account is the sound of other discs, whose "sound" is somewhat known based on the record manufacturer's usual disc-cutting procedures.

An amplifier is judged according to how it sounds with a given loudspeaker system, in comparison with most other power amplifiers. For instance, if most amps produce good low end with a particular set of speakers, then an amp that produces less bottom end is characterized as being bass-shy or lean. Similarly, speakers that sound bass-shy or lean when driven by amplifiers that produce good low end from most other speakers are characterized as being inherently lean.

Clearly this is a paradoxical situation, but outside of stating, simply, that this amp goes nicely with that speaker, it's the most we can do. It is at least a far more meaningful approach than merely reporting measurements, which do not even reflect the loudspeaker/amplifier interrelationship at all.

LASERDISC?

Editor:

As an audio and video enthusiast over the years, I have seen various products enter the market, do well for a time, and then die out. The most recent ones I can recall were the 8-track tape and RCA's CED videodisc. This has prompted me to wonder about the LaserVideo disc player I purchased just a couple of years ago.

I am wondering why more manufacturers haven't climbed onto the LV bandwagon. The only two makers of LV players are Pioneer and Sylvania, and they have continued to be the only ones for some years. What do you think is the future of LV, now that Beta Hi-Fi and VHS stereo are available on videocassettes?

James W. Broughton
Tempe, AZ

It is, of course, impossible to predict what will happen in a field that is changing as rapidly as video, but we do not believe any tape format will supplant the LaserVideo disc within the foreseeable future. Certainly, sound alone won't tip the balance in favor of tape. Few people bought LV players for their sound, even though it was for many years far better than that available on videocassette. LV purchasers were buying special-effects capability and better picture quality and, while cassette now offers many of the same special effects (still frame, slow motion), its picture is still vastly inferior to that of LV.

The high-definition 1100-line cassette will probably become the preferred medium for maximum picture quality within the next four years, but the disc will continue to be the only medium offering instant access to any program location, and the magnetic disc is not likely to provide anywhere near the storage capability of a laserdisc for many years to come.

As of now, with CED's demise, the laser variety has become the only disc game in town, and is rapidly becoming the preferred signal source for video perfectionists. Sony has announced the imminent release of a laservision player and, if they and Pioneer don't blow their opportunity, LV growth within the next few years could establish LV as a medium good for at least 10 years before it too, ultimately and inevitably, bites the dust. But no high-tech product can be expected to last much more than 10 years. The days when a recorded format would remain "standard" for 30 years are, we're afraid, long gone.
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'You sold your Quads!!!'

My son had just returned home from college.

I wondered myself whether I had done the right thing. Probably I'd done it as an audiophile version of the three-year itch more than anything else—always trying something new. (That's why I became a reviewer: to save myself from personal bankruptcy!)

Or did I have good reason to sell the Quads? I still don't know for certain, but my time without them has convinced me that, as superb as they are, the ESL-63s are still not perfect.

For instance, I always had trouble placing them in my listening room—center fill was never quite right. And I detected a certain fuzziness, a lack of definition in the treble region. This was something that went unexplained until I read Richard Heyser's review of the ESL-63s in the June Audio. (Heyser found that early reflections within the speaker assembly were interfering with the direct sound at certain frequencies.)

Then there were the Quad mods. While I concede that certain mods are beneficial, I hate the idea of mods in general. When I find a mod that works I get mad at the manufacturer for not having thought of it first—optional metal armboards for the AR 'table (available from Audio Advisor in Grand Rapids, MI), for instance. Also, the problem with mods is that once you start you can't stop.

On the Quads I was more than willing to go along with updated protection boards, which after all was an update rather than a mod—and made them more practical, to boot (that's not the case with all mods). Ditto for the Mod Squad capacitor bypass. But there was so much more: spike the stands; remove the grillecloths, they veil the sound (which indeed they do, but they also prevent the speakers from looking like industrial monstrosities); replace the chintzy spring-clip cable connectors with five-way binding post, either heavy-duty or standard; and a complete rebuild of the speaker's structure (some people insist that is the only way to the ultimate Quad sound!) Oh yes, one more thing: you need a subwoofer—except that there aren't any that work. Catch 22.

Moreover, the ESL-63s are very fussy about amp and, to a lesser extent, preamp. The best sound I got from the Quads came out of the little Quicksilver mono amps I wrote up in the last issue. Also good were the NYAL Moscode 600 (though the 150 should do just as well), the B&K ST-140, and the Hitachi HMA-8500. In other words, Quads like tubes best, and MOSFETS nearly as much.

Quads can be a pain in the keester (thank you, Ronald Reagan) to own. They can be difficult to position, each speaker has to be plugged into an AC outlet (unsightly cords on the floor, not to mention the speaker cables), they're easy to tip over—particularly if you have small kids—and they protect themselves by shorting out your amplifier! That is, until the resistors which absorb the current from your amp until it shuts down...
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U.S.A.
New Hampshire, Portsmouth, Sound Smith, Scott Smith - Owner.
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Vermont, Rutland, Sound Directions, Mike Ahearn - Owner, Jay Hess - Mgr. "The ENERGY 22 outperforms speakers costing 3 to 4 times their price with depth of field and a sound stage that is unsurpassed."
New York City, Long Island, Freeport, Performance Audio, Harold Minto - Owner. "To say that the ENERGY 22 is the finest speaker in the world is very difficult, but the more I listen, the more I realize it is."
New York City, Patchogue, Square Deal Radio & TV, Ed Brody - Owner. "A combination of construction quality, simplicity, and unique driver design results in a stunningly realistic performance."
New York City, Manhattan, Fresh Meadows, Sound Stage Audio and Video, Dan Monti, Roland Halim - Mgrs. "The very essence of music is brought into our sound room accurately in total width, depth and height. A phenomenal value!!"
New York City, Manhattan, Aurico Sound, Paul Lubetsky - Owner. "It takes something truly extraordinary to impress New York music lovers, the toughest listeners to please in the world. Our clients have been absolutely stunned by the outstanding performance of the Energy 22 loudspeaker. From the first moment I heard them I knew I had to own them, the bass, and the cymbals were unbelievable, a few days later I took them home."
New York, Syracuse, Gordon Electronics, Gary Gordon-Owner. "Pro 22 has brought new energy to my entire sales force."
New York, Buffalo, Purchase Radio, Dan Abelson - V.P. "The ENERGY 22 is the most dramatic and spectacular development in speaker technology in the last 10 years. Awesome three-dimensional capabilities that our customers can easily perceive."
D.C., Virginia, Washington, Audio Associates, Mike Zanin - Owner. "The ENERGY 22 is a very musical speaker at a very inexpensive price that easily could cost a lot more money."
Ohio, Warren, Electronic Ltd., Peter Finta - Mgr. "The ENERGY 22 has by far the best definition and imaging of any speaker I have ever listened to. You hear things on records you never knew were there."
Florida, Miami, Audio By Caruso, Don Caruso - Owner. "The REFERENCE CONNOISSEURS are among the most neutral, uncored speakers we have found!!! They provide very relaxing listening."
Minnesota, St. Cloud, Exclusive Sound, Wayne Bakken - Owner. "The ENERGY 22 is by far the most stunning speaker that we have ever demonstrated. We have had a greater reaction over the ENERGY 22 than any other loudspeaker we have ever carried."
Texas, El Paso, Sound Room, Mark Pearson - Owner. "The most three dimensional speaker ever made under $3,000 / $5,000. Imaging for only $4,000."
Arizona, Mesa, Phoenix, Hi Fi Sales, Dave Ross - G. Mgr. "ENERGY 22. One of the most accurate, best imaging speakers we have ever heard."
California, San Diego, Stereo Sound Co., Bob Kolley - Owner. "Over the years I have he so many promises of new breakthroughs in speakers with disappointing results. The ENERGY 22 is one of the only products which performed beyond those promises. A job well done!"

CANADA
Atlantic, Canada, Wacky Wheatley's T.V. & Stereo, Mike Wheatley - Co-Owner. "To deliver perfection the 22 is a thrill, a home entertainment phenomenon. To listen in the dark creates a video picture that we would never have believed was available from a standard mall. To buy a record now is a totally rare adventure."

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Quebec, Montreal, Stereo Folie, Nai and Angelo Astuto — Owners: “For ten years our philosophy has been, our customers must get the best product available for the money they spend. In speakers, ENERGY 22 is that product, fantastic value for fabulous sound.”

Quebec, Electrostatic, Louis, Michel Noél — Owner: The Canadian-built ENERGY 22 sets a new standard for us that makes the rest of the world’s speakers stand aside, both for quality of sound and price. On another point, because ENERGY 22 was chosen by a major Radio Television network as its monitors, we have placed the ENERGY 22s with our own city’s #1 FM station. CNEF-FM 93 at the monitors for their new studio.”

Quebec, Repentigny, Terrebonne, Audio Express, Richard Belisle — Owner, “My customers have absolutely flipped over the ENERGY 22. The stereo sound field brings life to their stereo TVs.”

Ontario, Toronto, Bay Bloor Radio, Sol Mandelstern — President. “For 30 years I have always judged speakers by five things — accuracy, ability to handle transients, ability to handle power, musicality and value. These five important areas the ENERGY 22 is a total winner for the music lover. It’s got everything going for it. I recommend it highly.”

Ontario, Richmond Hill, Markham, Linear Sound, Jim Richards — Owner, “The ENERGY 22 is an unbelievable engineering achievement, that offers my customers a startling quality versus price ratio.”

Ontario, Ottawa, The Audio Shop, Jean-Pierre Patry — Owner, “No other product has ever created such a commotion in our store in such a short time. The Audio Shop for the last 15 years is proud to have selected and offered only high value products. The ENERGY 22 represents extremely high value.”

Manitoba, Winnipeg, Regina, Advance Radio & T.V. Ltd., Bob Spichuk — G. Mac, “Fantastic speaker, it totally stands by itself in our store. We love selling them and most importantly our customers love owning them.”

Saskatchewan, Saskatoon, Custom Stereo, Gary Taylor — Owner, North Battleford, Bob McBride — Owner, Prince Albert, Randy Martin — Owner. “We found with the ENERGY 22 the more we listened the more we loved them. It’s sound stage and depth of field makes it the most exciting speaker in the industry.”

B.C., Vancouver, Sound Room, Pat Tang — Owner. “A truly stunning achievement in speaker design. Our staff loves them. The musical information from the speaker is the very best available in the market today. We’re proud that it’s Canadian.”

Magazine, Sound Canada Test Report, “The ENERGY model 22 may very well be the best bookshelf (price) speaker we have ever heard at any price. It deserves the highest praise.”

FOR THE ULTIMATE EXPERIENCE, SPECIALY SELECTED ENERGY 22 COMPUTER MATCHED OWNERS AVAILABLE IN THE ENERGY 22 REFERENCE CONNOISSEUR MODEL PICTURED BELOW, CUSTOM MATCHED HAND LAID HARDWOOD VENEERS AVAILABLE IN: BLACK (WALNUT FINISH), OAK, WALNUT, OR BLACK PEBBLE.
sizzle a little.

But ... the Quads do have tonal neutrality, exceptional spaciousness, and astonishing transient response. These are qualities that make it difficult to find speakers you can be satisfied with after living with Quads for any period of time.

THE JSE INFINITE SLOPE MODEL 1s.

First came the JSE Model 1s, highly touted by certain folks I know in suburban Buffalo. To some extent I can share their enthusiasm. Aesthetically, for instance. The Model 1s sure look nice. They stand just under three feet high, on casters. The cabinet is wedge-shaped, directing the drivers away from the floor and up towards the listener. Cabinet finish is only fair, though at least the veneer is wood, not vinyl.

At first I was quite taken by the JSEs. Lateral imaging is superb—one seamless horizontal soundstage (better than Quads in this respect). Depth is very good for a conventional box speaker. Imaging, too, is quite good. As for frequency response, the JSEs are very satisfying from the midrange on up. Highs are particularly sweet and easy on the ears. Not bad speakers by any means.

There's just one problem: too much mid and upper bass, too little low bass. The speakers are heavy-sounding—male voices in particular take on a slight chestiness or boominess. In other words, the bass is fat rather than lean. "Plummy" is the word sometimes used by British reviewers.

I thought speaker stands might help tidy up the bass, but because of the speakers' unusual shape ordinary stands won't do. I phoned JSE and they promised to send a pair of stands, but they never arrived.

At $900 the JSEs represent a good value for the money, but I'll have to stop short of a recommendation—particularly in light of the Spendor SP1s reviewed below. Raising the JSEs off the floor and putting spikes under the stands might alleviate, if not cure, the bass coloration problem. It would also eliminate the casters, of which I'm very suspicious. They muddy up the sound because they don't hold the speakers rock-steady. In fact, I tested this by removing the casters and putting the Model 1s up on TipShoes (you see how devoted I am to these speakers—I never do stuff like this). The bass did tighten up a bit, but there was still too much warmth. The speakers were still too close to the floor.

Your listening room and personal taste will play an important role, but I strongly recommend an audition in your own home before purchase.

THE GENESIS 44s

I got interested in the Genesis 44s when I read some good reports on them in the mainstream press. Also, I have had favorable experience with other Genesis speakers—a pair of Genesis 6s in my office for the past eight years.

So I got my ears on a pair ... But I was rather disappointed.

First, the looks turn me off. A wooden base tilts each cabinet back so it looks like it's about to tip over. This strange posture only makes the clunky-looking cabinets look worse. And a cheap vinyl veneer doesn't help much.

Sonically, the Genesis 44s do some things right. Few other $700-a-pair speakers have bass as good as do these—it goes deep and sounds tight. (Now if only the JSEs had this bass!) Imaging is good, and you get a convincing sense of depth. Moreover, the speakers can play very loud—I gave up long before the speakers did.

So what's wrong? The midrange and the highs. Not that there's a coloration—these speakers are remarkably uncolored. Problem is, the sound is lacking in sweetness and delicacy. The sound was particularly unpleasant with CDs.

I notice that the tweeter takes over at 1.1 kHz, which is one of the lowest crossover points I have seen. Perhaps Genesis should rethink this design; maybe the tweeter is being asked to do too much.

THE SPENDOR SP-1s

I won't beat around the bush. I love these $850/pair speakers; I ran out and bought
two pairs! I can just imagine hordes of Quad owners following my example. But don’t; if you’re happy with your ESL-63s, keep them. For one thing, the Quads may sound better in your room than in mine—which is far from ideal (low ceiling, for one thing).

On the other hand, if you were thinking about buying Quads, I recommend two things. Read the Quad review in Audio, the most thorough one anywhere (though not the only one to express doubts). And give the Spendors a listen.

Without a doubt, the Spendor SP-Is are the finest under-$1000 speakers I have ever heard—but please note that I haven’t heard everything. (You might want to compare the Spendors to such speakers as the Spectrum Aurora 3As or the Vandersteen 1Bs or 2Cs.) The Spendor SP-Is list for $850 in standard teak or walnut. Add $75 for spiked stands—which are recommended, as with any speakers.

A salesman friend of mine heard my Spendors and loved them, but said they would be hard to sell (he works in a mid-fi store). After all, the SP-Is don’t do much to call attention to themselves. (The fact that this is the whole point of a loudspeaker never occurs to most people.)

The Spendors don’t play particularly loud—rock fans can go elsewhere. They lack thunderous bass, so Telarc freaks can do the same. Moreover, Spendor doesn’t advertise, so customers don’t arrive at the store pre-sold. (“Yeah, show me a pair of Cerwin-Vegas, man. I want a pair of digital-ready speakers.”) A good percentage of Spendor sales are to recording studios and broadcast organizations, so you and I are not even necessary to their success!

My salesman friend may be right. It takes an astute listener to appreciate what makes the Spendors special: they do everything right . . . or to put it another way, they don’t do anything wrong!

Their sound is as free from coloration as from any box speakers I have heard—very close to the Quads in tonal neutrality. Imaging is excellent; so is depth presentation. Bass, while not particularly extended, is tight and convincing (with a good amplifier). There’s none of that fat, boomy bass you get in so many American speakers. This is the leaner, cleaner, British sound and it’s what I prefer.

The midrange is sweet and liquid, and the highs have a crispness that eludes most speakers—including the Quads. The highs are superbly defined and yet the speakers don’t sound overly bright. The Spendors are “analytic” and yet easy to listen to! (To be fair, the Quads have quicker transient response but that’s the only area, in my opinion, in which they clearly surpass the SPLs.)

If you were contemplating Quads, consider this: With Spendors, you don’t have to worry so much about speaker placement; you don’t have to plug the speakers into an electric outlet; you can drive the speakers with something as modest as a 40 watts/channel Creek CAS 40+0—although they’ll sound even better with higher-quality, more powerful separates, particularly at the low end; and, not to be forgotten in this column, the Spendors will cost you about one-third the price of a pair of Quads.

You could put the other two-thirds in your pocket, or you could spend part of it on that better amplifier. An Eagle 2 ($895), my reference amp of the month, would be an excellent choice. Or the British Fidelity Synthesis integrated amp—70 watts/channel for $495 from RCS International (the same people who import the Spendors)—would be a good choice. That price is little more than what it sells for in the U.K., where it is widely regarded as a steal.

A less expensive SP-2 model ($598/pair) will be available by the time you read this, and I should soon have a pair to audition. If you’re not a big spender (groan!), you might look into these.

THE MORDAUNT-SHORT MS20s.

Now, a suggestion for those on a more modest budget.

The Spendor importer (whose phone number is 202-342-0400) also brings in Mordaunt-Short, another British speaker line with an excellent reputation. I got a
$199 pair of M-S MS20s, but in a way, I wish I hadn't. I didn't need a new pair of speakers for my office.

I just can't pass up a good bargain, and the MS20s are remarkable speakers for the money. The high end is exceptionally sweet, thanks to the Audax tweeter (the same inexpensive but remarkable French tweeter used in the Boston Acoustics A40). There's a good sense of depth from the MS20s, and the speakers go reasonably low and will play loud.

I found them an interesting alternative to the Spectrum 108As (see Vol. 7, No. 8). I find the Spectrums a little more neutral; on the M-Ss, the midrange seems a little forward (which doesn't surprise me based on what I've heard before from the Audax tweeter). But the MS20s have a smoothness and delicacy that's astonishing in $200-a-pair speakers—they're better in that respect than the Spectrums.

The speakers can be placed on a shelf against a wall, but sound best on stands, several feet away from the wall and well away from room corners. This last point is particularly important—stay away from the Mordaunt-Shorts if you have to put your speakers in a corner.

An excellent pair of stands for the MS20s is imported by Acoustic Research from England: the SP-1s at $50/pair. They're wrought iron, 21½" high, and made in a tripod arrangement with a sturdy platform and adjustable spiked feet. I'd recommend them for a lot of small speakers.

THE ACOUSTIC RESEARCH (AR) CONNOISSEUR SERIES MODEL 20.

I wish I could like the new AR Connoisseur Series 20 speakers as much as I like the aforementioned stands—or their even nicer (beautiful, in fact) $100/pair stands sold for use with the 20s. The stands are spiked, and you have the option of sand-filling the center support for added stability.

Frankly, I am surprised that AR would make their foray into the high end (different dealers, limited distribution) with speakers as mediocre as these. Small speakers should at least offer good definition and imaging; the AR 20s offer neither.

Others apparently agree with me (the 20s have not been wildly received in the UK, where they were introduced), and AR is changing over to a revised design featuring polypropylene drivers. I heard these at CES and they sound a lot better than the original 20s. The problem here is that there are a lot of good, small speakers selling for under $500. Without having really auditioned these new polypropylene speakers, my first choice in the price range would be the Spendor LS 3/5As, which now cost only $398 in this country. They have a clear, crystalline, and delicate musical quality that, to my ears, is unsurpassed at the price.²

THE SPECTRUM 208As

My experience with this company's 108As led me to request a pair of their 208As. At $295/pair they cost just $100 more than the 108As; I can't think of $100 better spent.

The first thing I noticed about the 208As is that they have more deep bass than the 108As—as they should with a larger cabinet. The second thing I noticed is that the 208s play super, super loud. So I immediately took them into my new video room and turned on MTV in stereo. Instant ecstacy for my two teenagers! And I've become addicted to MTV! (I regard MTV in a positive light: I think it's raising the artistic consciousness of the nation's young—including my own.)

Being great for MTV means they must be pretty awful for other types of music, right? Wrong! The Spectrum 208As sound good with any type of music, including classical.

The highs, for instance, are very smooth

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¹ Or at least augmenting the line with a more expensive, polypropylene version using real wood veneer rather than vinyl. The paper-cone, vinyl-cabinet speaker is scheduled to continue in a revised version.

² For a more robust sound, perhaps with less delicacy, readers are referred to the many speakers covered in our Vol. 7, No. 4, which came up with some interesting alternatives to the LS 3/5As.
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and unfatiguing. The tonal balance of the 208As is very pleasing—even a little warm in the lower midrange, perhaps. But there isn’t any boominess in the midbass.

I could live with a pair of these speakers if all I could afford was $295. As you might expect, the 208As lack the depth, delicacy, and definition of the Spendor SP1s, but they sell for a little more than one-third the price—and consequently only one-ninth the price of Quads! They’re also better than the Spendors if you listen to rock a lot.

Of course, you don’t get everything for two hundred and ninety five bucks, but it’s astonishing what you can have. And the Spectrums are very efficient. Connect these to a high current +5 watts/channel Harman/Kardon receiver, for instance, and your ears will give up on SPLs long before the speakers do. This is one of the very best buys on the market.

MORE TO COME

This by no means exhausts The Audio Cheapskate’s speaker survey. The new DCM “Time Frame” transmission line speakers at $499/pair are on their way even as I complete this column. If you have a dealer nearby, you might give them an audition (I am expecting great things from these speakers). I also plan to audition the little Diesis speakers from Britain, a pair of low-priced Empires (nee Fourier), the revised AR20s, and the Spendor SP2s. Mucho trabajo para mi!

ST
PURE GOLD

Alvin Gold

NAILS IN THE COFFIN DEPARTMENT—Part II

Following my report on The Flat Response in the last issue, I’ve learned that the distribution deal with Audiophile Systems has now lapsed. I’ve also confirmed my suspicion that there is no official distribution through newsagents in the UK or, if there is, it’s being kept very quiet. Finally, the only writer in that organ with any claim to talent, the author of the satirical “The Curse of the Claw” column, has now decided to hang up his word processor through pressure of work—and so has the talentless Derek Wittington, one of the last of the dealers still contributing. The author referred to, by the way, was one Doug “Captain of the Titanic” Hewett who in years gone by has been associated with various ill-fated attempts to manufacture turntables, none of special merit.

Enough of this. The real reason for mentioning Doug Hewett is a new manufacturing venture he’s launched which rejoices under the name Maticore. For one, the company has strictly controlled ambitions and is being run, as far as I can tell, in a much more realistic and professional manner than with his previous ventures.

The product is the Mantra and you’ll probably yawn when you discover that it’s yet another belt-drive deck with a three-point floating suspension. Pitched costwise into the lucrative no man’s land between the Rega and the Linn, the Mantra has a very tightly defined role in life. It is, in fact, the archetypal poor man’s esoterica, and despite the disparity in prices its real targets are to be found in the ranks of the Regas and ARs of this world.

Not that these celebrated companies will have many sleepless nights on the Mantra’s account! Production quantities are in the tens, rather than the hundreds or thousands, each month. Expect to see the Mantra crawl into the U.S. later this year in very limited quantities indeed—initially through Ears Nova in New York (owner Joshua Cohn), but in the longer term through a full-fledged distributor, possibly the one handling Spendor (RCS Audio International). The price should be around $300 in mahogany and walnut, with a small premium for black.

It will be worth seeking out. Designed very much with the hierarchical school of system construction in mind, the Mantra is built for systems of medium capability, and is neither intended nor promoted as a surrogate for a high class deck in a top rank system. The design is essentially conventional, with a real wood veneer on its strongly made plinth, a glass platter, manual speed change, and so on. Even the power-plant is familiar—the Impex (nee Philips) synchronous jobbie that has become something of an industry standard. Where the Mantra parts company with the crowd is that it eschews any idea of being universal. It comes with any arm you like, as long as it’s a Linn L1-V. X or L2-V. X Plus.

The Mantra is also uncommonly well
made. The number of parts used has been kept to an absolute minimum, but they’re of very high quality and the deck, though un-prepossessing in appearance is exceptionally well screwed together. Immaculate cabinetwork courtesy of Castle Acoustics (as in Castle loudspeakers) is exceptional at the price. I am a little doubtful about the way the platter is mated to the subplatter, using a spacing ring around the bearing shaft and three raised screw heads as a platform, but these things must be judged on results rather than looks. They are, at least, very high quality screws . . . .

The results are very impressive indeed. It’s no Linn, Oracle, or whatever, but it sits a good deal more convincingly on the next rung down the ladder than the majority of similarly priced decks. Low-frequency control and definition are excellent, as are musical dynamics and that sense of ease and progressiveness in music-making only found with thoroughbred designs. Mechanical aspects are good, too, and the Mantra is well insulated from the invidious effects of feedback and speed instability. It is a surprisingly polished and complete turntable—and in its simple way it looks good, too. If the company proves to have staying power, which is yet to be demonstrated conclusively, the Mantra will be a winner. Its essential simplicity and integrity count in its favor. So too does its performance.

A Good British Speaker Mystery

And so we move, via this short but clumsy link, to two loudspeakers you can expect to be seeing and hearing quite a lot of in the months and years ahead. Both should be on sale by the time you read this, and will cost about the same in the U.S. as in the UK.

Let’s keep the two manufacturers anonymous for now. Loudspeaker A is moderately inexpensive in the UK. It costs about $140 pounds, which translates via a $1.20 exchange rate to “certainly less than $300” in the words of the manufacturer. Such are the costs of shipping air around the globe. The pure Scottish Highland air in this case is sealed in on all sides by an unusually heavy cabinet and is compressed and rarefacted by two drivers, a Kef B200 and a Tonagen 1” dome tweeter. The crossover point is at 3 kHz and the enclosure is of standard bookshelf proportions, and about 18” high. Now this makes an interesting design study even on paper for those who know their drive units. I’ve not got the figures to hand, but I do know that the Kef B200 is an excellent bextrene-coned bass unit. It is not, however, a midrange unit, nor was it ever intended to be. It’s cone is simply too heavy even for the substantial magnet used on this design and the first breakup modes appear, if memory serves, well under 1 kHz. The Tonagen tweeter on the other hand is a highly competent Japanese tweeter. It is not an exceptional performer, but it has few real nasties and it is cheap.

What this all adds up to is difficult to pin down in a few words. The treble is predictably sweet and clean—though not, for example, in the class of the Wharfedale 506 with its superb metal dome tweeter. At the other end of the pass band, the combination of a well proportioned solid box and a good, well proven bass unit invests the speaker with a deep, powerful bass that almost screams the words “control” and “tunefulness” with every note it sings.

The upper midband, though, causes difficulties. Indeed, when I first heard this speaker I found it impossibly congested and “tight,” but the sound loosened up dramatically within the first 20 minutes and has stayed that way even from cold on subsequent occasions. Beware single speaker dens where these speakers are pulled in from a cold anteroom!

Note that the congestion hasn’t been cured; it’s merely been ameliorated to a degree. The overall effect is of a loudspeaker that sounds far larger (in the right sense) than it has a right to, and with authority to match. It’s a potent performer, but not an unblemished one, and it can sound raw and lacking in detail at times.

Model B is the brainchild of a long established and respected loudspeaker manufacturer. Their designs have traditionally erred
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to the right of Atilla the Hun in their conservatism, most of their products having a distinct house sound that generally serves to either endear or alienate. Right now, though, everything is on the change. They have their old range, updated and extended as necessary. They have a cheapie* designed to compete with the enormously successful but flawed Wharfedale Diamond. It has been getting good notices but it sounds disgusting. Only my opinion of course—but I'm right. And they have this speaker I've labelled as Model B, which is unique.

The best antecedent for the B is to be found in the old AR18 idea of a crossoverless bass unit, which the B has as well. But the parallel mustn't be pushed too far. The AR had a soft, lossy, and fairly heavy diaphragm that suffered relatively benign resonances within its passband. The B has a small, stiff, and low mass cone which goes much higher up the frequency band, making this the closest (boxed) approach yet to the ideal of a single drive-unit loudspeaker. There is a tweeter, one of those nasty 20-mm Audax units, but it operates only above 6 kHz and reproduces only a very limited amount of musical information, so it isn't really given a chance to misbehave. The enclosure itself is extremely well made and quite small in size—not much larger than an LS3/5a for example. Stands—vaguely Linn Sara-ish in concept but lighter and unfortunately rather flimsier—are available at extra cost (sorry, I don't have a dollar price for the speakers or stands).

The speaker is described by the manufacturer as having pseudo-active drive, for reasons that should be obvious. Incidentally, it's quite different from the so-called active system adopted by many U.S. manufacturers which leaves a crossover in series with each driver, which inevitably reduces diaphragm damping and control. The B has another important property too, though the manufacturer makes no reference to it in his propaganda. It's unusually directional through the midband, a prerequisite according to AR (see Pure Gold, Vol. 7, No. 8) for good imaging.

Again, you could predict something of the sound of this speaker from the design alone, but not everything. On the negative side, speaker B is a little ragged and occasionally phasey. Not a lot, mind. On the positive side it's nothing less than a pint sized ball of fire. Short of Maggies, I cannot think of a loudspeaker that extracts as much coherent musical information off record, disc, or tape. It is amazingly detailed with a tactile, touchable quality all its own. Most of all it is alive; alive in a way that leaves most other comparably priced speakers sounding reticent and smeared.

Ripping Off the Wraps Dept.

Loudspeaker A is the Linn Index, the first "inexpensive" design from that company, and a product clearly destined to sell in enormous quantities. Hopefully for the right reasons, but just possibly for the wrong ones. Loudspeaker B is the Mordaunt-Short MS100, which in its own quiet way deserves to become a classic, but whose significance will probably end up forgotten in the glare of publicity for more glamorous transducers from the better known names.

AG

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1 It's the MS10.
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- 0.25 mV output

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SAM AT THE SHOW

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You can do CES on the cheap. Start with a SuperSaver fare, booked on United. As you know, for a while it looked like Sam might be stranded. United was, however, keeping some semblance of service from LaGuardia to O’Hare, so I made it.

In fact, I almost got a free round trip ticket to California—United had overbooked my flight and was looking for volunteers to get bumped, in exchange for a free round trip to any United destination in the continental U.S. Naturally, the Audio Cheapskate was first in line to volunteer, but—they didn’t need my seat.

Having missed out on the freebie I resolved to save money in Chicago. On taxis, for instance. One of the baggage handlers at O’Hare assured me I did not want to take the subway into town—slow, dirty, hot. None of which turned out to be true. Compared to the New York City subways, the CTA is a joy. Ninety cents from O’Hare to within a block from my hotel. Okay, I did have to schlepp my bags—but I saved $24.10 each way. That’s $48.20 total, which I blew on CDs at the show.

Also, Chicagoans are nicer people than New Yorkers. For one thing, they’re not animals—no graffiti on the subway. And a man on the subway saw me studying the CTA map looking for my hotel and asked if I needed help, which it turned out I did. The sales people at Rose Records (in Chicago) don’t snarl at you the way the sales help in Tower Records (in New York) often do. Kroch and Brentano’s bookstore on Wabash is an absolute joy—a genuine full-service bookstore with knowledgeable sales help. I was looking for some Russian language texts (I’ve been studying Russian for over a year). I found a delightful book, A Dictionary of Russian Obscenities, and a bilingual text of dirty Russian fairy tales. The sales clerk greeted me in Russian and then asked (in English), “What would your mother say about these books?”

LA managed to find hotel rooms for the staff, although he’s a bit of a Cheapskate himself—we were packed three to a room! What can I tell you? The revered BS (who penned the main CES report) gets up at five in the morning, snores at 48 decibels, and can sleep through virtually anything.

All right, you wanted a report on the show. A hotdog and a Coke cost five bucks at the McCormick Center (where primarily the large, mid-fi companies display)! Needless to say, the Audio Cheapskate postponed lunch until he could get to a Burger King. Teamster goon squads roamed the Americana Congress hotel (where the high end manufacturers were exhibiting), looking for any exhibitor who dared to lift a hammer, even if it was his own. Want us to put up that cardboard poster? That will take three men half an hour.

The juiciest gossip of the show had to do with a rumored tiff between Ivor Tiefenbrun, of Linn Products, and Julian Vereker, of Naim. Julian has played second fiddle in the British hi-fi “hierarchy” for years—first fiddle, of course, being Ivor with his Linn Sondek. Now, Ivor has come out with his own preamp and power amp. So much for “Linn-Naim systems,” and the “gentleman’s agreement” between Ivor and Julian. Ivor
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used to take the ends of the chain and JV the middle; now it’s Linn-Linn-Linn. After all, with CD players (like the Meridian MCD and the Sony CDP-102) starting to sound good, there may not be such a big market for high-ticket turntables, arms, and cartridges in the future. (Linn not only has electronics, but is rumored to also be working on a cassette deck.)

There's more. Julian apparently dared to suggest that there might be some loss of information on analog recordings when going from the master tape to the final disc—including Ivor's own ALOI recordings. If Julian really wants to get even with Ivor he'll embrace the CD. Maybe that's why Quad has so championed CD! Incidentally, Quad is widely rumored to be working on their own CD player, derived from a Philips machine.

Yes, CD was very much in evidence at the show. Over at the “Zoo” (McCormick Center), a star of the show was the $300 Technics portable CD player, to be available this fall (in time for Christmas). I ordered one on the spot. At the posh Raphael hotel on the other side of town, Meridian was showing their new MCD Professional ($1400), although many of you will be unable to get it since the entire production run has been bought up—and only one run is scheduled (though a well-known NYC dealer was negotiating for a second production run just for his store!). The MCD Pro is a souped-up version of their regular MCD, using the same Philips 101 chassis.

Meridian also has a CD mat (!) for those who have been placing a second disc on top of the disc being played. I tried the mat briefly with the Meridian MCD Professional, and I regret to inform you that it works. (Beware of using the Meridian mat with some players; it won't work with all players and you may get a jammed drawer.)

Another thing that works, in spite of LA's skepticism, is Monster Cable's new CD connector cable. (And you thought CD was going to be simple?)

Sony, of course, has their cost-effective CDP-102, which you can mail order for $308 from Stereo Corporation of America, in Brooklyn, NY. Marantz has a nifty-looking player using the latest Philips technology: the CD 64, which you can find discounted for well below $300. Another good buy is the Magnavox FD1040, the machine on which Mission has based their 7000R. I am told you can find the FD1040 discounted to under $200, although I haven't seen it priced that low. I've heard the machine, though, and I think it sounds better than the Mission at a cost of less than one third the actual selling price.

"Cartridges are no longer a growth area." This is the word from a major cartridge manufacturer who requested anonymity. Another cartridge manufacturer confided that business was bad and getting worse; he was clearly a very worried man.

Still, analog is far from dead. There were quite a few turntables at the show. AR has a new basic 'table (the EB-101) imported from Britain for $399, with arm. The AR table introduced two years ago has been replaced by a new Connoisseur Series ES-1 'table in gorgeous rosewood veneer ($625 with new AR arm; $500 armless—and $150 less for each in cherry). There's also the expensive model, which is provocatively fitted with a sapphire bearing, has a more sophisticated suspension than the other models, and whose physical dimensions measure out within a millimeter or so of the SOTA Sapphire. Coincidence? It costs $850 in hand-rubbed black lacquer or $700 in cherry.

For British 'table buffs, there's the $395 Dunlop Systemdek with Linn LVX arm (glass platter with spring suspension), and the $395 Revolver, also with LVX arm (glass platter, solid plinth, very impressive bearing design). I have been promised a sample of both, along with a $295 Ariston (including arm) for later this year.

Biggest turntable news of all may be a new belt-drive model from Dual, the model 5000, which will be available for $300 this fall. It features a three-point spring suspension, real wood veneer base, and a tonearm that looks like it should sell solo for more
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than the price of the whole works. This may be the table to wait for. You can see why Ivor appears anxious to diversify. It's like R.J. Reynolds gobbling up Nabisco Brands—if we can't sell you Salems maybe we can sell you Shredded Wheat.

But the star of the show (for me) may turn out to be the British Fidelity (Musical Fidelity in Britain) A-1 integrated amp. Handsome cosmetics. Excellent sound. Moving coil section, 20 watts/channel pure class A. And the price? Not $1000. Not $500. Would you believe two hundred ninety-five dollars? I tried the amp at the show with a pair of Spendor SP-1s and a pair of Spendor LS3/5s, and was bowled over by the superb sound. This may be The Cheapskate Product of the Year. Designer Tony Michaelson has promised to fly one over for the Cheapskate as soon as production gears up. Stay tuned.

Another star (and a Cheapskate natural) is New York Audio Labs' IT phono-stage-only MOSCODE IT preamp for $169. Plug it into a $159 AR remote control and you have a knockout preamp for a little over three hundred bucks! The Cheapskate is planning a whole column devoted to the NYAL Moscode line for later in the year. (For now, I can tell you that the Moscode 600 power amp is fabulous at $1595.)

I am now probably known among manufacturers as The Audio Schnorrer. But let me assure those manufacturers that I fully intend to write about all the assorted cables, cartridges, chazerai, etc. I bought back from the show. Already I've found that the Audio Technica AT140ML is a particularly stunning moving magnet for around $150 retail—one of the very best cartridges I have ever heard. And I'm getting excellent results with Vampire Wire cable (more cables on the way).

2 Step right up to the counter, folks, for your British Fidelity A-1 ... If Sam were to retire from selling snake oil and contribute all his talents to the hi-fi industry, the industry might really take off.

1 A

3 Cheapskate.

4 Junk.
Best sound of the show: Sunday afternoon at 3:00, three blocks up from the Americana Congress, the Chicago Symphony (live) in an all-Bach program.

Worst sound of the show: Anglo-American Audio’s demonstration of the John Bowers Active One, which is probably a good speaker done in by a bum presentation.

Best evening of the show: dinner with Stan Klyne, whose $2850 SK-5 preamp is the Cheapskate’s reference. I learned about the movie Buckaroo Bonzai and Stan’s Jan learned where to purchase an official Woody Woodpecker T-shirt (Stanley Desantis, Inc., 213-487-7807).

More gossip: Which two British hi-fi journalists were flown to Chicago at what U.S. high-end manufacturer’s expense? (I won’t tell but you may be able to guess.)

My conclusion: in spite of three to a room and BS’s nocturnal habits, I’ll never in the future miss a CES!
If one phrase could sum up the 1985 SCES, it would have to be “nothing really innovative.” The trade publications whined that there weren’t any new products to attract the buying public’s attention. The Consumer Electronics Design & Engineering Exhibition, which hands out awards for “innovative” products, had fewer items on display and a thinner program book than usual. Desperate for anything new, they even included a murinomorphic dust cover for computer mice!

This temporary stasis is hardly surprising. Judged simply as hardware, consumer electronics is a remarkably mature technology. There’s hardly anything you can’t do cheaply and with high precision, as witness $200 CD players and VCRs, as well as $800 computers that outperform $800,000 mainframes of 10 years past.

The difficulty, as I see it, is in figuring out what to do with all this technology. However gadget-happy the American public is, the only products it has fervently embraced have been the VCR and the CD player. Despite the high unit sales, the home computer has been a dud, with most being sold either to gadget freaks or to those of us with specific needs. It is the failure to find any practical, mass-market functionality for the personal computer that accounts for its present sales slump. And when a $2500 robot with three 8088 microprocessors and half a megabyte of memory is limited pretty much to bringing a can of beer from the kitchen while not bumping into the walls, it will be a long time before the “U” in “R.U.R.” stands for “universal” rather than “unneeded.”

High end audio is also, in its own strange way, mature. We’ve finally reached that dreaded conclusion which (let’s be honest) was implicit in our manic pursuit of perfection: everything in the signal chain (including even the color of speaker wires) affects the final sound, and almost always for the worse. Improved sound is now the result of purer or more nearly ideal (and therefore more expensive) materials. The pursuit of perfection has become the pursuit of Purity. (Anybody wanna bet that within the year someone will manufacture vacuum tubes with OFC electrodes and pins?)

The only clear trend in audio (high end or otherwise) is the move toward full-system remote control, as exemplified by offerings from ReVox and Kyocera. We’re not talking Fisher rack unit, we’re talking upper middle-brow and lower high end. It’s ridiculous that we can send men to the moon, but still have to arise from a comfortable seat to select sources or adjust volume.
This lack of convenience is due not so much to cost as it is to the desire to keep all that is unnecessary (even MOSFET voltage dividers) out of the signal path. This remote-control trend will stop somewhere short of the Krells and ARCs of the industry. (The image of William Zane Johnson punching buttons on an infra-red transmitter to control the SP10-II preamp falls in the same category as the sound of one hand clapping.)

**CHICAGO**

Taking advantage of my geographical location, I listened quite a bit to radio station WFMT on a Sony WMF-10. WFMT is noted for excellent sound, and the open, unretained quality is apparent, even on a personal portable.

I spent some time at Rose Records ("the world's largest record store") buying CDs at "$3 off the already low, low Rose price." Got the Soldi *Ring*, and it is magnificent—thrilling, frightening, spellbinding. "Rhinegold" is over 27 years old, and the sound is still far superior to that from other CDs. Anybody wanna buy my analog *Ring*?

**I BWOKE IT, I BWOKE IT Department, part 3**

Fans of this department will be disappointed to learn that I didn't rip the knobs off any prototype equipment, as I had at the past two shows. The non-working model of Finial Technologies laser LP player (q.v.) was a great target, but it was shielded by heavy Plexiglas and I neglected to bring a heavy instrument. Maybe next year I can tear into the real thing.

**YOU WILL BEHAVE Department**

Karl Alberty, a German movie producer, is the designer of yet another omnidirectional speaker, called the Total Dimension Spherical Sound Register. It's claimed to be "a new concept in stereo reproduction and sound emission." It isn't, of course. What is new is Herr Alberty's solution to the problem of how to protect a wad of drivers spread over 5 surfaces.

A grille is used, but it's a wire basket that fits over the top and sides! One cannot help but feel the poor speaker is being punished for some unknown crime ("The Speaker in the Iron Mask"). This is particularly unjust, since anything the speaker may be doing wrong is not its fault, but Herr Alberty's.

**FOR THE LAST 20 YEARS WE'VE BEEN SAYING THAT STUDIO MONITORS AREN'T AS ACCURATE AS HOME SPEAKERS, BUT NO, YOU WOULDN'T LISTEN Department**

Raymond Cooke, head of KEF, narrated this embarrassing tale. Some years back, EMI borrowed several KEF systems for a public demonstration of SQ recordings. One of the disks was Pink Floyd's "Dark Side of the Moon." Never having heard it on anything other than studio monitors, the EMI people were not aware of the coarse language that good home speakers so effortlessly revealed. When the four-letter words made their appearance, several members of the audience got up and left, much to the executives' embarrassment.

**SO THAT'S WHAT WE ARE Department**

Chris Greenleaf is a writer for *Stereo Review* whose work also appears in trade publications. He has good insight, and ears that are about as critical as those of most underground reviewers. His comment to me was that we were really the audio "undergrowth," full of stinging nettles that prick the complacency of conservative reviewers. Thanks, Chris, that's part of our job.

**WOULD YOU BELIEVE . . . SNAKE VINEGAR? Department**

Athena Audio makes two "black boxes," called PolyPhasors, which are supposed to
correct certain not-very-clearly-stated problems (principally phasing errors) in audio systems. One unit is for line-level use, the other goes between amp and speakers. The latter, which is housed in a handsome wood cabinet and described as a "3-dimensional matrix," was demonstrated. With the speakers and amp used, the Poly-Phasor produced a more recessed midrange and more forward upper midrange along with an apparent loss of dynamic impact.

Athena does not claim that any and all amp/speaker combinations will show an improvement. But what we heard (especially considering the claim for enhanced dynamics, and the fact that the unit only contains a coiled length of wire) was not very convincing. At 500 mazzolians (!), we recommend very careful auditioning and a 30-day return privilege. Caveat auditor!!

THE ACOUSTIC RESEARCH MGC-1 ("MAGIC") SPEAKER

AR's design is not magic, but rather the application of design principles which have been known for over 20 years and are now being applied for the first time to an integrated speaker system. Since most listeners refuse to correct bad room acoustics (usually, excessive liveness), AR has designed a system which does it for them.

By the adroit selection and placement of drivers, and the use of acoustic foam, the MGC-1 radiation pattern is limited to about ±30° both vertically and horizontally. This greatly reduces room interaction, but produces a sound which may not be "open" enough for the those accustomed to broader-dispersion designs. AR's solution is to add delay.

There are two smaller speaker systems, using the same mid- and high-frequency drivers as the main system, installed on the outer sides of the cabinet. These are baffled so that little of their output reaches the listener directly, and angled so that what does reach him is a wall reflection at 54°. The main drivers are positioned so that their sound arrives at 26°. These angles were found to produce minimum interaural cross-correlation, which is needed for the greatest appreciation of ambiance. (For a further discussion of this point, see my review of the Metronome II in Vol. 7, No. 4.)

1 Having gone to Shows for six or seven years, I knew better than to take this new product from Athena as a joke, but it certainly strains credibility to pay $500 for a wooden box containing two sets of 5-way connectors and as much fancy speaker cable as they could cram in. "Aha," I said, "the proverbial crooked wire with no gain" we've been hearing about all these years." Obviously this product could not pass Peter Moncrieff's (or anyone else's) straight-wire bypass test. Or, if it could pass the test (of audibility), why spend the 500 bucks?

AHC was not amused (or if amused, not convinced) by my fun-poking, at least partially because of his wondrous experiences in the land of cables. I think the engineering source of the Athena product, Bruce Brisson (whose M.I.T. cables did impressively in AHC's cable survey), may have had something to do with it. I agree: it never hurts to have an open mind, especially if you're a reviewer and don't have to pay for the sample.
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The delay produced by wall reflections is no different than that from a broad-dispersion speaker; it still muddies and colors the sound. So AR adds extra delay, via an external processor (which also has two amps to drive the delay speakers). With the total delay set to about 20 ms, the delayed sound moves out of the so-called "fusion" region, and instead there is an "unmasking" of the ambiance in the recording (the Madsen effect).

As demonstrated, the effect ranges from the spectacular to the subtle, generally in proportion to the character of the recording. Orchestral recordings tend to show great enhancement, whereas chamber music is less affected, which is as it should be. Although the controls are designed so that the unit may be set up once and then forgotten, without producing unnatural effects on most material, they have sufficient range to permit the listener to optimize the ambiance effect for each recording.

Those who own ambience systems will no doubt react with a yawn; there's nothing new about the AR system, except its integration into a package. And that's the problem. At $3600 the pair, you're paying for the delay/amp, extra speakers, and large cabinet which houses them; the sound is good, but hardly in the class of other $2000+ systems. You can purchase a complete delay system for less than $1000, and it will work with any other components you own. Furthermore, its speakers may be placed where ambience extraction is maximized—to the sides, facing up or away from the listener.

AR would no doubt respond that simply adding delay to your present system will not solve problems with room interaction, and that most listeners refuse to cover the walls with Fibreglas or Sonex. True: in that sense, the MGC-1 is a legitimate advance. But it goes against the most basic principle of component hi-fi: one can mix and match, swap and upgrade, as one sees fit. If you sell the MGC-1, the ambience system goes with it, and you face the same old problem of room interaction with your new speaker.

Why didn't AR keep the MGC-1 directional, and sell the delay system as an optional add-on (which, of course, could be used with other speakers)? The chief designer, Ken Kantor, explained that this point was heavily debated within AR, but it was ultimately decided to produce an "integrated" product. Perhaps AR wanted to distance itself from other ambience/delay products which are still on the market (Audio/Pulse, Koss).

In the early '70s, AR showed a prototype 16-channel ambience system which could simulate the sound of specific concert halls. Let's hope that the MGC-1 is the first step towards another such product, rather than an end in itself.

**THE (SHOTGUN?) MARRIAGE OF AUDIO AND VIDEO**

The so-called "marriage" of audio and video has produced what may be a bastard child: digital sound recording on 8mm video tape. Sony and Pioneer are the prime forces behind 8mm, and they intend to supply machines which can record two hours of video, or twelve hours of audio! This is how it works.

Most video recorders use two heads, 180 degrees apart, on opposite sides of a drum spinning at 1800 rpm. As the tape passes the drum, the heads lay down slanted tracks, one after the other. Each track carries one field (262.5 lines), half of one of the 30 frames transmitted each second.

The 8mm format uses the first 5/6 of each track for the video signal, with the remaining 1/6 carrying digital audio. Since the recorder already contains the needed digital processing circuitry, why not have an alternate audio-only mode which takes advantage of the full track length? No sooner said than done.

In this mode, six audio segments are laid down, with each one corresponding to a different program. That is, on the first pass, segment 1 of each track is recorded, segment 2 on the second, and so on. This supplies a total of 12 hours' recording from a two-hour tape. (If a two-speed 8mm machine is ever produced, this time will double, to 24 hours!) The user may select among the tracks while the tape is playing. Pioneer made good use of this feature in...
Our Tonearm 1 was rated 1-A by IAR and highly praised by TAS and Stereophile. Now Tonearm 2 combines the proven linear air bearing with a new kind of decoupled counterweight, a tapered arm tube with integral head shell, a simple means for vertical and levelling adjustments, a VTA/SRA control that retains perfect tracking tangency, and a counterweight that slides vertically for dynamic balance. Arm tubes with mounted cartridges and matching counterweight assemblies are interchangeable, maintaining all pre-set adjustments. The cuing rise is adjustable and the action gentle and ergonomically responsive. The cost is $850 including a quiet pump and the sound is glorious. Write for free literature or send $5 for the 50-page owner’s manual and treatise on tonearm performance.
their demo by using six distinctly different styles of music.

Great idea, no? Well... The format chosen is 8-bit linear, with companion. 8 bits have a S/N ratio of barely -49 dB, a far cry from the 96 dB of 16-bit systems. Some unspecified noise reduction system is used to raise this spec to an acceptable level. Its performance has to be nothing short of incredible since it must simultaneously reduce the residual noise to inaudibility, without "pumping," while at the same time hiding the audible modulation noise inherent in an 8-bit digital system. The demo sounded okay, but that was with music of limited dynamic range. 16-bit digital has enough problems (real or imagined) as it is: why does a less-than-mature technology (digital audio) have to suffer from a pointless cheapening right at the start? Wouldn't six hours of 16-bit digital be enough?

In commenting on the extended play time available from half-speed recording, the Pioneer rep commented that there where a lot of people whose entire record collection would fit on two tapes! This brought peals of laughter from the audience, since this amounts to all of about 60 recordings. Heck, I've seen audiophiles with even smaller collections.

TWO "INTEGRATED" SPEAKER SYSTEMS: THE BOWERS ACTIVE ONE & THE NYAL HAiku

Two of the most interesting products in Chicago were integrated speaker system from B&W and New York Audio Laboratories (NYAL). Although the technologies couldn't be more different (one is a multi-way dynamic with transistor amps, the other a full-range ESL with tubes), they nonetheless have much in common.

Even for their intended markets, both are expensive products ($3000 for the One, $16,000 for the Haiku). Both are "music lover," not "audiophile" speakers. (This is especially true of the Haiku, which cannot play at roof-raising levels.) And both would have to be considered rather poor values, unless one intends to keep them for a decade or so. Which is, of course, exactly the kind of buyer they are aimed at.

The Active One was demonstrated with a digital tape containing both narration and musical selections, both of which were disastrous. The narration (more accurately, promotional hype) was in dead earnest, and was all the worse for it, coming across as a Monty Python lampoon of high end audio. LA could hardly control himself, and I had trouble suppressing my laughter; unfortunately, we were both near the man operating the recorder. But what's unfortunate about it? You better believe that BS and I were not the only journalists who reacted unfavorably to the Active One demo. This group of reprobates includes not only the entire staff of Stereophile, who were unanimous in decrying the sound of this demo, but includes as well some of the most respected and mainstream ears in audio journalism—who were witnessed strolling casually away from the demo with no further comment (except to yours truly and not for publication). B&W, above all, need to know when their products make a negative impression, particularly if they're attempting to set up a two-tier selective distribution network based on a speaker which, to judge from this demo, is inferior to their standard line. LA

The Bowers Active One

The musical selections, whether classical or pop, had that totally unnatural, slick (ripe, juicy liquid, overly reverberant) sound that is for many listeners (and far too many recording engineers) the ideal "live" sound. So it's difficult to make valid judgment of the Active One's character. However, it is possible to say that the One is extremely clean and open-sounding, and can play at high levels in large rooms with no sense of strain or compression.

The NYAL Haiku system (so-called because digital circuits monitor the music and

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2 What's unfortunate about it? You better believe that BS and I were not the only journalists who reacted unfavorably to the Active One demo. This group of reprobates includes not only the entire staff of Stereophile, who were unanimous in decriing the sound of this demo, but includes as well some of the most respected and mainstream ears in audio journalism—who were witnessed strolling casually away from the demo with no further comment (except to yours truly and not for publication). B&W, above all, need to know when their products make a negative impression, particularly if they're attempting to set up a two-tier selective distribution network based on a speaker which, to judge from this demo, is inferior to their standard line. LA
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shut off the amp every 17 bars) was infinitely more successful. It consists of a pair of speakers (either the Dragonfly, at $4000-$6000, or the Lotus, at $9000-$12,000) and a pair of NYAL OTL amplifiers, at $3600 to $12,000. The speakers use Stax electrostatic elements (the Lotus with twice as many as the Dragonfly) and a special transformer has been designed for the best match with the amplifier. On display were a pair of Dragonflys and an OTL-1, which had been modified for triode operation. (Oldtimers will remember the triode/pentode controversy of the '50s. Ever heard a Dyna Stereo 70 rewired for triode output? Lovely.)

The sound? A wonderful combination of seemingly disparate elements. A strong sense of "presence" was combined with a very delicate handling of transients, yet the speaker did not sound wimpy. There was an authoritative air, yet the system did not seem to be imposing its own character on the sound.

The overall sound of the Haiku system is immediately rewarding; there is no need to mentally shift gears when one starts listening. In short, some of the finest sound reproduction I’ve yet heard. Although some more fine tuning is to be done before release later this year, I have no hesitation in proclaiming the Haiku system an instant classic.

NON-PARALLEL CONSTRUCTION Department

In the first issue of Quad magazine, Neville Marriner is quoted as saying: "I have no doubt the compact disc will be the main playing medium for home consumption in the developed countries—simply because they are so much easier to handle, and you get a wonderful sound without any scratches or surface noise."

I know, Neville, I know. I once tried to grab Albania, and it let out with such a squeal! Scratched me, too.

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ACOUSTIC RESEARCH has expanded their product line with the Connoisseur Series which consists of the model 19 and 20 speakers, and a subwoofer that can be used separately or in conjunction with the 19s and 20s. As with Allison (q.v.), AR has finally produced a system that is not politely bland. At $300 for a pair of 19s, plus $500 for the woofer, you have a system that is probably a pretty good value.

JGH and I also heard the model 9 LSI. We both found it to have a strangely constricted or "closed-in" midrange. There didn't seem to be anything in the recordings played, the associated equipment, or the room acoustics that would explain this.

The turntable line has been expanded (no sense in not capitalizing on the reputation of a classic product!) with the Sapphire Legend, incorporating a jewelled thrust bearing. $475 for cherry, $625 for rosewood (gorgeous!).

When you say ADC, the last thing that comes to mind these days is pickups. Besides a CD player and a turntable or two, ADC has an incredible array of equalizers, with such features as dynamic range expansion, preset EQ for particular types of music, and the ability to set and recall four different curves for different program sources. One is right for you!

AKG has entered the $1000 pickup sweepstakes with the P100. It's one of those rare birds, a non-MC, with a stylus that is only factory-replaceable. You can choose your tip from "multi-faceted Analog 6" or van den Hul. It comes with a five-year warranty, the first I've seen for a pickup. The P100 is recommended for the "truly articulate" listener. What does the ability to express oneself have to do with choosing a cartridge?

ALLISON ACOUSTICS' product line has undergone a pruning at the bottom end, with the budget 100-series being phased out and the more expensive systems undergoing further refinement, principally in the area of improved crossovers.

The newest models are designated "CD," which stands either for "convex dome" or guess-what, depending on how you want to market them. The CD8, though not the most expensive model, is the most refined. They have finally gotten rid of the "Boston Blahs." This speaker is lively and open, with a good sense of presence and realism. Worth auditioning.

APHEX SYSTEMS, best known for the "aural exciter" and other signal processors, has introduced the AVM-8000, an advanced SQ and Dolby cinema decoder. (It's amazing; every time a sophisticated SQ decoder is taken off the market, another one appears to take its place. The late Ben Bauer must have some profound spiritual influence on this world.) The 8000 has such features as eight-position decoding for SQ recordings, a separate subwoofer output, and full remote control. The designer says the 8000 is as clean and transparent as Aphex can make it. I'm scheduled to receive one for review in a few weeks.

AUDIONICS has two new modestly priced movie-sound surround decoders. The more expensive one, at $250, includes the delay and Dolby B noise reduction needed to earn the "Dolby Surround" designation, but Charles Wood (company president) says the lower-priced, less sophisticated unit is cleaner sounding.

BARCUS-BERRY, best known for their musical instrument transducers and a weird glass-plate tweeter of a few years back, have
introduced the BBE 2002, a “differential load reactance compensator.” Despite the name, it sits ahead of the power amp, and is some kind of dynamic processor intended to improve clarity and impact. (Yes, we’re getting one.) The designer also told us of an upcoming product that will link the power amp and speaker in a phase-locked loop (his totally incorrect terminology; not mine) in order to correct amp/speaker interface problems. We’ll probably get that one, too.

BOZAK is trying a comeback with a new line of speakers incorporating proven elements of Bozak technology (such as metal cones) with new materials and processes. Their first offering is a pair of mini-speakers and mating subwoofer. Bozak wants us to review these; are our readers interested?

Bob CARVER demonstrated something interesting: high-fidelity stereo AM. With a Motorola modulator, he broadcast CDs to a new receiver incorporating the circuitry. A flip of a switch allowed one to compare. There was surprisingly little difference: a bit of hardness, brightness, and some noise added, but otherwise very close to the source. The design appears to have been inspired by the very poor FM reception in downtown Portland.

CERWIN VEGA! (the punctuation is part of the name) announced home Sensurround. Oy vey. It was pretty impressive, although Gordon and I thought we heard a woofer bottom out at one point. Chacun a son gout.

CLASSICAL DESIGN & ENGINEERING makes a variety of systems, from mini-monitors to huge floor models, with some truly exquisite cabinetry. Gordon thought it was Art Deco, but it’s actually closer to Art Nouveau. The sound was every bit as elegant and clean as the furniture.

DAYTON WRIGHT introduced the XAM-4, a floor-standing monitor speaker. It’s spec’d at 20-20k ±3 dB, but the room curve shows flat response to below 20 Hz. Having owned a pair of Mike’s gas-filled wonders, I can vouch that it’s likely you will get such response in your listening room.

DBX has a CD player with a difference: theirs incorporates a compressor (for background music or car tapes), an expander (Digital Audio Impact Recovery, or DAIR, for those compressed Philips CDs), and the ambience circuit from the Soundfield Imaging speaker’s control box.

They also showed the Model 10 Soundfield Imaging speaker. More colored than the One, it also sounded less bland. And it doesn’t seem to produce as good off-axis imaging as the One. In any case, the ‘84 show report (Vol. 7, No. 6) discusses my mixed feelings about these products.

DCM’s newest product is a tall, thin speaker aimed at the video market, called the Time Frame. It supposedly loads the woofer with a folded transmission line. The $500/pair asking price is remarkably low for a transmission line system.

DISCWSHER has a handsome, compact CD cleaner. Although the fiber pad rotates, Discwasher claims that it actually cleans in the proper radial fashion. The photos (which appear to have been made by allowing tinted cleaning solution to dry on the disk) seem to confirm this. Discwasher also claims that the supplied cleaning fluid (unlike that from some competitors) will not dissolve either the label or the varnish on the front of the CD.

DYNVECTOR has no new pickups, but Dr. Tominari has designed a number of interesting signal processors. First is the PE-1, a phono cartridge interface that works with either MCs or MFs. Apparently it applies a dead short across the pickup, and then amplifies the resulting current. This should work well with MCs, but most MFs have a sufficiently high (and variable) impedance that the current may not be linear with frequency. It should be interesting to compare this with the PRD interface (q.v.).

The second processor is the PS-1, which is intended to correct for nonlinear group
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delay at low frequencies. KEF has demonstrated that group delay can cause severe audible aberrations. Trouble is, how can one set of corrections (there are no adjustments on the unit) be satisfactory for a wide range of systems?

Last, but not least, is Quadro, a delay system. Its claim to novelty is the way in which the delay varies with frequency, with more delay at lower frequencies. (This sort of makes sense, since concert halls have a longer decay time in the bass region.) The Quadro produced a very impressive sense of depth and spaciousness, especially from some discs that were pretty awful in stereo.

**EMPIRE SCIENTIFIC** has become the distributor for Fourier speakers, called the FFT Series in their Empire reincarnation. Actually, it would be more accurate to describe Fourier as the OEM supplier of Empire speakers. Anyway, you get the idea—and they are the same speakers reviewed favorably in this magazine. In addition to the two MCs we mentioned last year, Empire has revived selected models in the 2000 and 4000 range.

The **ENIGMA** subwoofer is a dipole design using four 12-inch woofers and an electronic processor. (They refuse to call it an equalizer, but it's that, a crossover, and more.) Without an amp, the system costs $2300; with a Hafler DH-220, it's $2900. The Enigma is shipped directly from the factory, and there's a 10-day return privilege; Enigma pays return freight. I might add that their literature is well written and makes a clear, carefully reasoned case for the design of the system.

The demonstration was marred by some pretty dismal-sounding speakers used for the main system, and I rather suspect that the room Enigma was given could not support the low bass the system can no doubt produce. Still, the bass end was notably tight and transparent. DO is supposed to receive one for review. With the ten-day return privilege, and a WATS hotline, you can't very well go wrong.

The Enigma appears to have a design oversight, but one that can be readily corrected. The subwoofer is supposed to sit at least 30" from the wall behind it. To this end, a certain amount of group delay is included in the controller to allow the Enigma to sit in front of the main speakers. But in fact, one is obliged to move the Enigma 28" closer to the listening position than the main speakers, or they won't be in time alignment.

So what's the problem? Well, unless your main speakers are widely separated, or incredibly directional, some of their sound will be blocked or diffracted by the Enigma woofer. This can only degrade imaging and add coloration. And if your main system is electrostatic, the panels may already be sitting well into the room, making a further invasion of 28" intolerable. Enigma ought to add a group delay bypass switch so that the woofer may sit in the same plane as the main system.

The marriage of audio and video has caused a resurgence of interest in self-powered (active) loudspeakers. Unfortunately, such designs force the user to run at least two extra power cords, an inconvenience. **FIRST LAW** corporation has introduced active loudspeakers which solve this problem. The output of your power amp is rectified and used to charge a NiCad battery pack, which in turn powers the speaker. No more power cord! Clever, n'est-ce pas?

The most fascinating nonproducing product was **FINIAL TECHNOLOGIES'** nonworking model of their laser player for LPS. They claim it will be available in about a year. They're trying to get as much input from as many experts outside their company as possible, so they get it right the first
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time and don't have to go back for modifications. I wish them luck, but if you're planning on a new table, arm, or cartridge, go ahead and buy it/them. Projected price is "expensive, but affordable," which I would place in the $1500 to $2000 range.

KIMBER KABLE has a new speaker cable using Teflon-composite insulation. Pure Teflon melts at such a high temperature that any attempt to coat plain copper wire causes severe oxidation damage. If the wire is first silver plated, the high temperature causes any moisture or impurities in the flux to boil and damage the plating, opening holes where further damage can occur. This new insulation material is claimed to offer most of the advantages of Teflon, yet may be applied at much lower temperatures.

GOLD RIBBON CONCEPTS makes a planar magnetic driver that is covered with a thin layer of gold. This is not merely decorative; pure gold is soft, and thus supplies a useful amount of surface damping. It also blocks oxidation of the conductor underneath. The drivers are available separately and in a number of systems, including wall-mount satellites and floor systems with woofers. Their top model uses 24 six-inch Dynaudio woofers per side, in a tall line array. This isn't a "poor man's IRS;" it costs twice as much at $66,000.

HITACHI demonstrated their LC-OFC audio cables using mediocre components, possibly to show that differences would be audible even in modest systems. Unfortunately, the only apparent difference was that the Hitachi cables were brighter sounding. If there were more subtle improvements, they were masked by the quality of the equipment used.

The JSE Infinite Slope speakers (which I had not previously heard) struck me as being unusually clean and life-like. The cleanness may be due to a lack of IM products since the drivers are cut off abruptly well before they reach the limit of their useful response. Unfortunately, the literature does not explain how the tremendous amounts of phase distortion introduced are corrected. (They can be corrected; the brochure just doesn't explain how JSE does it.)

KINERGETICS introduced a FM tuner and CD player, both with the anti-hysteresis circuitry they developed. In preparing their tuner design, Kinergetics poked around FM stations to get samples of the caps and wires used in broadcast equipment in order to approximate what kinds of hysteresis distortion would result. As in their other products, Kinergetics incorporates the hysteresis-producing parts in their tuner. A ten-position switch allows the listener to select among a variety of these products (which are of course utilized in a subtractive mode—to compensate for the hysteresis produced in the FM broadcast), until he finds the combination producing the best sound for his favorite station. And it works! Switching in the processor produced a noticeable improvement in depth and naturalness from a local classical broadcast.
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The CD player appears to be the first using audio electronics designed and manufactured in America—the transport is from Philips. Kinergetics found that most of the vibration which degraded transport performance came from the power supply, so they used a separate supply. Kinergetics’ tape head hysteresis processing circuit is even included, for use with CDs derived from analog masters!

MARTIN-LOGAN has introduced a simpler version of their curved electrostatic system—the CLS—but without the dynamic woofer. The driver sits in an oak frame, without grille cloth, and is quite attractive. So is the sound.

MAGNAT has an unusual system called the Mag­nosphere Delta, which uses two unusual metal dome drivers. The metal is a nickel/aluminum/copper alloy that is rigid enough to hold its shape, yet soft enough to have good internal damping. It was found that titanium alloys showed severe resonances above the audible range, while the new alloy was much better damped. These measurable differences were reflected in superior sound.

JGH didn’t care much for the Magnat speakers, panning them on the basis of a really nasty-sounding CD of Beethoven’s Third Piano Concerto. I rather liked them on other discs, especially vocals. They are just a touch tizzy on the top end, but have excellent focus and detail. Their cosmetics would be a real turn-on and, at $1000 per, are probably worth auditioning.

The MERLIN loudspeaker is from the designer of the Raven systems, upon which I favorably commented last year. They appear to be the first American speakers with built-in spikes, and look like a good bet for audition.

I thought I had a really rough question for MONSTER CABLE. “What about Linear Crystal wire?” In response, I was handed a sheet. Monster Cable’s view is that, once you’ve got 99.99% pure OFC, any further improvement in cable sound comes from changes in cable construction, not in wire material. The characteristic “sounds” of various cables are electromagnetic in nature, and Monster Cable understands the principles involved sufficiently well to make a superior product. Furthermore, the crystals in LC wire are so large that they break when the cable is flexed, defeating the whole point of LC wire. All this according to Monster Cable.

Monster has expanded into the acoustical treatment field. They make a variety of sound absorbing panels, including floor- and wall-mount versions, all very handsome, all very expensive. (You can make them yourself at far lower cost if you have the patience to track down Owens-Corning Fiberglas panels, which are becoming increasingly hard to find.) There is a special-purpose version of these panels, called the Acoustic Optimizer, which sits between your speakers in order to reduce inter-aural
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crosstalk. It almost certainly has other benefits, such as damping room resonances and reducing inter-speaker reflection and diffraction, but the literature does not mention them.

This ain’t audio, but it is high fidelity. At last year’s show I felt the prototype 20” NAD color monitor had the best picture I’d ever seen. The production version confirms this. Everybody who saw it agreed—if you don’t need a bigger picture, this is the color TV to own;1 It makes everything else look sick. Take a look and see if you don’t agree.

After an ill-fated entry into the amp/preamp/tuner market in the late ‘70s, NAKAMICHI has returned with an amp designed by Threshold and a tuner designed by Larry Schotz. The latter is for me the most interesting of the three. It has an “intelligent” high-blend circuit, where the amount of blend varies with the noise-masking effect of the program material. With lots of high frequency energy to hide the noise there is little or no blend, and vice versa. The principle is exactly the same as that in the Burwen Dynamic Noise Filter.

Nakamichi’s new version of the TD-1200 car cassette deck incorporates the auto-azimuth correction that the original was supposed to have; you no longer have that little remote control to fiddle with. Nakamichi is also distributing cassette copies of recordings from Artist, Delos, GRP, Sheffield and Telarc. If this were a holding action against the “digital onslaught,” it would make sense. But Nakamichi sells a digital processor and makes two CD players—and half of these cassette recordings are derived from digital masters! I do not understand why anyone would pay $18 for a cassette tape of the latter when the CD sells for up to $5 less.4

NEW YORK AUDIO LABS is determined that every audiophile in the U.S. should own a vacuum tube preamp, and at a price that will make it a credit card impulse purchase. To that end, they have introduced IT,2 a phono front end that plugs into the auxiliary input on your cheap Japanese receiver. There is also the SUPERIT, with better-grade components at critical points. The price? $169 plain, $269 super.

At the other end of NYAL’s price spectrum is the 10,000 watt/channel Black Hole Moscode amplifier, so called because you disappear into—yea, become one with—the music. Projected price is $267,000, though an increase to $273,150 may be forthcoming. The goal is to reproduce The Voice of God.6 Direct connection to the power lines is required. The brochure explaining all this is both deadly serious and utterly hilarious, and may become one of the classics of audiophile literature. But the Black Hole Amplifier is for real. With a bit of luck, we may be the first mag to review it.

NOBIS (as in dona nobis pacem) is a new line of speakers. The sound was exceptionally good, especially at high levels, where the tweeter refused to break up, distort, or get fuzzy-sounding. (I wonder how soon we’ll see a line of speakers named “Personae”.)

PIONEER showed a movie of their new car CD player (I still think it’s a dumb idea) being bounced around on some really rough roads and thereby proving its immunity to all but the worst jolts. The thing that makes it unique, though, is the way it keeps track of the CD’s time code. If a jolt makes

3 IT as in “this is IT!,” not IT as in Ivor Tiefenbrun.
4 This is obviously the amplifier of choice for use with the “See (hear) God” loudspeaker that Jim Thiel was asked by one of his dealers to design a few years ago. We were glad to hear at the Show that Jim is at last embarking on this project.

5 LA
6 LA

4 So they could play it in their TD-1200 automobile tape deck, dummy! LA
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it skip, it stops momentarily, then picks up exactly where it left off. Why don't home
CD players do that?
By the way, although Pioneer claims they are committed to quality, their first video
recorder is VHS despite the fact that Beta has always had a far superior picture (even
before SuperBeta), and despite the fact that Pioneer indicated long ago that they would
enter the Beta camp. So much for quality
commitment.

**POLK AUDIO**'s newest product is the SDA
Signature Reference System. This is a line-
source version of the Stereo Dimensional
Array design, and runs $2600 the pair. I sup-
pose I should leave others to review it since
I have a certain prejudice against the kind of
signal manipulation this speaker introduces.
(It is, I feel, better left to an external
processor.)

**PRINCETON DESIGN GROUP** makes the
Active Cartridge Stabilizer that we have yet
to report on. (AE has one designed for MF
pickups, while I have been promised one
for my MC.) This year they showed a power
amp. It uses a new technology which they
claim linearizes the normally exponential
transfer function of bipolar transistors
without the use of feedback, either local or
global. If this is true, it's a genuine break-
through. The sound, through DQ-10s, was
unusually clean and transparent, the best
I've ever heard from Dahlquists. Other
listeners had a similar reaction.

The amp is a mono design, and a pair
runs around $3000. The name—"Power
Twin"—needs to be changed. It suggests
either one half of a super-hero team ("The
Power Twins fight corruption, evil, and
galactic naughtiness throughout the entire
universe—and beyond!") or a candy bar
("The giant Power Twin candy bar undocks
into two energy modules—one for now;
one for later—or both for now, if you're a
pig!"). But a rose by any other name ... This amp looks like a contender in the Solid
State Sweepstakes.

**REVOX** had a new tuner-preamp that may
be used with powered speakers or separate
amps, as part of a comprehensive remote
control system that allows multi-room
operation.

**SAWAFUJI** again showed their systems with
"flat-wave" drivers called Dynapleats. JGH
found them as lacking in transient "snap" as
did I. The line has been expanded down-
ward with sealed-box systems using a single
driver. SFI says that dealers may now offer
customers flat-wave technology in a moder-
ately priced speaker. Unfortunately, a single
Dynaplate is so much smaller than the
wavelengths it reproduces that it launches
a spherical wavefront.

I've never cared much for omni speakers
(except for mono), since their design is
based on a misunderstanding of the func-
tion of high fidelity reproduction. Richard
**SHAHINIAN** is nearly alone among high
end manufacturers in advocating and
designing such systems. His current models
lack the midrange colorations that have
marred previous systems, so I can recom-
end them to those who like this sort of
sound. You may also wish to read his
thoughts on what constitutes proper bass
reproduction, which seem to grow from
the view that a speaker is a musical instru-
ment (or an analog of same) rather than a
neutral transducer.

In a complete turnaround from his previous
omnidirectional designs, Stig Carlsson's
current **SONAB** speakers attempt to
minimize room interaction (in a fashion
similar to the original Snell Type A of a few
years back). By positioning the drivers so
they are much less than one wavelength
from the wall at the highest frequencies
they reproduce, there will be almost no
alchemist
(al kə mist) A person who seeks to transmute base metals into gold; a magician with the power of transmutation.

Question: If Talisman products are so technologically advanced, why do you give them names associated with magic?

Answer: Because we understand that technology is only a means to an end. The ultimate goal of all Talisman products is to allow you to break down the electronic and mechanical barriers between yourself and the music. The best technology cannot be distinguished from magic because it appears effortless. The best tool becomes an extension of its user. Results matter much more than endless pages of technical justification for "breakthroughs" that somehow don't sound better.

Does this mean that research and development don't count? Of course they count, but only as much as they really improve your listening situation.

The Talisman Alchemists are more than the sum of their technical advantages. They embody the systems approach. Their synergism is centered on the goal of delivering recorded music as a present reality rather than a veiled memory.

When you make the substantial investment needed to obtain a first-class moving coil phono cartridge, you want to be sure you are getting top-level performance. Please listen to the Alchemists and compare. But don't compare them to other high-output moving coils. Compare them to the most highly rated combination of low-output moving coils and step-up devices. And let your ears decide.

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acoustic interference from wall reflections. In the treble, where this is not possible, an absorbent back panel is used. In the floor-sitting Sonab models, the woofer sits close enough to that boundary to achieve the same effect in the midbass. This is a design approach I think we'll see more of in the future.

SOUTHER introduced two new straight-line tracking tonearms that permit VTA adjustment while the record is playing. These are the Tribeam models, one for 12" and the other for 16" records. Souther is now also the importer for a German MC, the Clearaudio PSO. Although it will work in other arms, the design has been optimized for use in the Souther.

SOUNDLAB has a new design approach to electrostatic bass. The diaphragm is subdivided so that the fundamental bass resonances are staggered. The result is claimed to be an improvement in efficiency while maintaining flat response, as well as a reduction in front/back dipole cancellation. As the paper puts it, "Two wonderful things happen. The characteristic resonant peak disappears and the efficiency of the woofer increases, because it is functioning on sensitive resonant energy:" But you can't have it both ways. If there's an efficiency gain from resonances, then those resonances must still be present and coloring the sound. Right?* 

*SOTA will soon ship a turntable that combines an acrylic platter with a low-pressure vacuum hold-down system. (A real "belt and suspension" approach.) They've also designed a specially shaped Intermat to go under the disc, even on 'tables with acrylic platters. Finally, the Electronic Flywheel (exclusively for SOTA 'tables) is a conditioner designed to isolate the motor from any powerline disturbances. In talking with their head, Robert Becker, I learned that he, too, is a fan of open-reel recorded tape; maybe that's why he's involved in making superior turntables.

SUMIKO had a number of interesting new products and announcements. They are now the official importers of the SME Series V. (Thus ends the era when Shureimported SME arms and you could buy them at discount.) The new Talisman Alchemist Preamplifier is designed specifically for high-output MCs and, though priced at $1275, is claimed to sonically equal preamps in the $2000+ range. An unusual design approach is evidenced in the attention paid to minimizing electromagnetic interaction among various sections of the circuit.

The FB-1 "Fluxbuster" is a demagnetizer for all MM cartridges, and for those MC pickups whose coils contain permeable material. Don't laugh; the magnet's presence will slowly magnetize the core. Sumiko claims that the audible effects of magnetization include increased distortion, peaky highs, and imaging anomalies. (This may explain why my Dynavector 17D, which supposedly has no damping material to deteriorate, does have a permeable core, became quite hashy-sounding.) It will not work with variable reluctance pickups since the coil is wrapped around the magnet, which will be weakened or demagne-

*8 Not necessarily. If the resonant peak is dispersed over a wide range, and if the "natural" speaker (without the resonance) is deficient in response over the same region, then the result can be quite good. True, dispersing the resonant peak will inevitably result in some (but not total) loss of its power. Yes, the resonance will "color" the sound, but given the original deficiency the coloring will be more true to life.
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THE THUNDER OF THE PLANETS...

Listen to the BPA-1008 High Technology, High Definition Amplifiers. • Meets all the design criteria of Ottala and Cherry. • Features nested multiple feedback loops, wide bandwidth and high slew rate with a dominant pole frequency of 15KHz, resulting in constant feedback and zero phaseshift from DC to 20 KHz. • A fully regulated power supply yields true DC coupling and incredibly solid bass. No protection circuitry within the signal path, yet fully protected. 100 w/ch. into 8 ohms, 175 w/ch. into 4 ohms and 350 w into 8 ohms in the built-in bridge-mono mode. • Coming soon: Model LCA-10 preamplifier.

Spectrascan, Inc. 5923 N. Nevada Ave., Colorado Springs, Colorado 80907, (303) 599-9254 Dealer and representative inquiries invited.
tized by the process.

Sumiko points out that the FB-1 does something which can't be done with a tape head demagnetizer. True, but bulk tape erasers are much more powerful! You can demagnetize moving-magnet or variable-reluctance (induced-magnet, moving-iron) pickups yourself. To do this, disconnect the tonearm leads from the preamp. Remove the stylus assembly from the body. If your pickup is MM, move the stylus assembly at least a few feet away. Demagnetize the body with the bulk eraser. If your pickup is VR, reverse this procedure and demagnetize the stylus assembly. Don't do either of these if you can't separate the stylus from the cartridge.

At a not-cheap $100, the FB-1 is primarily for dealers or for those listeners with several pickups. But if it gives you an extra six months' use from an expensive MC that appeared to be defective, it has paid for itself.

**SURROUND SOUND** is now selling their own version of the Aphex decoder (q.v.). Note, however, that it does not contain exactly the same mix of features (it doesn't decode SQ, for example) so prospective buyers should think carefully about exactly what they want in a surround sound decoder before buying.

The **SYNTHESIS** speaker systems are from Conrad-Johnson, though designed by a different engineering team than the people who design the electronics. Both JGH and I found them bland, grainy, and blah sounding, not unlike the 'Boston Bland' sound of years past. Is this a fair assessment? After all, the rooms at the Americana-Congress Hotel can be pretty grishly sounding. I'm inclined to say that it is fair. Exhibitors should be well aware of the acoustic conditions that prevail, and take reasonable steps to counteract them. There were plenty of firms with good-sounding exhibits in all price ranges. Therefore, I don't feel at all uncharitable in saying that if a speaker sounds bad at the show, a lot more than half the responsibility belongs to the manufacturer.

The **TALWAR** equipment cabinets are not only beautiful, hand-crafted pieces of furniture (and priced accordingly), but are also an electronic environment for your system. Besides there being a heavy duty power cord and an enormous copper grounding strap, there's a fan, MOV transient suppression, four outlets with individual line filtering, and a master receptacle that permits one component to switch on four others (with options for delayed turn-on and remote control).

Your turntable sits on top, and you have a choice of marble, wood, or petrified wood bases. There are three inflatable air springs underneath (a pump is supplied) to isolate the 'table from vibration. This brief and incomplete description cannot do justice to the thought and craftsmanship that went into this unique product. Not cheap, but a permanent investment and well worth looking into.

**VITASON** continues on its lonely path, supplying only hi-fi products that are substantially organic. Their motto: "You can't get natural sound from unnatural substances." Since everybody and his brother makes an electrostatic speaker, they decided to jump on the bandwagon. No Mylar for them, no sir. Their diaphragm is made from sheep intestine membrane, and the speaker system that results is called the Dynableat.

Sheep intestine is not exactly the most stable material, so the diaphragm must be replaced after every ten hours of operation (or until your olfactory sense is alerted). This is not really such an inconvenience, since your average audiophile doesn't spend all that much time listening to his system. Since most hi-fi nuts don't have a walk-in freezer in which to store spare diaphragms, Vitason supplies them freeze-dried, wrapped in aluminum foil.

Replacement couldn't be easier. First, remove the 20 readily available Torx screws that hold the speaker to the base. Then dismantle the 6 bracket arms which hold the frame up, while two other people prop it to keep it from toppling. Carefully lower the frame to the floor. Remove the 35 screws.
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M. Berns Industries creator of Tiffany Connectors is proud to announce a new line of transistor electronics for the discriminating audio purist. Designed by William Conrad and Lewis Johnson and manufactured by conrad-johnson design, inc., these products achieve the long awaited union of musical accuracy and solid-state technology. World-wide distribution will be through M. Berns Industries. Motif products will be available soon from selected audio salons.

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Amethyst 10

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that retain the top plate, then pry loose the 102 small staples holding the grille cloth. The diaphragm is mounted on a special carrier and is slowly pulled out, to keep it from catching on the stators (made from bramble bush branches). Reverse the process with the new diaphragm (don’t forget all the staples, or the grille cloth will rattle at levels above 75 dB), and then repeat these steps with the other speaker. Voila! What could be simpler?

Not to be outdone by van den Hul, Vitason is offering a cartridge retipping service, which at first will be limited to Deccas. They have found that the pointy tip of a carrot makes the ideal stylus (after all, it has to be tough enough to penetrate the hard earth). The modified pickup is known as the—oh, I just can’t bring myself to say it.

VPI’s new version of the HW-19 turntable has a number of improvements, including a lead-filled acrylic platter, an optional acrylic plinth, a spindle threaded for a reflex clamp, and a custom AC motor. In July, VPI will ship a black box that sits between the wall outlet and the ‘table, and which is claimed to reduce motor cogging. It actually seems to work! There was a noticeable reduction in “ground” and an increase in depth and imaging specificity. At $375 it is not cheap, but Harry Weisfeld says it will effect these improvements on any device using an AC synchronous motor.

Dave Wilson has become an extremely polished performer, wittily presenting (over and over again) his WAMM system without any loss of sincerity, good will, or ingenuousness. His was, as usual, the best sound at the show. There have been two improvements. One is a new midrange speaker that, among other things, allows SPLs of up to 120 dB. The other is the substitution of discrete component circuits, designed by John Curl, for the standard op-amps in the Crown equalizer used with the WAMM system.

Dave told a tale of one of the WAMM’s owners, a midwest potato farmer. “He owns just six records, two of which are Conway Twitty—and those are the good ones!” I couldn’t resist blurting out, “Does all that music help the potatoes grow better?” “Yes,” shot back Dave, “they come up mashed!”

Wolff Research has cleverly revived an old design. Really ancient readers may remember a ’50s tonearm where the headshell was attached to two pivoting tubes (one on either side) in such a way that it maintained groove tangency across the disk. This is called a pantograph arm, and it was used some years back by Garrard in a slightly different form.

The Wolff approach is the simplest and lowest in friction I’ve yet seen in such a design. The cartridge mount has a vertical axle that rotates in a low-friction bushing. A thread runs around a slot in the axle to a second, fixed axle at the rear of the arm. As the arm arcs across the record, the thread rotates the cartridge mount, maintaining tangency.

The arm is claimed to be less than fully rigid so that resonances are damped and do not pile up at one frequency. This is not a new idea, either (q.v., the phenolic arm from NAD), but the lack of rigidity introduces a new range of bending modes, which are themselves resonances. The designer also claims this flexibility gives enough damping so that either low or high compliance pickups may be used, without significant subsonic resonances. There seems to be confusion here between the fundamental resonance of the arm/pickup system, determined by the mass of the arm/cartridge and the cantilever’s compliance, and the resonances of the arm itself. Still, this is an interesting and noteworthy design.

10 I’m afraid I couldn’t agree less. Much of what has been learned about tonearm behavior in the last five years concerns the importance of the tonearm’s absorbing energy from the cartridge (see our initial report on The Well Tempered Arm in Vol. 7, No. 8). The design of the Wolff arm makes such absorption very difficult by placing insecure tonearm structural interfaces right at the cartridge mounting platform, not to mention in numerous other places down the length of the arm. The Wolff is the opposite of a tight, rigid arm. In comparison, the importance of perfect tangency is over-exaggerated, I feel.
The XSTATIC SYSTEMS EC-One is a full-range ESL with curved diaphragms. The designer explained the trick; he holds the diaphragm tight at right angles to the curve, with only moderate tension along the curve. The system stands 82" high and, with its steel-rod electrodes, is very reminiscent of the Saunders design which appeared in The Audio Amateur a decade ago. The sound is what you would expect from a good electrostatic: transparent, detailed, and low in coloration. And, because of the curved design, there was no "windowing" or "venetian-blind" effects. The $6000 tag does not seem too steep considering the work required to make a curved panel. Worth auditioning.

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Kinergetics KBT-1 Broadcast Tuner overcomes the largest single barrier to good sound by radio—the broadcasting station itself.

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In 1983 Sonographe demonstrated the feasibility of producing a high quality, moderately priced turntable in America. Response to the Sonographe SG3 was immediate and highly favorable. IAR bestowed on this design the prestigious Engineering Achievement Award. Despite this favorable reception and impressive early sales, a combination of “teething” problems and a shortage of capital caused the manufacturer to suspend production. Conrad-johnson felt that this budget priced audiophile product showed too much promise to die young. Accordingly, conrad-johnson design will resume production in our Virginia facilities. The Sonographe SG3 will extend to turntables our commitment to musical accuracy, quality and value.
A Fusion of Art and Technology

Synthesis was founded by William Conrad and Lewis Johnson to design and produce loudspeakers capable of creating the illusion of live music in home listening environments. Achieving this goal requires a speaker that is tonally correct, images precisely, reproduces fine detail cleanly, and is capable of reproducing the wide dynamic contrasts of live music.

Advanced computer measurement and design techniques, together with extensive auditioning of design alternatives, have resulted in speakers that attain unusual accuracy in the reproduction of music—truly a fusion of art and technology.

Synthesis, 2817M Dorr Avenue, Fairfax, Virginia 22031
Nova CPA-100 solid state preamplifier. Inputs: MM (MC optional), 2 line level. Tape loops: 2. Dimensions: 19" by 9½" by 4". Weight: 15½ lbs. Price: $1695 (optional moving coil card, $300). MANUFACTURER: Nova Electro-Acoustics, P.O. Box 25488, Los Angeles, CA 90025. (213) 477-7491. Nova Electro-Acoustics is not exactly a household word, even among audiophiles. Nevertheless, for several months prior to the Nova’s arrival I was repeatedly told how wonderful it was by other manufacturers and other audiophile acquaintances. With this advance publicity the Nova had some high expectations to meet, and it measured up well to the reputation which preceded it. Its sound quality is in many ways competitive with the best preamps on the market, regardless of price—it’s not hard to see why so many people have fallen in love with this preamp.

The Nova’s sound is spacious, airy, slightly on the sweet side, and quite musical. It has a very three-dimensional soundstage and is one of the few components I’ve encountered that provides accurate and detailed sound from good recordings, while still managing to be listenable with bad ones. The Nova does not offer the ultimate degree of resolution, nor is it as quick as a few other preamps I’ve heard, but its deficiencies in these areas are noticeable only on better electrostatic speakers, and possibly on the best dynamic speakers. Its shortcomings in specific areas, however, are offset by the its ability to present music in a coherent manner. This is a property missing in so many products, which seem outstanding in terms of their performance in individual areas but as a whole fail to render sound that resembles live music.

Dynamics and bass performance are strong suits of the Nova. Upper and mid bass are exceptionally tight and clean, as well as reasonably quick. The Nova’s bass loosens up a little in the bottom octave, but you’ll notice this minor imperfection only if you have very good subwoofers. The Nova’s bass performance and life-like dynamics combine to create an upper and mid bass drive that captures the beat and rhythm so important in creating the sensation of a live performance. It’s the energy you sense at live performances of jazz or rock. These outstanding dynamics are not limited to the bass or to recreating sonic fireworks, though.
The Nova excels at accurately reproducing dynamic contrasts, be they spectacular or subtle.

Tonal accuracy is quite good, particularly in the midrange. I suspect that this property combined with the Nova's dynamic capabilities and good soundstage are responsible in large part for the coherence of its musical presentation which I mentioned above.

There are some shortcomings. The high frequencies, though airy, are a little lacking in detail and slightly soft. The upper midrange is somewhat forward, though it does not sound exaggerated.

The major shortcoming, however, is the need for a separate headamp if you're using a low output cartridge. Nova does sell a headamp card for $300 (and at that price it is something of a bargain), but its capabilities and quality do not match those of the preamp. Therefore, to obtain the outstanding performance of which the Nova is capable you're going to have to spend the extra dollars for a separate headamp.

My recommendations, based on combinations I've tried, would be the Electrocompaniet at $450, or the Dayton Wright 777 (if you can afford it) at $970. My experience with the Klyne SK-5, which includes the Klyne SK-2A headamp as an integral part, suggests that the SK-2A would also work well. If you prefer a somewhat more mellow sound and a holographic soundstage, the SOTA II produced exceptional results in conjunction with the Nova.

The most cost-effective approach is to use the Nova with one of the high quality, high output moving coils that are now available. I obtained marvelous results using the Sumiko Alchemist III S. Using the Alchemist, or any of a number of other high output cartridges, makes the Nova a very reasonably priced way to obtain top quality performance.

A few final plusses are the Nova's attractive, though conservative, styling and a bevy of features omitted by many high end preamp manufacturers. The features include a polarity inversion switch, numerous inputs (Aux 1, Aux 2, Phono), and two complete tape loops. The controls also work properly. The volume control tracks the mute mutes, and the balance is equal when the knob is at 12 o'clock. When you have suffered through as many high end preamps with poorly laid out, ill-functioning controls as I have, you appreciate these little details.

All in all, I feel the Nova is an outstanding preamp with high output cartridges, and reasonably priced in the face of what many better known but inferior sounding competitors are asking. The only real competition in its price class is the Electrocompaniet Pre One! I would chose the Pre One for use with low output cartridges and the Nova for high outputs. To describe briefly the differences between these two units: the Nova tends towards a big and musical sound while the Pre One is distinguished more by its quickness and detail. My personal choice is dictated by my fondness for low output MCs, but those who have heard both in my system were evenly divided in preference, with everyone agreeing that the Nova and the Electrocompaniet are both outstanding. Without doubt, both represent an encouraging trend in solid state preamps towards top quality performance at a realistic price. You couldn't say they're high end for the masses, but they do bring the near state-of-the-art a lot closer to a great many audiophiles.

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SWW

1 Let us not forget the Conrad Johnson PV-5, which has proven to be one of the most satisfying sounding moderately priced preamps I have ever used for any length of time; it costs about $200 less than the Nova. Without specifically comparing them, I have a feeling that the Nova and the PV-5 might sound rather similar, and I suggest that anyone considering the purchase of either of these preamps take a serious listen to the other.

JGH
THE DUAL 505-2
HOW AFFORDABLE
CAN A GOOD RECORD PLAYER GET?

Belt-drive turntable with integral arm.

It is interesting how much noise record fans generate over the sins of the CD player, and to see the religious cults built up around the high end turntables like the Linn, SOTA, Goldmund, and Pink Triangle, yet how little attention is paid to the dearth of decent low and medium priced turntables. You can be sure that the analog record will not survive on the basis of record-playing systems that cost over $1000—nor will high end audio survive on that basis, I suspect. We need decent record players for under $250 that at least rival the cheaper CD players, or exeunt omnes 33 rpm.

The Japanese seemed well on the way to meeting these needs before the advent of CD, but now they don’t seem to care. Most of today’s inexpensive Japanese record players are lower in sonic quality than they were a few years ago, and there are far fewer on them. They are virtually all straightline servo-trackers that sound terrible. Granted, they often look nice, but a tinny ringing platter, the lack of any suspension, a resonant tonearm suffering from constant servo lag, and an insecure cartridge-to-tonearm attachment just aren’t the answer. Such ‘tables are far too vulnerable to acoustic breakthrough, they don’t damp the platter, and most P-mount straightline arms smear the midrange, smear the highs, and destabilize the imaging. As for depth, does the world really need depth-proof turntables?

The British have an answer to part of this problem in the Rega, but they don’t seem to want to publicize it abroad—or even to send it out of the country! The Rega RB-300 tonearm is a landmark product that successfully competes with virtually any tonearm on the market at any price. You can pick up a Rega RB-300 B arm in London at a discount (and less VAT, which is waived on export items) for around $90. If you consult your British hi-fi magazines carefully, you will find
numbers you can call to buy the Rega 3
turntable and the 500B tonearm in the
UK for about $250, including shipping.

Save by the Audio Cheapskate, how-
ever, these extreme measures are
unlikely to be pursued by any large
group of Americans; calling London to
order a Rega is more cult than com-
mon. The U.S. badly needs a mass-
produced record player to keep the
33 1/3 rpm record alive. Units that
everyone can obtain and afford—not
adventures in esoterica—will keep the
analog disc coming.

Enter the Dual 505-2. It is scarcely
equal to the Rega 3 in quality, but it
may well be the best low priced unit
available in the U.S. While it is a con-
ventional steel deck, and uses four
foam-damped springs to provide a
rather minimal suspension, the deck
sells for only $200, and its sonic
qualities are a minor triumph.

The 505-2 evolved out of the Dual
501, which was a low priced belt-
driven model that Dual never expected
to do well against their own efforts to
out-Japan the Japanese with feature-
laden direct-drive units. The British,
however, voted with their ears and
pocket books. They bought the belt-
drive unit and deserted Dual's upscale
direct-drive engineering disasters. One
of Dual's cheapest turntables thus
became one of the biggest selling units
in Britain.

The 505-2 is the result of several
false starts at replacing the 501, in-
cluding a version of the 505 with a
typically rotten Dual headshell. The
erlier versions were rejected by the
British, however, making it clear that
Dual would have to actually improve
on the Model 501—or else. The result
is range of refinements such as a good
headshell, a decent mat, and a much
heavier and less microphonic plinth.

Even so, Dual puts money into a
nearly useless strobe feature on the
505-2, and produces an overly com-
plicated sidethrust adjustment scale that
should have gone to a better platter,
still better headshell, decoupled
counterweight, and better mat. Use-
lessly included are cartridge shims and
a fixed plastic adjustment gauge so you
will get cartridge SRA/VTA and
overhang right. Instead of these, use
your own protractor, and check to see
if a given cartridge can be made to
work without shimming.

These non-economies notwithstanding, you get a stable belt drive, a de-
cent synchronous motor, enough
power to avoid speed regularity pro-
blems, a surprisingly good rumble level
(as good as with many high-priced
units), a suspension which is almost
adequate to the task, and a halfway de-
cent arm.

This may sound like faint praise—
and it would be if the Dual cost the
same price as the AR, or if the Rega was
available in the U.S. at British prices.
The Dual 505-2 is widely available in
the U.S., however, and it is dirt cheap
by today's standards. Further, its
technical features translate into sound
qualities that allow you to listen to
music rather than to the record player.

The 505-2 offers more musical and
stable pitch than comparably priced
NADs and Harmon Kardons, more
than enough freedom from turntable
noise to hear the music, and an arm
that does not aggressively color good
cartridges that match or exceed it in
price. The arm does have its reso-
ances, but they are not as audible in the
midrange as in the NAD 5120 or Har-
mon Kardon "T" series. While the
Dual 505-2 does not damp the record
as well as turntables that cost signifi-
cantly more, its mat and platter com-
bination are adequate. The Dual is
vulnerable to acoustic breakthrough,
but it does not smear the lower mid-
range and upper bass to the degree that
you find in most comparably priced
units.

With a reasonably good moving
magnet cartridge, or a well-chosen
moderate-compliance moving coil
(with a nonresonant body), you will
get a somewhat forward musical sound with moderate bass, reasonable depth, and imaging that no one should be ashamed of. If you listen to the Dual for some time, you will become aware that it is far less prone to smear or blur low level musical detail than most of its price-point competition. You'll also notice that the music has more stability and that you have more of a tendency to forget your hi-fi system. This is the ultimate test of a turntable: to be able to forget it is there.

You can also upgrade the 505-2's sound with very little effort and money. The Dual is no SOTA, so you will need a stable floor or cabinet, or a sturdy wall on which to mount a shelf. Good as the mat is at the price, the Dual 505-2 will sound much better with the Audioquest sorbothane mat. The arm will also sound better if you screw the cartridge down hard onto a very thin layer of mastic or some other sticky adhesive placed between the cartridge and headshell, and if you wrap about two layers of ¼" to 1" fiber wrapping tape around the tone arm tube at a point just near the headshell junction and about an inch from the pivot. Set the bias a bit lower than the scale indicates, and avoid high-mass, low-compliance, or resonant-body cartridges. Leave the dust cover off when you play the unit anywhere near the speakers. These are minor modifications but they do clean up the sound.

Even with such modifications, I’d be hard put to say that the 505-2 plus cartridge is really superior to the cheapest Magnavox and Marantz CD players—both of which are being sold off in the Washington area for about the same price. These CD players lack depth, low-level detail, and air. They also collapse the image and sometimes have a slightly hard upper midrange. But, the Dual 505-2 adds more coloration in the midrange and equal coloration in the treble, restricts dynamics, and has a slight one-note-bass character. In short, the Dual 505-2 rivals the better discount CD players, but it does not surpass them.

There are, however, thousands and thousands more records than there are CDs, and this situation will last for the next decade. The Dual may not provide better sound at the price, but it does provide access to a much better selection of music. If you can afford a moderately expensive cartridge, the 505-2 will give you excellent sound for the money. If you are really hard-pressed, slap a Grado GTE+1 cartridge on the Dual, and it will still only cost $230. Put one of the thousands of good performances on record onto the Dual and you will get better music than from an NAD or Harmon Kardon 'table, not to mention the more colored Japanese straightline tracking direct-drive competition.

Now, if the U.S. and British importers can only get Dual to build an upscale companion for the 505-2 with a better arm and suspension . . . and if U.S. audiophiles and dealers could only get companies like NAD and Harmon Kardon to similarly refine their low priced units, and could get Rega brought into the U.S. at a reasonable price, and could get broader distribution for the lower priced Aristons and Missions, and could get the cost down on the AR turntables . . . We might be able to give the market the record players it needs for analog records to survive and prosper.
THE BERNING 2100M POWER AMPLIFIER

Wife: I read your draft reviews on the Futterman, Conrad Johnson, and Audio Research.!
Husband: Ummmm.
Wife: If I were one of your readers, I'd think you missed a key point.
Husband: Urrmm?
Wife: Doesn't the Berning 2100M cost less than half of all those other super amplifiers you are reviewing?
Husband: Urrmm?
Wife: Even if it wasn't the absolute best, wasn't the Berning 2100M directly competitive in most ways with amplifiers costing twice as much?
Husband: Grmmmmmm.
Wife: Didn't you say that Dave Bern-

ing had corrected virtually all of the problems in depth and dynamics you heard in the early versions, and now had a much smoother continuity from top to bottom than the version Stereophile reviewed earlier.
Husband: Yes, but it still has all the minor limitations I described in my reviews, and it's cable-sensitive. You really do have to choose interconnects and speaker cables that match the amplifier.
Wife: I thought you said it worked very well with Monster Powerline II and the Interlink Reference interconnects, and that those were popular and anyone could get them. Also, didn't it work very well with the Randall cables?

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Anthony H. Cordesman

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1. See AHC's review in Volume 7, Number 7.
Husband: Yes, but...

Wife: I thought you also said it had some pretty nifty technology. After all, it does provide 100 watts RMS per channel, and it provides nearly 170 watts per channel before it clips. It also has exceptional bandwidth for a tube amplifier with -3 dB points at 7 Hz and 70 kHz, uses only 8 dB of negative feedback, has only 4.5 ohms of internal signal output impedance, almost no TIM, and has no slew rate distortion.

I've heard it's also "all triode" and uses a special triode output stage with controlled damping and superior linearity. The power supply uses totally new kinds of tubes called MOSFETs, diodes, Triacs, and Toroids, and has a high frequency conversion system that charges the capacitors 140,000 times per second and eliminates power line garbage and transformer hum. And, it has very soft clipping.

Husband: You're just reading the spec sheet that Dave Berning sent me, and you've just invented four new kinds of tubes that aren't in the literature you're reading from.

Wife: So what, that's how most reviewers write their reviews, anyway. Besides, I'm entitled to some poetic license.

Furthermore, I think you should emphasize the fact that the Berning 2100M has extended tube life, weighs only 40 pounds, and measures only 5 ¼ inches high, 19 inches wide, and 17 ¾ inches deep. I like the idea of a tube amplifier that people can actually lift up and easily place in their home systems without it causing hum, heat or hernias.

Husband: I don't review for sissies.

Wife: In fact, you even said you like the Berning 2100M more than the Audio Research D-70, the Quicksilver, or the Conrad Johnson Premier Four.

Husband: Furrmpxh! Well, I have to admit that's true. I think the Quicksilver is very good, but its a classic tube amplifier without real bass power or control, and has sweet, rather than accurate, highs without the extension and detail of the best tube amplifiers. The Berning has more extended, detailed, and dynamic highs than either the Audio Research D-70 or the initial version of the Premier Four, and gives up nothing in the bass or midrange. The modified version does have the sound integrity that was lacking in the version reviewed by Gordon Holt.²

Wife: Then it seems to me that you should also point out that the Berning 2100M is a real "best buy," given that it provides nearly 95% of the sound quality of the Futtermans, Conrad Johnsons, and Audio Researches, all of which cost around $6000, and does so at a price well under $3000.

Husband: Well, what about the improved version Conrad Johnson Premier Four and the Audio Research D-70 II and D-115 II?

Wife: They may be great, but you haven't actually listened to any of those, have you? And you have listened to the Berning 2100M. Further, you just mentioned the names of the competing products your readers should listen to, so they can choose for themselves.

Husband: Let me make three things clear: 1) reviewers don't have to listen, they can intuit; 2) we aren't going to sell magazines by encouraging our readers to trust their own judgment; and 3) I'd have to go to all the trouble of writing another review.

Wife: I thought you were just being lazy. How about cleaning out the garage instead?

Husband: You're right! Its a "best buy!" I'll rush up and hit the word processor now, while the muse is still with me.

Wife: Good. You can do the garage when you come down.

² See JGH's review in Volume 7, Number 3.
SOTA SUPERMAT


I've always found platter mats a rather frustrating subject. The problem was that I couldn't find any one "best" mat; they each had distinct strengths and weaknesses, so the right mat was both hardware- and software-dependent. Each of the better mats seemed to work best on particular kinds of music and with certain cartridges and turntables.

As an example, the Torumat worked best with relatively undamped cartridges of low to moderate compliance (such as a Dynavector Ruby) on classical music. But the Torumat with a well-damped cartridge (such as a Talisman S) sounded too juicy in the midrange, and too slow and heavy in the bass. The Oracle Groove Isolator did a great job of bringing out detail, but sounded muddy in the bottom octave.

And so it went for each mat until I came to the SOTA Supermat, which proved to be something of a relief. It is the first mat I've found that can be recommended for just about every cartridge and type of music. I'm not claiming it does everything better than every other mat, for there are undoubtedly some cartridges, tonearms, and records that will work best with another mat. It is, however, the best all-around platter mat I've heard.

The Supermat is actually two separate mats: a hard acrylic top mat and a very soft, spongy inner mat. The two parts are available separately at $100 for the acrylic mat and $35 for the undermat. The acrylic mat is quite thick (about 1/8") and slightly curved downward towards the outer edge. The curve (called by SOTA the "Herman Curve" after its designer, Rodney Herman) is claimed to allow tighter coupling of the record to the mat through the use of a reflex clamp (In case you've never noticed, records have a slightly thickened outside edge). In fact, due to the Herman Curve, the Supermat must be used with a reflex clamp or it will sound dreadful for the first third of the record—the outer edge of the record will be 2-3 mm above the mat!

The acrylic mat has two other important features. First, it has mechanical properties similar to vinyl. Thus there is a minimum of impedance to the transmission of mechanical vibration from the record to the mat. Secondly, the thick mat means a higher mass in which vibrations can be absorbed.

The extremely soft and compliant inner mat has exceptionally high mechanical
damping to take care of any vibrations that manage to make it through the acrylic mat, and it also serves to isolate the acrylic mat from the turntable platter.

The design premise is logical: couple the record tightly to the mat; transmit vibrations away from the record; then damp them by intimate contact with a large mass. This systematic approach to turntable design seems sound in its basic premises and, judging by the sonic results, it works.

The two most obvious improvements made by the Supermat are in the areas of dynamics and high frequency extension. Compared to the sound of the lower treble using the standard SOTA black mat, the Supermat lacks hardness, and at the same time the extension in the upper treble sounds more natural and less strained. This improvement is most easily noticed on pianos and synthesizer, but is also discernible on violins playing in their higher registers.

The improvement in dynamics is not subtle. Twelve-inch 45's cut at high levels will blow you out of your chair. This mat delivers impact that will call into question the claims made for the superiority of digital's dynamic range. It gives the music the kind of body that hits you in the chest like a brick.

There is also a slight (though easily noticeable) improvement in midrange clarity. This is most apparent on choral works and woodwinds, and is best described as a sharper sense of focus. The soundstage's dimensions remain about the same, but placement of the individual instruments is more stable and specific. Finally, there is a better sense of drive, or "beat," in the upper bass, which sounds both tighter and cleaner.

The one area in which the Supermat does not excel is the low bass, from about 80 hz down. SOTA's less expensive Brown mat (as well as several other mats) outperforms the Supermat in this region, and I would put the Supermat on a par with the standard SOTA black mat in the bottom two octaves.

Despite its limitations in the low bass and my initial shock at being asked to pay $135 for two pieces of plastic, my conclusion is that this platter mat with the presumptuous name is worth what SOTA is asking for it. The best never comes cheap, and the improvement the Supermat makes is more than subtle. I can recommend it as a cost-effective upgrade for the SOTA Sapphire (if you're not already planning to buy a vacuum conversion). For those who are considering vacuum, the Supermat does not provide the level of improvement (with the exception of dynamics) afforded by SOTA's vacuum conversion option, which costs $400. On a dollar-for-dollar basis the Supermat may be the better value, but I would opt for the vacuum, particularly if I had a top quality tonearm. Once you've invested that kind of money in your phono front end it doesn't make sense to deny yourself state-of-the-art performance to save a couple of hundred dollars.

For others, the Supermat should be an easy choice and provide an improvement well worth its cost. I tried the Supermat on a couple of other 'tables, and in each case the same type of improvements as were obtained on the SOTA were noted. There are some caveats, though. First, there are a few tables on which the Supermat can't be used due to its height (e.g., on the Elite Rock, where there is insufficient room between the trough and the platter). Also, make sure that your tonearm can be raised sufficiently to give proper VTA. The Supermat (both pieces together) is about 0.475" thick. Subject to the above qualifications, the Supermat is highly recommended.

SWW

1 SOTA advises me that the so-so performance I obtained in the low bass was attributable to the brand of reflex clamp I was using. SOTA recommends using the GB clamp, which is rather rare in this country. SOTA will be offering their own reflex clamp by this summer, at a rather steep $50 (estimated).

2 SOTA now offers the Supermat in a version designed for use with their vacuum tables, for $150. A report will follow.

3 This caveat will be meaningless to those who are unfamiliar with the Elite Rock, but a report on that table is upcoming.

Stereophile
THE CARTRIDGE COMPARISONS  
PART III

Anthony Cordesman

Well, they keep coming. Here are some great, good, bad, and indifferent cartridges. Naturally, you'll want to buy every one regardless of quality—cartridges are like stamps, you have to have them all to have a good collection.

THE MONSTER CABLE ALPHA 2: $650

Listening to JGH's sample of the Alpha 2 revealed enough irregularities to suggest that something was wrong with the one he reviewed. I will leave it to Noel Lee to explain cartridge magnetization—if indeed that was the cause of the problem—but the sample I am reviewing in this issue is significantly better.

Oddly enough, the differences between the two samples don't show up in simple technical testing. Frequency sweeps of the first cartridge do show a moderate imbalance between channels and a sharp rise in the treble, plus some tracking problems in the area of 100-200 Hz. The frequency sweeps for the second sample are more consistent between channels, but still have a rise in the high frequencies. Neither response curve, using the CBS STR-170 test record, even approximates the response curves supplied by the manufacturer. My sample also proved to be a significantly worse tracker than Gordon's. That first sample would track up to a 90-micron levels while mine only performed smoothly up to the 70-micron level.

None of which correlates with the differences I hear when comparing the two samples! The second sample of the Alpha 2 proved to be a far superior cartridge to the one reviewed, and criticized, by JGH.

The bass in my sample is smooth and well controlled, and has good extension into the deep bass. There is more control than power in the deep bass, but this is a matter of taste. The midrange timbre is excellent, and free of any exciting colorations. The midrange detailing is soft—bells and percussion do not suddenly leap out or call attention—but there is great musical detail, even during very soft and very loud passages.

The high end doesn't sound the way any of the frequency sweeps look. Instead, the highs are lightly recessed and soft, but again without loss of detail or musical information. The high end is not "hi-fi"—that is, forward and dynamic—but is similar to what you hear from most live music. The Alpha 2 is remarkably free of any hardness or upper octave irritation, and its softness does not obscure a great deal of detail.

Imaging is not perfect, but it is very good. Stability, spread, and separation of instruments are all good to very good, and can be varied to suit a given system by changing the cartridge loading. Low impedance loading tends to slightly compress the soundstage, but stabilizes the imaging and adds centerfill. The overall image is slightly recessed with good depth, but...
there are some problems in projecting a forward sound when this is called for by the music. This quality complements the holographic imagery of an Audio Research SP-10, and softens many transistor phono stages, but makes the Alpha 2 the wrong cartridge for a Conrad Johnson or Krell preamp. The latter give the Alpha 2 a slight tunnel effect.

The Alpha 2 also has enough output (approx. 0.35 mV) to safely drive the better tube preamps directly, and provides very good to excellent tracking. There is smooth consistent response at the 90-micron tracking level at 1.75 grams on the German Hi-Fi Institute test record. The Alpha 2 is also compatible with virtually all tonearms of reasonable quality, and is fairly easy to align and set for VTA, even though the body size and shape make mounting and azimuth adjustment somewhat difficult.

In summary, the second sample of the Monster Alpha 2 ranks in the very good to excellent category. It is smooth and forgiving where many cartridges are forward and exciting, but it can provide a consistently musical and realistic sound. It is quick and revealing of musical detail and transients, and shows no strain in complex passages. It can also be very revealing of musical detail at high sound levels where many cartridges tend to harden the music, and is similarly revealing at low levels.

THE APATURE MC-150: $150

This high-output cartridge has highs that sound much more pronounced than is indicated by the frequency sweep. The highs are also relatively hard, and tracking was a poor 50 microns at 1.5 grams and 60 microns at 2.0 grams. This is a good cartridge in many other respects, but its merits do not offset the need for better high frequency performance, even at its comparatively low price. And there are no tremendous virtues to compensate for the mediocre tracking.

SHINON SAPHIC MOVING COIL CARTRIDGE: $395

I am tempted to describe the Saphic as an Alpha 2 with more highs and a more forward soundstage. In fact, I just have. Unfortunately, I can't provide you with frequency sweeps to see if these support what I hear. The cantilever died during frequency testing (due to a complex technical factor known as rough handling by UPS), so at the present time I don't have curves for this cartridge. I can, however, describe its sound on the basis of ample listening.

The timbre is natural and the sound is extended in both the highs and deep bass. The Saphic has a frequency balance that should be compatible with most preamps and speakers; it is a bit forward without any trace of hardness. Bass is still a bit controlled but there is slightly more bass punch than with the Monster Alpha 2. There is good audible separation, and detailing was excellent and very natural. I was surprised, quite frankly, to read that the Saphic uses a line trace—rather than microridge—stilus. The sound of the Saphic has a combination of speed, detail, and smoothness that I have previously associated with MR stylus.

The soundstage is wide and forward without sacrificing stability or depth. The Saphic ain't easy to set up, but once it is set up it provides a very natural soundstage in every dimension, with a listener's perspective comparable to rows D-H. There is a slight tendency for percussive transients to stand out a bit, but I found this exciting rather than unnatural. Voice and solo instrumentalist locations, however, are more natural and stable than with many other good cartridges.

The Saphic has a fair amount of body energy and needs a tonearm that can damp the cartridge, which will usually mean one of medium to high mass. A damped headshell like the Orsionic, MMT, and Audioquest is highly recommended. The Saphic is very sensitive to VTA/SRA, azimuth, and bias adjustment; a great deal of fiddling and expertise is required for good setup. The VTA/SRA setting was just about right when the top of the cartridge was parallel to the record. The Saphic was a good to very good tracker, but I don't have the numbers due to the technical problem referred to above. I'd
recommend about 2 grams of tracking force (2.10095683 grams for tweakers). You get the best combination of imaging stability and soundstage width with relatively low impedance loading. Output is close to 0.3 mV, making it too low for use with tube preamps unless you’re insensitive to noise.

All in all, this is a top quality cartridge.

THE KISEKI PURPLE HEART SAPPHIRE: $900

I have not always been a great fan of the Kiseki line. No two samples of the same model sound exactly alike! and the Blue has generally been a cartridge I could do without. I also have to say that my sample of the Purple Heart was a bit of a “cream puff.” It was a dealer loan and the best of three—all of which sounded roughly similar but differed slightly in their detailed performance.

Moreover, even my cream puff sample of the Purple Heart did not measure all that well. It tracked a maximum of 70 microns smoothly, showing little improvement with tracking forces above 1.75 grams. The frequency sweeps exhibited a moderate rise in the highs, and only good to very good separation. However, channel balance was good, and the 0.45 mV output makes this a real sweetheart for use with tube preamps.

The Purple Heart’s sound, however, triumphed over past prejudices, current technical measurements, and minor inconsistencies. The Kiseki Purple Heart is a lovely cartridge that provides an extraordinarily natural illusion of realism. It can provide a great deal of transient speed and excitement, but this is well integrated into a smooth, Rows K-P sound. It lacks the utmost in speed and articulation, the apparent top octave is a bit rolled off, and the bass is a bit full. The Purple Heart makes up for all this, however, with an extraordinary integration of timbre, power, sweetness, and soundstaging.

I am at a loss to say why this integration works so well, or even why it takes place at all. The Purple Heart does not provide as much musical detail as many of the other cartridges I have reviewed, but all the information seems to go together. The Purple Heart is better than the sum of its parts, blending superb midrange with a mix of other strengths; it simply happens to sound musically lovely on a wide range of material. This is one of those cartridges that needs to be auditioned, but take care to listen to the sample the dealer intends to sell you. Remember the inconsistency problem.

Setup, incidentally, is a snap. The mounting bolts screw in from the top, and the body shape makes VTA/SRA and azimuth easy to align by ear. You can alter the soundstage to taste by varying the loading, with the effects described for the Alpha 2. Try 80 ohms, but it’s a matter of taste. Any medium mass tonearm should perform well.

My sample was a great cartridge. Try one at your dealers; with luck, yours could be even better!

THE HIGHPHONIC MC-A3: $225

The Highphonic MC-A3 is a very low output moving coil (0.17 Mv) with some very highly specified performance characteristics. It provided one of the best sets of frequency and separation curves I have ever seen. The compliance is very high, and it tracks a 90-micron level at only 1.25 grams! The technical performance of this moving coil is of almost laboratory quality except for a few surprises in the separation. The response was also exceptional above 20 kHz, with no peaks or problems until about 30 kHz.

My listening tests, however, produced far more mixed results. The Highphonic’s bass is highly dependent on your arm. It will have reasonable power and punch with considerable control in a medium-light tonearm. In a medium mass arm you may get better bass, but it will be a trick to accompany this with fully stable tracking. It may be worth the effort.

The midrange is pleasant and detailed, but I was sometimes bothered by what

1 The Kiseki line is now being imported by Sumiko, who are reported as being radically committed to better QC.
seemed to be slight imaging instability. This may be a result of the very high compliance, and the fact that I did not have a truly low mass tonearm to use. I suspect the Highphonic might have done much better if my Souther had not been out on loan. I also have to say that the midrange was always just a bit "live," or forward, but scarcely annoying. The overall effect is to make the Highphonic dynamic and a bit exciting, but not exaggerated.

The treble was very interesting; it was a bit rolled off in terms of apparent timbre, but treble transients tended to call attention to themselves and to lack sweetness and air. The result was a bit analytic no matter what I did with VTA/SRA and loading. (You need to pay very careful attention to azimuth and VTA/SRA. The azimuth is fairly easy to eyeball. The SRA/VTA on my sample had the rear of the cartridge slightly tilted back.) This treble characteristic also seemed to push the image a bit forward. You can alter the soundstage width and height by altering the impedance, but you cannot get good depth. Acceptable, yes, but not good.

This is a good cartridge, but I suspect it is more for tracking freaks than run-of-the-mill music listeners. I also have to caution that it is not for tube preamps (noise problems), or for transistor preamps with any trace of hardness.

ALARUMS AND EXCURSIONS:

A few brief notes on the way to the next survey (Vol. 8, No. 4).

THE GARROT DECCA:

I wasn't happy to read that the price went up to $400 in the UK after favorable reviews. The discontinued Deccas being retipped by Garrot sell for only about $30 in Britain, and $370 is one hell of a lot for retipping and some internal tuning and modifications. At $400-$450, this cartridge is a borderline recommendation, given its extremely uncertain internal stability, the problems in wiring (it's very easy to get the cartridge to "hum along"), and the tonearm incompatibility problems (with the Souther

arm it's necessary to add about 20 grams to the headshell!). The $950 being asked by F.E. Halaburt must be an absurd practical joke, even with a dealer's written five-year moneyback guarantee against any deterioration in sound.

A rip off is a rip off, is a rip off. . . . Don't touch any Garrot at any price over the dollar equivalent of the 350 pounds it sells for in the UK. You should either import from the UK, or buy the Decca Super Gold Van Den Hul imported to the U.S. by Rocelco (Concord, Ontario). It tested out a bit better than the Audio Access (see Vol. 7, No. 8) and only costs $450 in the U.S. Incidentally, I look forward to a list of the selected dealers who try to sell the Garrot for $950. It will serve as a warning to sane audiophiles to keep away from their doors.

THE GRADO SIGNATURE 8MR AND 10MR:

The high class Grados are improved again: the 10 MR is a real product, and the Signature 8 MR ranks as my current best buy. The new Grado tonearm is superb, and unquestionably ranks as the best pivoted tonearm with a detachable headshell that I have ever heard at any price—including the SAEC and Fidelity Research. It even outperforms some far more expensive British pivoted arms without detachable headshells, including one of my favorites—the Alphason.

THE KOETSU GOLD:

A truly great new cartridge with (hopefully) much more consistency than past versions. Competes sonically with the Kiseki Purple Heart in many respects.

FULL REVIEWS OF THE GRADOS, DECCA SUPER GOLD, AND KOETSU GOLD WILL FOLLOW.
The Speaker Issue
Part I

This is Stereophile's second valiant attempt to provide a comprehensive overview of the high-end speaker scene (the first such attempt took place in Volume 7, Number 4, wherein we reviewed eleven speakers costing under $550 and one for $2000). As anybody who follows that scene will know, it can't be done. Not only are new companies coming into existence all the time, but existing manufacturers are upgrading old models and creating new ones all the time. That would make it hard to stay caught up even if we started off at zero—but we were way behind back at Volume 7, Number 4. No matter how hard we run, we will never get off this treadmill!

Hence the adjective "valiant." Our original intent was to gather together all the speaker reviews done over an approximately half-year period into one issue, but even in this we were foiled. This last June 2-5, the Consumer Electronics Show was in Chicago and, due to the strenuous efforts of our reporters, we are able to present in July our report on the Show. But to do that, we had to bump some speaker reports to the next issue (though we'll also be able to include some that would never have made this issue). We are therefore presenting only ten speaker reviews, which we have divided into three basic categories: all-out efforts at the best sound possible ($3000 and above price category); clever compromises which should be able to offer quite good sound at under $500; and those speakers in between which normally represent both a significant additional investment and much better performance.

In this issue, the all-out efforts start with the Acoustat Sixes, the "budget" speakers start with the Wharfedale Diamonds, and the in-betweens with the Spendor SPLs. But there is a penalty to this omnibus approach we are adopting: there are a lot of speakers in the same category that receive very positive reviews, but they are frequently done by different authors, so there is little chance for direct comparisons. It has also not been possible to effectively integrate these latest reviews with all the reviews we have done in the past.

Is there relief in sight from this seeming chaos? Well, yes and no. First, we will add more chaos in Volume 8, Number 4 by printing more speaker reports along with JGH's survey of all the significant speakers at the CES, as well as an updated Recommended Components listing, in which the Editor and the Publisher will attempt to make sense of all our findings.

Volume 8, Number 4 will include a number of significant speakers: the Infinity RS-1B (two views), the JBL 250ti (hopefully), the Fried Studio IV, the Dayton Wright XG10, the revivified Gale, the Genesis 44, the Goetz GMS-1, and numbers of others. You want more? Don't overlook "The Audio Cheapskate" in this current issue (Genesis 44s, Spendor SP-1s, Mordaunt Short MS20s, AR Connoisseur 20s), or "Pure Gold," in which Alvin considers the Linn Index and the Mordaunt Short MS100 speakers.

Have we come close to fulfilling our task of comprehensively covering the speaker world? Not a chance. I couldn't list on this page the speakers we haven't yet even received for review. Nevertheless, we're providing you with a pretty good shopping list, and we'll be adding to it in future issues.

LA
THE ACOUSTAT SIX SPEAKER SYSTEM

Full-range, six-element electrostatic speaker system. Frequency response: 26 to 20,000 kHz, ± 2 dB. Maximum SPL on program peaks: 120 dB@ 20' in a 16' by 24' room. Nominal impedance: 6 ohms. Dimensions: 7' by 28" by 3 1/2". Weight: 170 lbs each (with interface). Price: $3950/pair (East Coast), $4050/pair (West Coast). MANUFACTURER: Acoustat Corporation, 3101 Southwest First Terrace, Fort Lauderdale, FL 33315.

For many audiophiles owning electrostats is like having a mistress: exciting and highly desirable, but of doubtful propriety! I've always been attracted to electrostats, but had stubbornly resisted buying them, despite their almost irresistible attractions—to wit, clarity, detail, and an overall naturalness that dynamic speakers have striven hard to approach but have never equalled.

Acoustat's first speaker, the Model X, was the first successful attempt to drive an electrostatic directly from a high-voltage vacuum-tube amplifier. It was a pretty good system; it could play fairly loud without stress, and had few of the defects (limited output and susceptibility to breakdowns) that had marred previous electrostatic designs. On the other hand, you were irreversibly mated to that integral power amp, whose sound was not as transparent as a lot of perfectionists would have liked.

Acoustat soon realized that if they were ever to expand their market, they had to get rid of the integral amp. That meant using a stepup transformer.

To do this, the speaker's efficiency had to be increased to the point where no more than 100 watts per channel would be needed to drive it to high volume levels. At the same time, the transformer had to present a reasonably "comfortable" load so that most amplifiers could drive the thing. (The older Dayton-Wright XG electrostats, for example, had such a weird impedance curve—from over 100 ohms at low frequencies to less than 2 in the upper midrange, and highly reactive as well—that only Crown industrial amplifiers could drive them properly!)
But designing a proper stepup transformer was no easy task. To get good bass response, the inductance of the primary must be very high, which means lots of iron (in the core) and many turns of wire. Then, since we need a large step-up ratio to get the high audio voltage to drive the speaker, a correspondingly enormous number of turns are needed in the secondary. This produces such high inductance and so much stray capacitance that high frequency losses become a serious problem. Those have tried to build such a transformer have concluded that it is almost impossible to do it.

Acoustat's solution was so simple it almost seemed absurd. Taking their cue from multi-way loudspeaker design, where a big speaker handles lows and a small one the highs, Acoustat created their "biformer." This is actually two separate stepup transformers, one optimized for bass, the other optimized for treble. The transformer outputs are combined through a simple, first-order crossover network and fed to the single wide-range electrostatic element. Although this approach still does not yield a speaker system that just any old amplifier can drive, the ability to tailor each transformer to a specific frequency range dramatically reduces the compromises in each.

Earlier Acoustats were only one panel high, which produced a mid-range/treble beam that caused the upper-range response to vary markedly as one stood up or sat down. This effect is wavelength-dependent. If a radiating surface is much smaller than the wavelengths it is reproducing, then the waves propagate like concentric spheres, expanding evenly in all directions from the source. If the surface is much larger than the wavelengths radiated, they also propagate evenly, but as a flat, planar wavefront. Frequencies with in-between wavelengths show various degrees of beaming and uneven distribution.

The introduction of two-panel-high Acoustats (first the Six and Eight, now the 2 + 2 and the 1 + 1) eliminated this treble beaming. Part of the effect was due simply to the doubling of height, which raised by one octave the frequency at which beaming began. But this alone is not sufficient to explain the almost total elimination of the effect.

To understand what's going on here, think of the floor and ceiling of the room as mirrors. With the speaker standing up in between, we would see a tower that appears to be three speakers high, with the real one in the middle and its images above and below it. Although room surfaces do not reflect sound as well as a mirror reflects light, their effect on the sound here is essentially the same: acoustically, the speaker becomes about 24 feet high! Vertically, all frequencies are radiated as a series of straight, vertical wavefronts. This prevents the kind of off-axis interference that occurs with spherical radiation, and treble beaming virtually disappears. (Although it still exists in the horizontal plane.)

This would seem paradoxical. We have traditionally wanted the speaker to interact as little as possible with the room, yet here is a case where interaction is useful. In fact, to derive the maximum benefits from it, the ceiling and the floor in front of (not behind) the speaker need to be as rigid and as reflective as possible. This too is contrary to common sense, since we usually want the floor to be absorptive, to kill reflections that create dips in mid-bass response.

Setup of the Sixes was almost easy. Acoustat recommends an absorptive wall or drapes behind the speakers. One really can't have too much sound-absorbing material behind any speaker, so I put up 32 square feet of half-inch Owens-Corning Fiberglas behind each one. Getting good imaging was not hard, either. You angle the speakers toward the preferred listening area, and
play a mono recording. Adjust their angling and separation to obtain the narrowest center image, with as little wander as possible when moving your head from side to side. When you play stereo recordings, the setup may be refined further. The bottom of the base has a fairly large, flat area, so despite each speaker's formidable 170-lb weight, its no trouble to slide them around on the floor.

The only problem I had in setting up was the one Jim Strickland (the Acoustats' designer) predicted I would have. He insisted that the Sixes were too big for my room, and that I would have too much midbass. Well, I did have too much midbass; it was corrected with a special equalizer designed to handle just that problem.

Sonically, the Acoustat Six is one of the few speakers I have heard that stands up to comparison with live sound. With the best program material (which for me means my own recordings, Bob Sellman's digital tapes, and a handful of commercial discs and tapes), the sound has a nearly palpable quality; one could almost reach out and touch it. (I recently recorded The Swan of Tuonela; the solo English horn was almost perfectly reproduced.)

The Sixes have no perceptible "vowel" colorations of any kind; there is no emphasis of one part of the spectrum over another, either in level or quality; the sound is incredibly smooth and clean; and while there is detail in abundance, it does not draw attention to itself as if to say "hear how hi-fi I am!" Bass goes very deep, and is tightly controlled and free of garbage. I do not hear the slight bass muddiness others claim to hear in the Acoustats.

Then there's the matter of integration or coherence. One of the biggest design problems with dynamic systems is in getting multiple drivers to blend, so that the listener seems to hear a single driver. This may relate to the physical displacement of the drivers, to crossover discontinuities, or to the simple fact that radiators of different sizes and materials have varying sonic "signatures," but for whatever reason, I have heard only a few dynamic systems where really good integration has been achieved. Compared to the Six, such systems still sound somewhat disembodied. The Six, of course, has no integration problem to begin with; there is no crossover, and all frequencies are produced by the same diaphragm.

The illusion of hearing "the real thing" is almost perfect, but not quite; there are flaws. The Six's sound is slightly darker, more liquid, and somewhat romantically richer than the real thing. It lacks the ultimate delineation of detail and laser-sharp rendition of transients that would make it sound "real."

Imaging is good but not great. There isn't the pinpoint localization one hears from point-source radiators, and there are still lateral shifts as one moves from side to side through the listening area. But there are compensations. Ambience is well reproduced, with the air and space around instruments beautifully rendered. (If I had to choose, I'd say that accurate rendition of ambience contributes more to the overall illusion of reality than does ultra-precise imaging. The two qualities are not antithetical, but there is no guarantee both will be obtained from the same speaker.)

Perhaps the most significant failing of the Six is mediocre dynamics. I'm not talking about dynamic range; the Six can play at high levels without distortion, and low-level reproduction is clear and detailed. Rather, I'm referring to what some people call "dynamic contrast." It is as if the small changes in loudness within a piece are restrained. Sudden orchestral outbursts,

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1 There is a crossover, but it integrates two low-distortion transformers, not two highly resonant mechanical devices.

JGH
though not audibly compressed, nevertheless lack the impact they have when heard live. Both the Fried Q/3 and the Pyramid MET 11 (no longer produced due to bankruptcy), far less expensive speakers, give a more realistic accounting of musical dynamics.

So ends the review proper; it is as objective as I can make it. My emotional reaction to a product should play a minor part (if any) in a review, since I don’t feel musical pleasure or emotional gratification are something by which one judges sound reproduction.² Such things are left to the performer and the listener; it is enough that the equipment accurately translates the wiggles on the record into air motion. My reaction to the Six, however, is so strong that some subjective comment is necessary. It should not be taken “seriously”—i.e., don’t make it your basis for purchasing the loudspeaker. Rather, take it as the very personal reaction of one music lover to a particular piece of equipment.

The Six has certain qualities which would normally seem contradictory, that here comfortably co-exist. The most amazing of these is the way it can sound both clinically analytical and seductively romantic at the same time. It manages to be both an audiophile’s and a music lover’s speaker. With exciting program material, it is stupendously spectacular, yet it is so relaxed, unforced, and natural (especially on voice and small instrumental groups) that the music lover can forget the equipment and enjoy the music.

Quite frankly, I have never enjoyed listening to music on any speaker as much as I have with the Six. I would often put on one of my favorite recordings as background music. On more than one occasion, the Six forced me to put aside whatever else I was doing, regardless of how important it was, and listen to the music. This has never happened with any other speaker, and I am at a loss to explain it. In a world where expensive speakers often fail to live up to the expectations created by their high price, the Six is something of a check-rated “best buy.”

BS

JGH Addendum:
After reading the foregoing, we were not surprised to learn that Bill ended up buying the Sixes he reported on. What better product endorsement could anyone ask?

I am, however, a little less forgiving than Bill of that “lack of dynamics.” I find all of the Acoustat speakers a little too polite for my taste, and prefer something (almost anything) a little more gutsy through the lower mid-range area. For example, there is a “bronx cheer” sound of a trombone which bears a remarkable resemblance, in quality if not in amplitude, to a certain scatological sound. Few otherwise-excellent speakers can reproduce either sound convincingly, and—since trombones are the “power” instruments of the orchestra—their apparent dynamics suffer as a result.

² I think Bill is correct in trying to separate his emotional response from his review of the product’s performance, but not for the reason given. In fact, I think that “musical pleasure” and “emotional gratification” are precisely how one judges the experience of sound reproduction; the problem is that the reviewer’s emotional gratification may not be reproduced in any particular purchaser, and is therefore not a reliable basis for recommending a product. It does make a large difference in the outcome of a review, however.

Stereophile
ACOUSTAT MEDALLION TRANSFORMER MODIFICATION

Transformer upgrade for all Acoustat speakers with Magne-Kinetic interface. Cost (per speaker pair): $270 for 2s and 1+1s; $300 for 4s and 2+2s; $600 for Sixes and Eights. Owner pays shipping of interface module only, both ways.

The transformer is far and away the weakest component in an electrostatic speaker system. Its limited frequency range (when designed for the high step-up ratios required in an electrostatic) and nonlinearities noticeably limit system performance. This is precisely why the first Acoustat speaker—the X—used a direct-drive vacuum tube amplifier.

When Jim Strickland realized that most transformer problems could be overcome with a “bi-former” system, in which one transformer handled the bass and the other the midrange-treble, Acoustat switched. Still, the marriage was not perfect. As I commented in my Six review, the sound, though still possessing the gorgeous focus and detail electrostats are famous for, was still a bit dark and rounded-off. Though dynamic range was good, dynamic contrast was poor. Although there was no actual “gagging,” the Sixes, unlike some much less expensive dynamic systems, did not really open up on sudden outbursts.

To address this problem, Acoustat has come out with a new transformer for all its products and fortunately, since I have surrounding sound, I had a pair of old transformers to compare with the new ones. It takes a few minutes to swap them, and hence there are a few minutes between comparative auditions, but that’s better than having to depend on memory.

The first thing one notices is an increase in upper midrange and high-frequency output. The sound loses most of its sweet, rounded-off quality, becoming more crisply incisive. (Trombones finally start sounding blatty or, as Gordon would put it, flatulent.) The midrange is somewhat more forward and alive than before, rather than polite and recessed. This was confirmed with a spectrum analyzer, which showed that response shelving is now reduced to about 3 dB.

Also quickly noticed is the improvement in imaging. Instruments are more sharply and stably located. There is more apparent depth and the musical sounds are more obviously part of a larger acoustic space.

Distortion is lower. I thought the older system was exceptionally clean-sounding, but compared with the newer version it sounds positively muzzy. This is probably due to lower IM, which one would expect if hysteresis were reduced. Sensitivity is a bit higher; with the volume control untouched, output with the new transformers is about 3 dB greater. Maximum output level is also improved; I hit peak levels of over 110 dB with only a slight sense of strain.

Dynamics are improved—not much, but enough to be obvious. The Acoustats still fail to completely capture the dynamic out-
bursts of live music, but the difference has been narrowed (though not as much as I would have liked).

In short, a great speaker has become greater, at a reasonable price. The actual improvement is far larger than the percentage cost of the upgrade. (The Sixes have gone from $3750 to $3950, but this increase occurred before the Medallion mod. In that context, the new transformers cost no more than the old.)

Recommendations are simple. If you think the older Acoustats struck just the right balance between musical detail and romantic sweetness, you may not like the Medallion upgrade; listen carefully at your dealer's showroom before committing yourself. On the other hand, if you were bothered by the paradox of an electrostatic system that sounded a bit rounded-off, you will be happy with the upgrade, and can safely send off your old transformers. Acoustat says the mod will not be offered forever, and I see no reason not to believe them. Be sure to call or write first for full information, and get a return authorization number. BS

ZEN
AND THE SCIENCE OF ELECTROSTATIC SPEAKER OPERATION

Almost every article about electrostatic speakers includes a diagram that purports to show how they work: the AC audio signal modulates the DC polarizing voltage, and this in turn makes the diaphragm move back and forth. Well, I've never been able to follow this, and I'm an electrical engineer! Surely there must be a clearer explanation. You won't have any trouble following the one I'm about to give.

There are many ways one may look at the universe. Your average physicist assumes that the external world represents some kind of consistent reality; otherwise, there wouldn't be much point in studying it. Because this reality (or apparent reality) is consistent, it becomes possible to model its behavior mathematically. Physics then becomes the process of discovering the mathematical rules which explain the workings of the material world.

Let's consider another way of looking at things. Suppose that the true reality is mathematics, and that the physical world is merely an embodiment of mathematical principles. In this view, there are no such things as action-reaction, forces, or even cause-and-effect. Rather, events occur because they must occur, in order to satisfy mathematical laws. (Before you write to protest, this idea explains some really weird results in experimental physics, where the behavior of one particle affects the behavior of another, on the other side of the room, instantaneously!)

Mathematics thus becomes the oneness that underlies everything. In Zen philosophy, all is part of one thing,
even though we cannot understand what that "thing" is. All motion, change, or rearrangement is an illusion. ("It is neither the flag nor the wind which waves, but the mind.")

Now that I've confused you, let's look at the mathematics of electrostatic speaker operation. Incredibly, it may be reduced to one simple equation:

\[ Q = CV \]

where \( C \) is capacitance, \( V \) the applied voltage, and \( Q \) the capacitor's charge.

The charge on a capacitor is calculated by multiplying the applied voltage by the capacitance. Charge simply means "number of electrons," and is measured in coulombs, where one coulomb is about \( 6.25 \times 10^{18} \) electrons. If we could yank that many electrons off one plate of a capacitor, and stick them on the other plate, the capacitor would hold a charge of one coulomb. The voltage across the capacitor would then vary inversely proportional to the capacitance; a 1 \( \mu \)F cap would have a million volts across it!

An electrostatic speaker is a big capacitor, whose capacitance is determined by the size of the plates and their spacing. The resistor shown in the schematic may be either an actual resistor, or it may represent the resistance of the conductive coating on the diaphragm. In either case, it would have a value of several hundred thousand ohms.

When the high DC polarizing voltage is turned on, this resistance prevents the speaker's capacitance from instantaneously charging up to the full applied voltage. The charging time depends on the resistance and the capacitance; the larger either is, the longer it takes. This time can be determined by multiplying the resistance and capacitance. The product, called the "time constant," is expressed in units of seconds, and it represents the time required for the capacitance to reach about 67% of the difference between "whatever voltage it now is," and the applied voltage. After a period equal to five time constants, the capacitor has reached about 99% of the applied voltage, and is considered fully charged.

For most electrostatic speakers, five time constants will be in the range of several seconds. This is obviously much longer than a single cycle of even the lowest frequencies to be reproduced (say, 20 Hz). Although the audio signal is varying the polarizing voltage, the time constant is so long that the signal can never stay in one place long enough to significantly vary the charge on the plates. Under such conditions, we are said to be operating in constant charge mode.

As far as our equation \( Q = CV \) goes, this means that the left-hand side (\( Q \)) is a constant; it cannot vary. But the physical relationship—that the charge is always equal to the applied voltage and the capacitance—must be preserved. The only way this can happen is for the capacitance to vary inversely as the applied voltage. (For example, if the voltage doubled, the capacitance would have to halve, to maintain equality.) And the only way for the capacitance to vary is for the diaphragm spacing to change. Therefore, the diaphragm must move back and forth to follow the applied signal. Q.E.D.

I submit this as an elegant explanation of electrostatic speaker operation. It takes a fundamental law of nature, and derives conclusions through simple reasoning. It applies a general understanding of the laws of nature, rather than introducing obscure new principles. I leave it up to the reader whether electrostatic operation provides evidence of the non-causal, unitary view of the universe.

Most Stereophile readers are aware by now of why the full-range electrostatic should, in theory, be the ideal transducer. (If you aren't aware, see the accompanying box.)

Acoustat was the first manufacturer to design a full range electrostatic that was so indestructible it came with a lifetime warranty. (Martin Logan is now offering a three-year warranty on theirs, and is considering going to a lifetime warranty). But Acoustat was never able to solve another problem that has plagued all flat-panel speakers: treble beaming.

Until recently, all push-pull electrostatic designs were flat panels, and when sound is produced from a flat panel, interference patterns cause the high frequencies to be radiated from the panel's center in a beam whose width becomes narrower with increasing frequency. Most designers of full-range electrostatics have attempted to circumvent this beaming through the use of several narrow, vertically oriented panels arranged in a gently convex curve but, while this seemed to increase the apparent HF dispersion of the system, it did so at the expense of imaging precision. The reason is that the more discrete radiating sources there are (horizontally), the more each source interferes with all the others. With only one panel per side (as in Acoustat's models 1 and 1+1), a flat-panel electrostatic can produce incredibly specific imaging for a listener positioned dead-center between the speakers (the so-called "sweet spot"), but the imaging deteriorates if you move to either side by more than a few inches. Adding additional panels to each side broadens the seating area from which one can hear acceptable imaging, but at the same time degrades the imaging heard from the sweet spot.

It has long been assumed that the electrostatic's beaming problem would be eliminated if the large diaphragm's width could be accomplished via a single, curved diaphragm, but this was generally dismissed as an impossible goal because, regardless of the shape of a flexible membrane's outer edges, any tension on it acts to flatten its center area. This brings us to the Martin Logan Monolith.

Rather than building their electrostatic as a series of panels, Martin Logan uses a diaphragm panel is "aimed" directly at a listener, putting him the same distance from the left and right sides of the panel, all of the radiated wavefronts will reach his ears simultaneously and in step with one another. But if he moves to the right of the panel's axis, sounds from the panel's right-hand side will reach his ears slightly before those from its left-hand side, and the resulting interference between them will cause partial cancellation of each signal. The effect is wavelength-related; it is most pronounced at the highest frequencies, and the subjective result is the well-known electrostatic "hot spot" — a tendency for the panel to radiate an on-axis "beam" of treble which becomes progressively narrower with increasing frequency.
THE FULL-RANGE ELECTROSTATIC: PROS & CONS

The main inherent advantage of the full-range electrostatic speaker system is that it allows a single diaphragm to embody the conflicting attributes needed for optimal performance at both extremes of the audio range. Its thin-membrane diaphragm can be made exceedingly light, for superb transient response and extended HF response, yet it can be about as large in area as desired, for extended LF response. And since that diaphragm is driven uniformly over its entire surface, instead of from a relatively small voice coil, it circumvents the inherent problem of dynamics in requiring that a large area be driven from a small area (the central voice coil). The electrostatic's diaphragm does not require the element of rigidity in order to move uniformly over its entire surface. And because the same diaphragm handles both bass and treble, the electrostatic does not need a crossover, with its inherent phasing and audible discontinuity problems.

These are the reasons why designers have persevered for over 40 years in refining the electrostatic, despite its unenviable history of woes ranging from gross inefficiency through "difficult" amplifier loading to daunting unreliability. (Unlike dynamic speakers, which will handle momentary overloads with aplomb, most electrostats will break down instantly the first time an overload hits them. The usual result—a small hole in the diaphragm—then becomes a point of vulnerability, which will from then on arc over at signal levels well below what the speaker could normally handle.)

The mechanism that is curved in the horizontal plane over its entire surface. The diaphragm is held in place at top and bottom to curved structural members, but it was necessary for ML to develop a special manufacturing process to keep it curved over the its entire vertical dimension. The result is the first beam-free electrostatic.

The Monolith is a two-way hybrid system which uses a large electrostatic radiator to span the range from 100 Hz upwards, crossing over to a 12-inch woofer below 100. The Monolith's woofer "isolation" from the power amplifier is minimized through the use of a huge crossover coil—about the size of those two-gallon plastic jugs of distilled water sold in supermarkets.

Martin Logan contends that the driver blending is "seamless" and that, although it is possible to biampify the system, this is not necessary. But even before I auditioned the Monoliths, I had doubts that their 12-inch woofer would be able to mesh properly with the much faster electrostatic upper range.

At the time of first testing these speakers, the two best amplifiers I had in the house were the solid-state Electron Kinetics Eagle 7A and a pair of the mono Paoli SOB tube units. I would judge both to be state-of-the-art designs, but each has its unique areas of almost unchallenged superiority. With the Eagle, that superiority is in its low-end range, where it possesses impact, detail, and control—in abundance. But it has never sounded very good through its higher frequency range with electrostatics. The SOB, on the other hand, has the sweetest, most delicately musical high end of any amplifier.

2 The Quad ESL-63 is inherently as beamy at high frequencies as any other flat-panel system, but it utilizes delay lines and annular rings of radiator diaphragm to simulate electrically the behavior of a curved diaphragm.
I have ever heard, and has proven to be the most nearly perfect complement to every electrostatic speaker I have tried it on. But, while it exercised better LF control than most tube amplifiers, it still has less control than the beefiest solid-state amps.

I started my tests using the Eagle because I was particularly curious to find out what the speaker’s woofers could do under the best of circumstances, since woofer “meshing” is the most common problem with hybrid speaker systems. For example, experimenters have been trying for years to come up with a cone subwoofer for the Quad 63 that can match its transient agility, and the Monolith's electrostatic section does not sound a whit slower than the ESL-63.

I found the Monolith's low-end extension to be remarkably good—subjectively flat down to almost 35 Hz in my listening room, with usable output to slightly below 50 Hz. Low-end detail, however, was not very good, though I am not at all sure that the problem results from a poor meshing between the woofer and the electrostatic. The problem seems to start at a frequency much higher than the system's crossover. The diminution of attack and detail sounded as if it set in at around 500 Hz.

In general, the Monolith's middle-range performance was quite a bit better than that of most audiophile speakers. It has none of that laid-back, unctuously over-rich coloration so admired by LS-5/5A lovers. The Monoliths reproduce cellos, lower brasses, and piano bass strings better than do most other perfectionist speakers and, perhaps because of this, they have more apparent dynamic range than the speakers I have grown resignedly accustomed to auditioning these days. They are far superior to the Acoustats in this regard, which is perhaps why so many observers have complained about the Acoustats' lack of authority during fortissimos. The Monoliths are also very efficient (for electrostatics), playing cleanly at near ear-shattering levels with amplifiers rated at (only!?) 100 watts/channel.

Relative midrange superiority notwithstanding, the Monoliths still exhibited, with the best amplifiers I had, some deficiency of “gutsiness,” compounded by a distinctly ill-defined low end. Bowed double basses lacked delineation (i.e., the feeling that one could count the cycles), and plucked bass strings and kick drum sounded soggy and shy of attack. With piano, a progression of notes descending into this region sounded as if the piano’s hammers had become less hard; some of the percussiveness just disappeared. Kettledrums had sharp attacks but undercontrolled and somewhat aimless decays, like harmonics in search of their fundamentals. And this, remember, was with the Eagle "A power amplifier, which has better LF detail and control than any amplifier I know of.

There were some other less-than-appealing things to be heard from this system with the Eagle. To begin with, the Monoliths had what I feel to be too much high end (above 10 kHz) content—far more, relative to the lower ranges, than one would ever hear from live music. They were also exceedingly bright-sounding, to the point of steely hardness. (By “bright” I refer to excessive apparent output in and about the 5-kHz range—the mid-treble range—not the range around and above 10 kHz, which many audiophiles incorrectly call the “brightness” range. Since I pioneered the use of this terminology in the first place, I can define its meanings without risk of contradiction—I should hope!)

And that was only half of the problem with the Eagle! On top of the hardness was an overlay of harsh grittiness. Since the Eagle sounds superb with a number of other speakers (all of them cone speakers, by the way), this only confirmed my contention that you cannot judge an amplifier except in terms of the speaker it is being used with. And vice versa.

So, I switched to the Paolis. These amplifiers effected improvements in some areas and regressions in others. Expectedly (in view of what I knew about the SOBs), the extreme high end became softer and more musical, but the middle high frequency content increased and the bass became a little less tight—not what the Monoliths needed. I still considered the sound to be totally unacceptable.
I also borrowed the BEL 2002 (favorably reviewed in Vol. 7, No. 6). This elicited smoother and more natural upper range sound from the Monoliths than did either of the previous two amplifiers but, oddly enough, had markedly less ability to control the 12-inch woofer than did the other two amps. The bass with the BEL was inordinately heavy and woolly. Clearly, none of these amplifiers was ideal for these speakers. (ML tells me they have gotten excellent results with Threshold and Krell power amps. I have arranged to re-borrow the $500 for further testing of the MLs.)

Next, I decided to try biamplifying the speakers.

Each Monolith has external strapping which makes biamping (and bypassing of the internal crossover components) relatively simple. I used an M&K 100-Hz passive crossover to feed the BEL for the high end and the Eagle at the bottom. There was some improvement in quality across the board, but not as much of an improvement through the lower midrange and upper bass as I had hoped for. The low end remained rather ill-defined and still had what I felt to be entirely too much high end, but biamping produced the best sound up to that point in my testing.

A phone conversation with ML’s Gayle Sanders revealed that I was not the first person to complain about the Monolith’s brightness. Indeed, ML was already making available a passive equalizer that could be connected to the electrostatic element (via the back-panel strapping) to tame the aggressive upper range. Gayle offered to send us a pair of them.

Each equalizer consists of an inductor, resistor and capacitor, all paralleled and connected in series with the signal line. The effect of this network is to depress the range above 4 kHz, with a flattening-out shelf above 8 kHz (to prevent progressive attenuation of the extreme upper range). I won’t say this transformed the speakers, but it sure put them in the right ballpark.

Extreme highs were still a little excessive, but the apparent brightness of the speakers now corresponded pretty well with the known attributes of the amplifiers used on the high end. (The Eagle, for example, is somewhat bright, which is one reason it makes so many speaker systems sound almost shockingly real and alive.) With the equalizer in, the high end from the Eagle/ML combination corresponded well to the qualities of the various program sources. The grittiness I had previously noted was entirely gone and, with the best available source material, the Eagle/Monolith high end sounded as palpably real as anything I have heard. HF detailing was so incredible that the sound would have been totally unlistenable had I been using a preamp with the slightest tendency towards harshness or grittiness. (I was using a tubed preamp known to have an unusually sweet, clean high end—the Conrad-Johnson PV-5). Yet, while this sound was tremendously exciting, it did not have quite the effortless ease that makes live music so easy to listen to. For that quality I must keep returning to the Watkins WE-1s.

By comparison, the BEL amplifier sounded sweeter and more “listenable,” but some of that reach-out-and-touch-someone aliveness had been lost. With the Paolis, the extreme high end was right on but the middle high-end brightness was once again excessive. (I like less high-end content than do most audiophiles, who frequently complain that live music is lacking in treble. I should also add that I feel that most loudspeakers have entirely too much HF output; I am not singling out the Monoliths for this criticism.)

One thing that remained consistently superb throughout the testing was the Monolith’s imaging. To hear electrostatic-type detail, smoothness, and attack, without the usual on-axis sizzle and off-axis dullness and imaging deterioration, was a rare privilege. What this means in terms of stereo imaging has to be experienced to be believed! The Monolith images almost as well as any system I have ever heard, and is even capable of the remarkable holographic

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5 Note that the “version” of the Watkins which I so much like with the Eagle is the original one. Current versions of the speaker may or may not be so ideal for use with that amplifier.
effects I have previously heard only from a
couple of satellite systems. (By “holographic” I refer to the impression that
closely miked sounds are located out in
front of the speakers, floating spookily in
space a few apparent feet in front of my
face.) The soundstage is wide and deep, and
front-to-back perspectives replicate those
of the recordings themselves about as well
as I have heard from any speaker system.

Interestingly, though, while the Monolith
has no high-end directivity, it does have
some in the middle range. To either side of
the speaker’s “axis” the sound loses some
of its body and impact, and if the speakers
are not toed in towards the center of the
listening area there is a significant shift in
lateral image position as one moves from
side to side. There are speakers which pro-
vide more uniform lateral localization from
a wider listening area, but all of these have
a “shaped” directivity pattern in which the
apparent output from each driver dimin-
ishes as you approach a location directly in
front of it. (The dbx “Soundfield” speaker
is a prime example of this directivity shap-
ing.) But, all in all, the imaging from the
Monoliths is as good as I have heard from
any other kind of speaker, particularly any
electrostatics.

That’s where things stood—lots of
potential, but not the overall satisfaction
you should get for this kind of money—
when Electron Kinetics’ John Iverson paid
me a visit, carrying a cute little new Eagle
amplifier under one arm. (Try to do that
with the 7As!) It was an Eagle 2, rated at 120
watts per channel and priced, at that time,
at $850. (It has since risen to $895.) We
tried it with the Monoliths (which were
back to being monoamped), and I was flab-
bergasted to hear this little amp dramatic-
cally outperform its big brother in every
way. The low end was much tighter and
suddenly had real concussive impact from
kick drum. The high end was sweeter, more
open, and more musically euphonic, and
the entire audio range had superior detail.
The sound of good recordings was astound-
ingly alive and—except for that lower mid-
dle range deficiency—was far better than
anything I had ever previously heard in my
own listening room! I was really bowled
over, and after several months of living with
this system, I still am. I won’t go far as to say
this is the best sound reproduction I have
heard anywhere, but in most respects it
comes close.

But what, then, is the “sound” of the ML
Monoliths? On the basis of what I know
about the sound of the amplifiers I used
with it, I’d say it is (with the ’equalizer’
noted above) extraordinarily detailed, a lit-
tle bright and forward (although not hard,
with the right power amp), somewhat up-
ship at the high end, and very extended but
still a shade woolly at the bottom.

ML’s assurances notwithstanding, this sys-
tem does benefit from full bi amplification
(using an external passive crossover). The
low end is tighter, deeper, and better con-
trolled, and the rest of the range is slightly
but definitely cleaner and detailed.

The speaker’s high end sound with the
BEL amp suggested that some amplifiers do
not need the equalizer. The Threshold or
Krell amps may turn out to be just the
ticket, but after having lived with the
Monolith/Eagle combination (with the
equalizers) for a while, I have decided that
that is, at least as of now, my preferred com-
bination. I like this combination better in
some respects (imaging, depth, deep-bass
range, extreme high end, and aliveness)
than the Eagle/Watkins pairing, but still find
the latter more convincing in its portrayal of
large brasses, cellos, and piano bass strings.

One thing which emerged clearly from
my tests is that the Monoliths are both un-
usually amplifier-sensitive and amplifier-
critical. These are not necessarily the same
thing. The speakers are amplifier-sensitive
in that their low-end control is drastically
affected by the power amp used. They seem
to need something with tremendous LF
current capability in order to sound respec-
tably disciplined at the low end. They are
amplifier-critical in that their incredible de-
tail and slight brightness make them ex-
ceedingly revealing of the merest traces of
distortion in the power amp and preamp.
There are probably so few power amps out
there which meet both criteria that I could
only recommend the speakers with some
strong qualifications or with specific amplifier recommendations. And I haven't tried enough amps yet to be able to recommend at this point any but the Eagle 2 or Martin-Logan's suggested Threshold Stasis units. (Although I would guess the big Krells or the new Rowland Research amps might do fine, too. We have a Rowland on hand, and I'll report in the next issue on how it goes with the Monoliths. The Krell amps are still with AHC on the East Coast, so I don't know when I'll be able to comment on their abilities with the MLs.)

In short, the M-L Monolith is yet another example of the truism that nothing is perfect. This system images so well, and has such hair-raising dynamic range, definition, and clarity (through most of its range) that its small imperfections seem less forgivable. It's rather like going to heaven and finding that it's everything you expected—except that it never stops raining!

Some of the Monolith's shortcomings could, I think, be easily eliminated by some more creative equalization. I would, for example, like ML's HF equalizer to do just a little more of what it does now. And I know some hyping of the 300-to-800-Hz range would enhance the speaker's ability to reproduce the large brasses, cellos and so on. If it doesn't measure flat then, who cares? After all, we keep telling ourselves, the "bottom line" in audio is how something sounds, not how it measures.

The low-end looseness with many amps may be harder to remedy. This is, as I said, only a minor problem with the Eagle 2, but was really bad with some other power amps. Some of this is, I believe, related to the subjective shortage of mid- and lower-midrange contribution, but that's clearly not the whole story on the Monolith's low end. I suspect it is also caused by the system's 6-dB/octave crossovers, which allow the woofer to operate well up into the lower midrange before dropping out of earshot. (ML is currently working on a powered woofer system with integral amplifier—see my editorial in Vol. 7, No. 5—that should effect a marked improvement in bass quality.)

There are so many things I love about the Monoliths that I hate to qualify my review of them. One could argue that the degree to which they do practically all of the right things is probably worth their $4850 price, but the fact remains that there are some areas where their performance will not be up to what most buyers would expect from speakers in this price class. There is just no point in trying to pretend that the Monoliths will be all things to all listeners.

The add-on equalizer, which I feel should be made available without additional charge to the buyer (or, better still, incorporated into the speakers' internal crossovers), is a step in the right direction. I hope there will be more such steps, and I shall watch further developments at ML with great interest.

JGH

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**THE APOGEE SCINTILLA SPEAKER SYSTEM**

This is probably the most challenging audio product I have attempted to review. At its best, it pushes the state of the art to new heights. In my listening room—with the right electronics, placement, and musical material—it can be the most musically natural speaker I have ever heard, at any price.

The Infinity IRS and WAMMs are clearly superior on some material, but these are audio Nirvana that cost more than ten times as much. For those of us audio cheapskates who have to keep our speaker budget to a piddling $3500 a pair (or $35,000, for JGH's new ten-channel sound), the Apogees can literally be the Scintilla (or should I say that the Scintillas can be the Apogee?)

The Infinity RS-1Bs and Quad ESL-63s are my favorite rivals in this category, but the Scintillas can provide a degree of total integration and cohesion over a wider range of frequencies and under a wider range of dynamic conditions than can the RS-1Bs. The Scintilla's timbre is acutely sensitive to room placement and drive electronics, but at its best it is more natural than anything I have yet been able to achieve with my Quad ESLs. The soundstage is also more natural in terms of imaging stability and depth.

The bass can also be astounding. I should caution you that I seem to have better luck in the bass with dipole speakers in my room than most audiophiles; nonetheless, the Scintillas are amazing. They're not very big, and the ribbon takes up a surface area only 12" by 53", but I can get a powerful 25 Hz note in my room at moderate listening levels using a third-octave warble tone generator. This in no sense implies a flat power response under dynamic conditions (all you physicists out there need not write), but it does mean that the note is clearly audible without doubling. And I can get extremely tight and deep bass with music—I can feel it. This is something I have never experienced in my home without the use of subwoofers.

But, don't think the Scintillas are the speaker that will make every audiophile's life a bed of roses. No speaker is more demanding of the right setup. The Scintillas are the ideal speaker for Indiana Jones: you don't just buy a speaker, you begin an adventure. You must be willing to acquire the right electronics to drive this speaker (at 1 ohm), you must be willing to get the right cables (which last month's issue should make you realize is work), you may have to screw endlessly with VTA—and on top of all that you'll need one hell of a lot of patience, and maybe a new listening room! Few speakers can sound worse in the face of determined ignorance. With the wrong electronics and positioning, the Scintillas can easily degenerate into producing an unnatural sound, ending up as little more than a high end curiosity.

They also are not going to be easy to audition adequately outside of your home. The speakers weighs 140 lbs each, and they require far more space and care than most dealers can afford to provide. Even in the best dealer showroom I know of—and I cheerfully admit to a horrendous bias and conflict of interest based on the fact that Bobby Taylor of Excalibur Audio is a close personal friend—the Scintillas are demonstrated at a level of performance that only roughly approximates how well they sound in my living room. Most dealers will either have to sell them on their looks (splendid!) or on the pure technology.

**THE TECHNOLOGY**

Let me pause for a few words about the technology. The Scintilla is a full range ribbon speaker. The tweeter and midrange are close enough together, tall enough, and thin enough to approximate a line source. The woofer is a ribbon woofer, not some modified form of the well known SeigHeilMagnetEMI driver pioneered in the 1830s.

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1. Sorry, Tony, you get two channels for $5500, so it's only $175 K! And besides, when did JGH recommend ten channels?  

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Stereophile
The Scintilla has no circuit equalization, and the crossover at 500 Hz and 6000 Hz is not equalized or gimmicked. There also is no transformer or plastic backing to the ribbon. In other words, you get a closer approximation of direct drive, but this demands one hell of a lot of precisely the right kind of power.

There is one adjustment on the speaker, which can make it vary from exceedingly difficult to drive to merely a somewhat unpleasant load. The owner’s manual describes how to alter a variety of straps on the input to the speaker so I won’t go into it here. Altering the straps determines whether the woofer ribbons are wired in series or in parallel, and this changes their impedance from 4 ohms to 1 ohms. Similarly, the midrange-tweeter sections are changed from series to parallel, resulting in an impedance of 3 ohms or 1 ohm. See below for my comments on the two different setups.

The Apogee is also a classic dipole. This means that it needs space to function. To put it differently, you need a room where you can keep the Scintillas 8 feet apart, and at least 2 feet from the rear wall and 3 feet from the side walls. You may have to experiment with something like the excellent new sound panels from Monster Cable to fill in archways and doorways, and you’ll want to minimize the furniture between you and the speaker (or even near the speaker).

THE LISTENING

This mix of technical characteristics adds up to sound that can be very hard to predict. I have already praised the best sound I got out of this speaker in virtually every meaningful way. I had the advantage, however, of Krell amps designed to deliver immense amounts of current into virtual short circuits. I also had the help of both the manufacturer and a dealer in setup, and the help of my wife and daughter in little movements of the speakers to get everything just right.

And each little movement it is. You need to experiment with tilt (use books or cardboard), you need to try different toe-ins (generally as close as possible to parallel with the rear wall while maintaining an image that "floats" naturally in space), you need to move the speakers back and forth by inches to get just the right midbass balance, and you then need to adjust your precise seating position to get the best possible soundstage.

The soundstage detail can also be a bit of shock for most cone-driver users. There is so much information! If I had not heard the same transient detail in other ribbons, the Stax ESLs, the Lambda Pros, and the Quad ESLs, I would almost certainly complain that the Apogees were exaggerating transients. Even so, I had to check. I made a tape of a triangle on my Beta Hi-Fi to check the Scintillas’ realism. I found that the taped transients from the triangle played back much more realistically on the Scintillas—sounded much more like the real thing—than on my Quad ESL-63s. I checked again by having someone play the triangle live in the same spot where the reproduced image was floated. I also got a slightly better square wave from the Scintillas (in my listening position) than with my Quads, square waves being an area where the Quads previously had no rival.

The truth of the matter is that Scintillas ruthlessly reveal multimiking, dubbing, tape hiss, transistor hardness, tube softness, and all the rest. On really good source material, they make up for this with a magnificent amount of detail and soundstage realism. But romantic the Scintillas are not; they are revealing. The Quad ESL-63s are definitely far more forgiving, and they can often tell you more about a recording than you really want to know.

The Scintillas do not really work their best on the 4-ohm setting with any ampli-
fier that I had the opportunity to try them with. They were okay with the Krells, but sounded more dynamic, liquid, and natural in timbre when they were wired for 1 ohm. At 4 ohms, they seem to parody the colorations you normally hear—and add new ones; this can be jarring.

Not only that, the wrong amplifier will give you something that varies from sonic mediocrity to misery. Take a few examples: My PS Audio Elite simply poopied out. My Audio Research D-250 lost all its bass and was slightly bright. My neighbor's Hafler went dull and "tunnelly." The NYAL Mosfet 600 became incredibly romantic, possessing bass power that shook the room and made my daughter (a bass guitarist) frabjous to the slithingtove. (I may not spell like Lewis Carroll, but then my daughter isn't named Alice.) The new Adcom 555 had to be modified to drive the 1-ohm setting on the Apogees to high volume levels. It never had quite the extraordinary ability to float an image on the +ohm setting that makes the 555 such a major sonic advance with other speakers.

Unfortunately, 1 ohm capable amplifiers don't grow on test benches. You tend to be restricted to the Adcom GFA-555, Krells, Belles, and Classes. Sending too little power into the Scintilla at 1 ohm makes them sound recessed in the midrange, muted, and lacking in deep bass. The result is all depth and midbass, and no presence. Other than the amps I found, I don't know what to tell you. Every amp will be an experiment. Don't go by the amp's ability to drive a 1-ohm resistor; the Scintilla is not a resistor.

If you use improper speaker cables, the soundstage and spectral balance change. I suggest using Tweek, really tight connections, and careful experimentation with Distech, the Straight Wire, Monster Cable Powerline II, and Randall Research. The M.I.T. cable did not work. You will really hear differences between all these cables: the whole upper five octaves shift slightly in balance, and the soundstage width and imaging alter. Straight Wire and Distech give you "speedy" highs and a forward sound; Powerline II gives you a midhall softness with somewhat more natural integration of the lows and midrange/treble.

You'll also find that the Scintillas improve with very short speaker leads, preferably in a biamped or biwired mode, and, again, only with amplifiers that deliver very high amounts of current into 1 ohm. The closer you come to fulfilling these conditions, the less sensitive the speaker is. The further you move away, the more unpredictable will be any particular combination of amplifier and cable.

So how do we judge the Scintilla—by the difficulty of the journey or the reward once we arrive? If you hate getting your 1982 Rolls maintained or sending your Picasso out to have its cubes rounded, this may not be your speaker.

As for me, I find the Scintillas to be sufficiently good to be worth the adventure I have just described, and I have never had so much support from my family in getting a difficult product to perform. They love what this speaker does in giving them music, and they are willing to put up with my experiments to see if they can get even better sound. My wife also regards the taupe-colored version of the Scintilla to be the best looking speaker she has ever seen. But, no one can ignore the effort required, the $3500 price tag, the difficulty in getting a good dealer demonstration, the room requirements, and the possible need for new amplifiers. The Scintillas really do push the state of the art!

AHC

JGII Addendum:
I don't quite know what to make of this rave report. The sound Tony describes here is not essentially dissimilar from the sound of the Duettas that I spent a little while with at the CES. And while Tony could listen to those Duettas for six hours, I think half an hour would have been pushing my limits! The sound was relentlessly detailed in a way you never hear in live music, though I hear that Apogee is now providing a switch to lower the treble about 2 dB above approx. 5 kHz—which might just do it.

Stereophile
WHARFEDALE DIAMOND SPEAKER SYSTEM


It wasn’t too many years ago that no audio perfectionist would even consider owning speakers having woofers of less than a 12-inch diameter. Everyone knew that it took a BIG speaker to reproduce real bass, and pointed at the size of a double bass and an organ bass pipe as proof that there was no way of circumventing that particular law of physics. Consumer audio products, which boasted 5-inch “woofers,” were derided by the knowledgeable as outright frauds. But in recent years loudspeaker design has been going through a slow but productive evolutionary process which has proven to even the most skeptical that, while you can’t break a law of physics, you can certainly bend it a lot.

Of course, as we are constrained to point out in every review of every little box, small speakers don’t produce any deep bass. A 40-Hz fundamental is still as far from the capability of a mini-speaker as it ever was, but what has changed is the quality of small-speaker bass above that limit. As speaker design has become more of a technology than a black art, manufacturers have
learned how to balance efficiency, low end range, and LF resonance against each other in order to come up with systems that sound as though they produce much deeper bass than they really do. Most of these design refinements have turned up in systems in the $300-$400/pair price range, which has long been what we considered the least you could pay for speakers and still get acceptable sound. The Wharfedale Diamonds almost forced us to reconsider that judgment.

Although we did request the loan of a pair of Diamonds for testing, my first glimpse of them and their ridiculously low price tag caused second thoughts. I don’t like to give bad reviews to products that are so inexpensive they can be assumed to be lousy, but these sure didn’t look very encouraging. Well, Sir... The sound of these silly-looking little things came as a shock. When auditioning, I usually respond first to overall balance, then to colorations (or freedom therefrom), then to range and smoothness, and finally to imaging and soundstage presentation. My initial response to the Diamonds was disbelief! They are among the best balanced speaker systems I have heard! And they do not do poorly enough in any other area to discourage me from saying that they are among the most listenable speakers I have heard in the under-$300 class.

There is, however, a lot of music filtered out by the Diamonds. Subjectively, they sound flat to around 70 Hz with usable output to around 60. You don’t hear much below that, yet even so there is a surprising amount of weight and body to the sound. Wharfedale recommends placing the Diamonds close to the rear wall of the listening room, but I found this to produce too much low end in my room. (Other rooms will, of course, behave differently.)

Like practically every tiny speaker system I have heard, they image superbly, producing (from minimally-miked recordings) a very wide and deep soundstage extending to slightly beyond the speakers, stable and specific imaging of instruments, a coherent left-to-right spread (with no center hole or bunching), and a somewhat exaggerated impression of front-to-back depth. Detail and clarity are quite good, but, in comparison with the best speakers, the Diamonds are noticeably veiled and a trifle grainy.

Unlike most audiophile systems, the Wharfedale Diamonds do not have a markedly laid-back (sucked-out) middle range. Instrumental timbres, including the lower brasses, are surprisingly well rendered, albeit with a somewhat thin tonality. In fact, the only real problem I noticed in these speakers was an increasing tendency toward some high-end sizzle when the system was turned up to levels above moderate. This problem colors vocal sibilants, brushed cymbals, and massed violins, and while it is not a serious problem in itself, it could well become one in the context of the kind of components that these inexpensive speakers are likely to be used with. Virtually every flaw that one finds in moderately priced amplifiers, preamps, and cartridges adds roughness and edginess to the high end, and this situation is not going to be helped one bit by these speakers. The Diamonds will play quite loudly (up to 90-some dB) without other evidence of strain, but when the volume goes up, the ol’ Fletcher-Munson effect comes into play and that slight high end problem becomes doubly audible.

If their only faults were ones of omission, I would have given these a minor rave review with a clear conscience, not because they are serious competition for an IRS (obviously), but because they do so well through the fairly modest range they are designed to encompass. That small but pronounced HF resonance, however, could be a liability which cannot easily be overlooked. If your hearing dies at 12 kHz, you won’t hear it at all. My hearing goes out beyond that point, enough so that I heard the problem but was not driven crazy by it. But if you’re one of those rare souls blessed (cursed?) with a 20-kHz upper limit, you probably won’t be very happy with the Diamonds. For the rest of our readers—who I suspect are in a large majority—the Diamonds are the most inexpensive speaker I’ve come across that can be recommended.

JGH
This is the second set of Morel 202s we've received for testing (the first was reported some time ago in Vol. 6, No. 6). The 202-IIs are better than the originals. Although very nicely balanced, top to bottom, the original 202s had a rich but very laid-back sound, which was pleasant to listen to but never really "came to life."

The latest version (still $395) is much more forward, having now what I would describe as an almost neutral perspective—neither close-up nor distant. And while I don't have the original ones for comparison, I get the impression that the high end on the latest ones is both more extended and a little smoother. (It was quite smooth originally, but a little soft.) The highs from the 202-IIs are, in fact, very nicely articulated—open and natural, with no tendency to exaggerate sibilance.

The 202-IIs still have, however, a tendency for their upper middle range to vary dramatically in output according to listening height. I cannot understand this, as there is nothing that visibly different on the 202-IIs from any number of similarly dimensioned systems that don't have the problem. The sound from the 202-II is most natural with the listener's ears at about 20 degrees above the axis of the speaker. This idiosyncrasy can be a positive attribute, as it affords some control over the speaker's sound. (You can adjust it by varying its height or its tilt.)

At its best, midrange accuracy on these is very good, including the reproduction of lower-midrange instruments. The low end does not go any deeper than on the 202s, which had an effective cutoff of around 50 Hz, but the bass quality is truly astonishing: very taut and controlled, with remarkable detail and not a trace of audible hangover.

Definition is good, soundstage breadth is excellent, imaging is not quite so excellent, and depth and perspective are both very good. All in all, these are eminently listenable, and surprisingly accurate and revealing, little speakers, but they have some very tough competition from, for example, the remarkable Spectrum 208As, which list for $100 less, as well as from the Phase Tech PC-60s (at $400), the Sieferts, and a few others. The Morel 202-IIs are well worth an audition, though.

JGH
SPENDOR SP-1 SPEAKER SYSTEM


Since its inception in 1968, and under the guidance of Spencer and Dorothy Hughes (Spen-Dor: Get it?), Spendor has gained an enviable reputation for producing high-quality loudspeakers. The classic BC-1, still in production, is used extensively as a studio monitor in Europe, and thousands have been sold worldwide to music lovers who appreciate its marvelous blend of smoothness and neutrality. Through the '70s, the UK audio press almost unanimously praised the BC-1 as a reference-quality loudspeaker, especially for the reproduction of human voice. It has also garnered its share of accolades on this side of the Atlantic; both AHC and JGH, for example, remember it fondly.

Spendor's rise to fame was no accident, but rather the result of Spencer's extensive
research into loudspeakers at the BBC, together with lots of hard work and dedication to detail. The SP-1 represents his last project at Spendor, completed shortly before his death.

The BC-1’s major weaknesses were a fat, underdamped midbass with a broad peak in the 100-Hz region, and limited capability for reproduction of realistic playback levels. In the SP-1, a polypropylene woofer/midrange with a larger voice coil replaces the original eight-inch Bextrene driver of the BC-1. The other drivers remain unchanged, as do the 3.0- and 13-kHz crossovers. The new driver improves the bass definition by lowering the system’s Q, and increases its power handling and sensitivity.

Stand mounting of the SP-1 is mandatory, and placement should be at a minimum of three feet from any wall. I found the RCS-14 stands to be an ideal match in terms of height, tiltback angle, and coupling rigidity, although now the slightly different RCS-12 stands are sold with the SP-1s. The new driver improves the bass definition by lowering the system’s Q, and increases its power handling and sensitivity.

Stand mounting of the SP-1 is mandatory, and placement should be at a minimum of three feet from any wall. I found the RCS-14 stands to be an ideal match in terms of height, tiltback angle, and coupling rigidity. I lived with a pair of SP-1s over a period of several months, listening with half a dozen amplifiers and several preamps and phono units. All of them produced good sound from the speakers, but the amp that sounded best was the Spectrascan PBA-100B, which produced depth and bass definition that was simply superb!

There is much to like about the sound of the SP-1s, but smoothness, neutrality, clarity, and cohesiveness are their strongest suits. They have one of the smoothest room frequency-response plots above 200 Hz I have ever seen, and they sound precisely that way, with remarkably low coloration at low-to-moderate drive levels. The sound is well balanced and integrated from top to bottom. Their reproduction of musical timbres is almost beyond reproach, with only an occasional trace of boxiness in the lower middle range. Midrange clarity and image focus are outstanding, and the warmth region (100 to 300 Hz) is refreshingly transparent, without the blur and mud that usually accompany a crossover in this region. It is the combination of these attributes that is special. The SP-1 is capable of what only a handful of speakers can do: they effectively involve one in the listening experience by creating the illusion of live music.

On the debit side, there are weaknesses at the frequency extremes. There is no really deep bass, and the midbass still tends to run a bit on the loose side, benefiting from lots of amplifier damping. The extreme treble sounds slightly soft and rolled-off, much like a back seat at a concert hall.

Then there is the matter of output capability. With a medium sensitivity rating and a maximum SPL capability of around 103 dB, these will be in trouble in larger listening rooms. When pushed to SPLs in the high 90s (at one meter distance), they begin to sound strained as distortion by-products become obtrusive—but that’s precisely how loud they will be asked to play in large rooms in order to achieve adequate levels at the listening position. In medium to small rooms (15’ by 20’, or less) they should do fine. The SP-1s are capable of handling the dynamic impact of Compact Discs, provided a common-sense playback level is not exceeded.

Everything considered, I feel the the SP-1 is the best loudspeaker available for under $1500/pair. There are others costing less that will produce higher output along with more and deeper bass, and some have a more open high end, but when it comes to replicating the illusion of a real musical performance, these are matched by few speakers, all of which cost more. At $850/pair they are a steal! They are very revealing, and deserve a top-notch phono front end and good electronics (preferably a solid-state power amp). Highly recommended.
QLN MODEL ONE
QLN SUBWOOFER
(NEW MODEL)


This review will be short and to the point: the QIn One is an exceptional product that can hold its own with considerably more expensive speakers. It is not only a good value, but is the first speaker under $1000/pair that I can recommend without serious reservations.

Its appearance is little different from any number of other mini-monitors that made their way to the market after the (in my opinion unwarranted) success of the Rogers LS3/5a. The cabinet is a truncated pyramid, with the front baffle tilted back to time-align the drivers. Its edges are strongly beveled, which, along with the cabinet’s taper, reduces diffraction effects, as well as raising the frequency (and spreading over a wider range) of those diffraction effects that remain.

The cabinet material is unusual: a multi-layer sandwich designed to have an unusually low Q (that is, it readily dissipates energy rather than continuing to vibrate). Qln calls it "Q board." (The designer had originally wanted a name that would honor Bertil Alving, the famous Swedish recording engineer, but it was felt that "Q-bert" was not really appropriate.) The speaker’s structure and materials are proprietary, and a patent has been applied for.

It has become increasingly apparent that an acoustically dead cabinet is important, not only for the suppression of internal resonances, but to diminish any tendency of the cabinet’s surface to radiate energy. In the case of the QIn, a sharp rap of the knuckles at the bottom of the cabinet produces only a muffled click, though one at the top sounds a bit more hollow.

As for the sound of the speaker, there is little to criticize (and I don’t mean "for a $550 speaker"). The importer’s suggestion that the QIn be compared with the best dynamic speakers, without regard to price, is largely justified.

Hans Betzholtz, one of the owners of HiFi Club, suggested that after hearing the QIns, I’d want to trade in my Acoustat Sixes. Well, not really, but the QIns stood direct comparison with the Sixes and came away almost unscathed.

It’s easiest to describe the sound of the QIns in terms of the naughty things they don’t do. There are no apparent vowel colorations. The midrange is open, and free from any chesty, box-like, or “hooded” character. (This is true not just for instrumental sound, but also for voice, applause, and pink noise.) There is no particular emphasis or loss of any part of the spectrum, except for some lack of warmth with lower register instruments, such as piano or cello. This is about as un-
colored a speaker as I have ever heard.

The overall sound is lively, rather than bland or sweet. Unlike the LS 3/5a, the Qln does not prettify everything that passes through it. More of the sound’s character—as well as the mistracking or mastering nasties—comes through. Perspective is neutral, neither distant nor forward.

The soundstage is wide (sometimes appearing to extend beyond the speakers, especially when you close your eyes), and there is a plausible sense of depth. Imaging is good, although not quite so razor-sharp as I have heard from one or two other speakers. Imaging stability, on the other hand, verges on the spectacular. Sitting as far back as the Qlns were spaced apart, it was possible to move several feet to either side with hardly any image shift! This covers a fairly large sofa, and maybe even a bit more, so the Ones essentially match the performance of the dbx Soundfield Imaging speaker in this respect, and at only one quarter the price.

The bass is pretty much what one would expect from a speaker with a -3 dB point of about 60 Hz. What bass there is is clean and tight, but with little impact; a tympanum sounds like mostly membrane, with little of the air in the kettle. I was told that the woofer is overdamped to produce a slow, gradual rolloff (a design approach I agree with), and it is this that accounts for the tight, somewhat sparse, bass.

The manufacturer points out that many rooms will have resonances in the 40 to 50 Hz region, which should complement the One’s rolloff nicely; this did not occur in my listening room, making the subwoofer look like a worthwhile addition.

The subwoofer (which is for use only with the One), is a bit disappointing. It does what any good woofer should do, extending the bass about an octave, cleanly and with increased transparency. And with it most of the warmth lacking in the Ones is restored. There is no audible discontinuity between the woofer and the rest of the system.

So why am I disappointed? Well, it only goes down to a little below 40 Hz; I expect a subwoofer to hit the 20 Hz region. Actually, it did reproduce 20 Hz, with much flailing of cone, but this seemed to be a room resonance. In the 20 to 40 Hz range, there was much less output, with frequencies in the 30 to 35 Hz region exciting a kind of papery sound from the port. The Acoustat Sixes show about the same response down to 30 Hz, but without the extraneous sound or the peak at 20 Hz. Subjectively, the Sixes extend further into the bass, and with more impact.

The lack of the lowest octave is plainly audible at the opening of the Telarc Firebird, where it is needed to set the atmosphere intended by Stravinsky. In short, consider the Qln subwoofer to be a high quality woofer; and judge its contribution to the system, and relative cost, accordingly.

Compared to my Acoustats (with the old transformers), the Qlns are slightly less transparent, less detailed, and present a somewhat smaller and more cramped image. In comparison, the Qlns present a tighter listening window. They are more forward and immediate-sounding than the Acoustats, but rather less realistically alive (although better in this regard than most other moderately priced speakers), and a touch less open in the midrange. There is slightly less detail and airiness at the highest frequencies.

The significant difference (at least for the critical listener) is that the Acoustats reveal more of the subtle character of individual sounds. This allows the Acoustats to be somewhat less mechanical- or artificial-sounding. The difference, however, is not great. It is plainly audible, but one can switch from the Acoustats to the Qlns without getting upset.

In short, the Qln One is one of those rare speakers that does almost everything quite well, and at a very reasonable price. I don’t know if it’s the best speaker under $1000, but I don’t have to hear all the others to know that it must be one of the best.

— LA

2 Although I agree with BS’s feeling of dissatisfaction with a subwoofer that goes to only 40 Hz, it is hardly fair to criticize a $1400 combination for failings at the frequency extremes not found in a $6000 system!
Even if you're limited to $300 or $400 for speakers, you ought to consider auditioning the Qin Ones; you may find them worth the extra money. Moreover, they are speakers that you are not likely to outgrow after just a few months (or maybe even a few years). Should you later trade up to something better, you are far more likely to keep the Qin Ones as extension or ambience speakers, rather than trading or selling them at a loss.

The Qin Ones with the subwoofers, at $1360/pair, are a more iffy proposition. They have to compete with the Acoustat 1+1s, which at $1495 can include a subwoofer. The Acoustats should have the better midrange, although the addition of the crossover network for the woofer seems to degrade its focus and cleanliness. In principle, the Acoustats should show a disparity between the bass and the rest of the range, since one is trying to mate a dynamic woofer to an electrostatic midrange; the Qin system does not have this problem.

Additionally, the Acoustats are a nastier load, and may not work well with amps that would be fine with the Qin system. This, along with one's feelings about dynamics versus electrostatics, or space considerations, may play more of a role in the decision than any differences in sound quality.

The Qin Ones are highly recommended. By themselves, I would put them at the top of group C; with the (sub) woofers, somewhere between B and C.

3 If I turn off my Acoustat power amp while music is playing, the sound simply dies away slowly with the Qin Ones. But the same action elicits burps and thumps from the amp! Have I discovered a new speaker/amp interaction test?

DAYTON WRIGHT XAM-4 LOUDSPEAKERS

Although Dayton Wright is best known for large and expensive electrostatic loudspeaker systems, they have recently been earning respect for their small dynamic cone LCM-1 (see AHC’s review in Vol. 7, No. 2). Along with the Spica TC-50s, the LCMs have been changing the popular conception of how a small speaker can and should sound. The XAM-4s can best be described as a big brother to the LCM-1s, employing as they do many of the same design and construction techniques. They are similar in appearance to the LCM-1s (though much taller), and like the LCMs they are entirely covered with black cloth on the front, top and sides.

By all that is held sacred among audiophiles, the XAMs shouldn’t work. Four-way systems are not in vogue, three crossovers being considered too many to allow proper integration of the sound. The grill cloths are nonremovable, and the “rear facing, wide range, off-axis, room-ambience-exciting driver,” which may be separately powered and equalized, will bring cries of anguish and proclamations that “It can’t possibly work” from purists. But somehow—and somewhat to my surprise—it does.

Hooking up the XAMs is a major undertaking; it can best be described as an exercise in line transmission theory in the domestic environment. The first problem is that the XAMs offer the user several choices of how to connect the speakers to the amp. There are separate sets of binding posts for the bass unit and rear-firing ambience drivers, as well as a pair of posts for the main part of the speaker (the midrange driver and two tweeters). The ambience driver may be paralleled with the main unit, inverted and paralleled with the main unit of the other speaker, or hooked up in series in a difference-signal method. The latter alternative is accomplished by connecting the hot post (or non-inverted input) of each ambience driver to the hot post of the main unit of the speaker and then connecting the ground (or inverted input) posts for the ambience drivers to each other. This approach seems to work best, providing a nice, natural sense of air and ambience.

The bass woofer may be connected in parallel with the main unit or connected to the output terminals of the Dayton Wright ICBM subwoofers (see review in Vol. 8, No. 1). Either the bass or the ambience drivers may be run from separate amplifiers, though this is not required; or they can be left unconnected. The ambience drivers also may be used in connection with time delay units or equalizers, such as those offered by Fosgate. I did not try the XAMs with a time delay, and the use of such devices is recommended by the manufacturer only when the speakers are positioned close to the rear wall.

The ambience drivers are 6.5” cones identical to the midrange drivers, and are mounted on top of the speaker facing up and to the rear at approximately a 20° angle from the horizontal. The theory is that they will bounce the sound wave off the ceiling and back wall, delaying the arrival of the reflected ambient sound at the listener by a sufficient amount of time to avoid Haas-effect blurring. Except with a balanced output amplifier, the manufacturer recommends that a 10-ohm, 25-watt resistor be placed in the signal path of the ambience units to lower their level by about 6 dB. A 3 to 6 dB reduction will occur naturally when using a balanced output amp and a sum-of-the-difference connection (assuming a stereo input signal). Thus, a 5-watt resistor is recommended with balanced output amps. Appropriate resistors are included with the speakers.1

1 The difference-signal hookup causes each ambience driver’s output to be the difference between the two main channels. The left ambience driver is in phase relative to the left speaker and inverted with respect to the right channel, and vice-versa for the right ambient speaker. I found the manufacturer’s recommended resistor settings to provide too much ambience in my listening room, both with conventional and balanced output amps. When too much ambience is present the individual instruments become too large and overlap in space on orchestral works and other recordings with closely spaced instruments. The problem is compounded because there is no one setting that is best for all recordings. Recordings which are rich or lush need proportionately less ambience. I solved the
The 10" bass drivers are extra long-throw, heavy-magnet (50 oz.), proprietary cones, and are mounted at the top of an isolated 29-liter gas-damped compartment approximately 2 1/2 ft. high, which eliminates the need for a separate speaker stand. Spiked feet which screw on to the bottom of the speaker are enclosed. These seem to make a slight improvement in the sound, principally in the areas of image stability and bass tightness, and I recommend their use on carpeted floors. For use on hardwood or tile floors, plastic-bottomed glides are provided.

Having finished the obligatory description of the technical aspects of these somewhat unusual speakers, I can turn to the more important question of how they sound. The answer is, "Great." I don't want to be overly emotional, but I cannot hide the fact that I've become quite enamored of the XAMs. They are exceptionally well-balanced and integrated, and are free from any serious shortcomings. No area of the frequency spectrum is noticeably exaggerated or recessed, and the image and soundstage are outstanding. On good recordings the image extends well beyond the outer edges of the speakers and goes very deep. The soundstage has natural, lifesize proportions. The sound itself is very open and seems to bear no relation to the two black obelisks sitting on the floor of the listening room.

When properly adjusted, the ambience drivers add a fullness to the sound without making it heavy or slow. They also give an added sense of body and presence to the performers. The result is that, on better recordings, one has the sensation of being in the recording hall or sound studio with the performers, rather than listening to a recreation of the recording location in one's listening room.

Speed and fine detail resolution (the ability to hear such things as fingering on woodwinds and the principal cellist turning pages of sheet music) are fair to good for dynamic cones, though not a match for good electrostatics. The ability to resolve harmonic detail and render tonal colors is first rate. The same is true of the reproduction of dynamic contrasts. Transient dynamics (the ability to change level from soft to loud very quickly) are excellent in the bass and somewhat better than average in the midrange.

The treble is well extended, natural, and free from harshness or glare. Boy sopranos, who give most speakers trouble, are handled well by the XAMs. The treble is very clean and and there is a purity of tone from piano that I've heard from very few speakers. Upper harmonics of brass also are rendered very well. I suspect this upper harmonic purity contributes a great deal to the quality of the image. It also makes balance adjustment and cartridge alignment critical. I found myself using the balance control every time I changed records, and adjustment frequently was required between different cuts on the same record. Any imperfections in cartridge setup, particularly anti-skating adjustment, are patently obvious. If the anti-skating is off, even small amounts of mistracking will cause a buzzing in one channel. As with many speakers having good HF performance, the listening window is small, and treble response drops sharply as one moves off axis.

The bass is the best I've heard in a speaker costing under $1500. The manufacturer claims a -3 dB point of 21 Hz, and this

problem by placing a high quality, 50-watt potentiometer (0-25 ohms) between the negative posts of the two ambience drivers. This also simplified changeovers between conventional and balanced output amps during testing.

2 I had the opportunity to audition these speakers at Mike Wright's excellent listening room in Richmond Hill, and they did something I've heard no other speaker do. Sitting quite close to the plane of the speakers (about four feet away), the XAM-45s, which were about twelve feet apart, projected an image both outside the outer edge of the speaker (by about 15"), and in front of the speaker. I was blown away. Though I didn't have time for an overall evaluation of their performance, I heard nothing to temper SWW's enthusiasm. LA

3 To correct mistracking: increase the anti-skating force if the buzz occurs in the right channel, decrease it if the buzz occurs in the left speaker.
seems about right. In my listening room I measured them 1 dB down at 32 Hz. There was no midbass bloat, and they stayed tight and quick all the way down. As I mentioned above, the XAM-1s can be used with the Dayton Wright ICBM-1 subwoofers. The main improvement is not the slight bass extension they provide; more noticeable benefits are an increase in power handling capability and bass impact. The improved power handling results in better transient dynamics throughout the frequency spectrum.

After hearing the ICBMs with the XAMs I believe that my previous review of these subwoofers did not do them justice (Vol. 8, No. 2). Using the ICBMs with the LCM-1 satellites, I simply couldn’t tell just how low or loud they can go. When used with the XAMs, these mothers can crank. “Awesome” is the only word that seems appropriate, which is unfortunate since that term is over-used of late. During a good session, the ICBMs would knock the pictures on my walls askew and start the chandelier swinging. The capabilities of the XAM/ICBM combination in the bottom end are so outstanding that I have no hesitation in recommending the extra expenditure for the subwoofers despite the very limited increase in bass extension they provide. I have heard nothing short of the WAMMs or the Infinity IRS that can better the XAM/ICBM combination in the bass.

The conclusion is easy: the XAMs are highly recommended. They are among the most listenable speakers I’ve heard and are free from fatigue-inducing side effects. They are by no means perfect or even outstanding in all respects, but they have a great many virtues and only minor serious shortcomings. They sound like good $2000-2500 speakers.

There is one caveat. It does not relate to sound quality, but to what one must go through to make these speakers work. In a sense the XAMs are a true audiophile’s speaker, because setup is critical and, quite frankly, difficult. My infatuation with the XAMs was not a case of love at first listen. It took me about a week of trial and error (including lots of hard work) to make them sound right. If LA had not reported to me how good these speakers sounded when he heard them at the manufacturer’s plant, I am not certain that I would have made the effort necessary to get them to sound their best. The distance of each speaker from the listening position, the angle of toe-in, tweeter level adjustment, and ambience level all must be precisely “on” or the wonderful illusion of reality which these speakers are capable of creating is lost. For a true audiophile the reward is worth the hard work. Of all the products I’ve reviewed in the past year and a half, none have given me as much pleasure as these speakers. I have found myself listening to music a lot more since they arrived; I’m rediscovering much of my record collection. And the more I listen to these speakers the better I like them. SWW

4 The only room situation that might be insurmountable is one too small to allow the speakers be placed at least three feet from the side walls. Closer than three feet the XAMs won’t sound bad, but their full potential will not be realized.
NELSON-REED SATELITE/SUBWOOFER SPEAKER SYSTEM


Ever since we “discovered” Bill Reed’s original 6-02 speaker system¹ a couple of years ago, we have been hoping they would produce a matching subwoofer to flesh out the 6-02’s only real area of weakness. Now, in partnership with Ron Nelson (the company is known as Nelson-Reed), Bill Reed has brought out not just a subwoofer, but also a new subcompact satellite speaker to go with it.

My first listen was to the 502 satellites alone. Lacking instructions to the contrary (or, indeed, all instructions), I placed the 502s on 30-inch stands, about 45 degrees to each side of my listening axis, and toed-in to converge on the listening seat. (Because the 502s are slightly beamy through their upper middle and HF range, the toe-in was necessary to reduce a tendency for the stereo image to bunch up around the closer speaker when one moved to either side of the listening center.)

I was reasonably impressed. Like all such diminutive speakers, the N-R 502s image well but, oddly, not as well as I expected them to. Depth and space were very well reproduced, but imaging specificity was only moderately good, even in the center listening position. Also, no matter how the speakers were aimed vertical-venetian-blind effect was quite noticeable when I moved across the listening area. As a result, satisfactory imaging was consistently obtained only from a dead-center “sweet spot.”

The middle range on these satellites is unusually good for any speaker system. It is up-front without being squawky, and quite surprisingly alive-sounding. (They reproduce Amanda McBroom recordings with exactly the same perspectives and balances as I am told they are supposed to have, and instrumental timbres are unusually realistic.)

Bass was surprisingly deep, considering the speakers’ size, although just a shade on the sparse side. (With a “woofer” this size, every designer must adopt a compromise between low-end fullness with a sharp cutoff below the system resonance, and a lean-sounding low end which diminishes slowly throughout the whole lower range but exhibits a more gradual cutoff below system resonance. N-R appears to have found a good balance between the two.) The 502s by themselves produce what sounds like fairly linear bass down to around 60 Hz, with usable energy to a little

¹ The 6-02 was introduced as a kit, for the princely sum of $250. The price was later raised to $275, or assembled for $350. Both versions are available from A&S Speakers, 2371 Dahlia St., Denver, CO 80207.
down from go proached limit. But Nelson-Reed sells a subwoofer to go with the 502s.

My recollection of the 6-02's sound (from 2½ years ago) is vague enough that I could not compare it with these much more expensive 502s, but I do recall that the 6-02s had a warmer, more forgiving and less transparent quality. By today's standards, the 502s have very good detail and clarity, with little hint of dryness or veiling, but they also have a very slight "hissy" quality that colors all vocal sibilants and cymbal sounds, and adds a subtly steely edge to massed violins. Extreme highs sounded a little soft but eminently musical, particularly from the best CD sources.

Without their subwoofers, then, I would judge these to be acceptable speakers for a listener who doesn't demand too much, but at a price which gives them some formidable competition from similarly ticketed systems like the Fourier 6, the revised Phase Tech PC-60, the Rauna Tyr, and their ilk.

The term "passive" in connection with the TW-1202 subwoofer refers to its built-in crossover network, which provides 6-dB/octave rolloffs. Its eight input terminals can also be restrapped for bi-amplified operation (external crossover) or to increase subwoofer output by 6 dB. There are no "vernier" level adjusts, so the balance between N-R's 502 satellites and the woofers must be trimmed by adjusting woofer placement in the listening room.

A factory-installed option allows the TW-1202's internal crossover to be used for what N-R calls biamping, though it really isn't. With this arrangement, both the HF and LF amps are operated full range. Since the usual crossovers are still used to separate the LF and HF signals ahead of the speakers, there is still a crossover inductor in series with the woofer and thus no improvement in the tightness of amplifier-speaker coupling (over conventional speaker-crossover operation). Some extra available power would be gained, but otherwise this fudged lash-up would offer nothing of value. My feeling is: either biamp, or don't, but don't and then pretend you did.  

I didn't fuss with the alternate configurations, nor did I try other satellites with the N-R subwoofers. 3 Used with the 502s, and with the woofers placed immediately next to them (well away from walls), perfect woofer/satellite balance was obtained immediately without further fiddling. This was probably a coincidence, because different rooms vary more in their low-frequency characteristics than in any other parameter, but it is evidence that these drivers have been carefully matched to the 502 satellites, which means that proper balance should be obtainable in most rooms with a minimum of woofer-shuttling.

To say that the addition of the subwoofers transformed the 502 satellites is an understatement. To begin with, the woofers mesh so seamlessly that what one hears is for all intents and purposes a pair of big speakers. Both the range and the quality of the low end were remarkable! The system was subjectively flat down to a shade below 40 Hz, and was still pumping appreciable pressure into the room at 32 Hz! Could this, I wondered, be a fluke of placement? I tried moving the woofers to various other spots within a three-foot radius of the satellites and, while the amplitudes of room-induced LF peaks and dips changed, there was no significant loss of deep bass energy.

Impact bass—as from bass drum, kick drum, and tap dancers (from RealTime's Flamenco Fever and the old RCA Dick Schory's Music for Bang, etc.)—was tight, deep and solid, and had the concussive im-

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2 For an alternative point of view, see LG's review of the Snell Type IIIIs in Volume 7, Number 6.

3 Update: after this was written, I tried the subwoofers with the little Diamond speakers ($195/pair) from Wharfedale. With those speakers the N-R subwoofers did even a little better than with the 502s. Perhaps we can conclude that they're good with a number of mini-monitors—or at least worth a try.

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pact that one feels as a kick to the abdomen. The bass from Sheffield's Amanda McBroom discs, which is a little heavy and often loose, sounded almost as tightly controlled as I have heard it, with a throb to the lower notes that could be felt as much as heard.

The surprise for me, though, was what happened to the satellites' high end when used with the woofers. For reasons which I won't even try to explain, the very slight edginess I had detected before seemed to be gone. Obviously, this change relates to the change in spectral balance, but beyond that I cannot explain it. A HF peak should not disappear, regardless of what happens at the low end.

A note about driving amplifiers. Because the TW-1202s are internally equalized to offset the 12-inch woofer's dwindling efficiency at low frequencies, the subwoofers do best with a fairly high powered amplifier with high current capability and low source impedance (high damping factor). Although the sound is more alive (startlingly so, in fact) with a good tubed amplifier, tube amps priced within a reasonable range for use with $900/pair speakers just can't control the low end of these subwoofers properly. But biamplifying, with tubes on top and solid-state at the low end, might just be the ideal way to go with these speakers, as with many other that are biampable.

In other words, this $900 system is a real challenge to others of comparable price. It handles reasonably high listening levels well, gaining only a small amount of increased hardness at increasing levels above 90 dB.

My curiosity as to how these woofers might benefit some of the other small speakers we have tested recently had to go unanswered, as all the good ones had been shipped back to the manufacturers. However, I can report that the TW-1202s in combination with N-R's 502 satellites make for a very respectable system with very few performance shortcomings. I do not feel they yield any quarter to the Thiel CS-3s or the Pentagram P-10s, both of which cost about twice as much. Bear in mind, though, that there is an intrinsic advantage in using separate woofers and upper-range speakers: you can place each for optimum performance in troublesome listening rooms.

Summing up, then: I like the Nelson-Reed 502's by themselves, but I very much like the whole system. If I couldn't afford something like the Watkins WE-1 speakers (and the Electron Kinetics Eagle 7A to drive them), I would think seriously about the N-Rs. I might even choose them. JGH

SIEFERT RESEARCH MAXIM III SPEAKER SYSTEM

While it is obviously not quite accurate to state that $500/pair loudspeakers are a dime a dozen, they are by no means unusual. And since this is a price area where major design compromises are mandatory, the sound of such loudspeakers tends to vary all over the map, from pretty good to god-awful—depending on what performance areas the designer chose to compromise and by how much.

I approached this latest half-grander with little enthusiasm, despite SF’s persuasive literature. I have, after all, been reading such self-congratulatory hype about new products for longer than most Stereophile readers have been counting birthdays. This, I must admit, was ho-humsville.

But several things in Siefert’s promo caught my attention. This tiny little box with the two round bass-reflex ports was claimed to have a system resonance of 36 Hz, which is, of course, absurd for a system this size. How much of that energy could possibly be radiated into the listening room? Phooey! The reference to the “special relationship 4:5:6 which minimizes internal nodal reflections” meant nothing to me until I recalled that these are the dimensional ratios for an ideal listening room, no dimension of which is a multiple of any other dimension. And the speakers are rated as being safe for use with amplifiers of up to 250 watts power capability, which is truly impressive (although far more loudspeakers are damaged by 25-watt amplifiers than by 250-watters; amplifier clipping can feed much more energy to a tweeter than will a clean 250-watt signal). Still, I still didn’t expect much. After all, these are tiny boxes, and the system costs little more than one-tenth the price of most of the speakers I have really liked. Boy, was I wrong!

The sound of the Maxims came as a complete surprise! The system is beautifully balanced and almost perfectly neutral, being only very slightly on the warmish side, which is much easier to take than the steeliness of most similarly priced speakers.

The Maxims reproduce massed violin sound superbly—with not a trace of steeliness, yet with all the resinous sheen of the real thing. At ‘polite’ levels, they sound a little dull at the extreme top: at natural levels, the extreme high end is about as perfectly in balance as that of any speaker I know of.

Siefert’s literature describes the Maxims as being ‘digital ready,” which has become one of the most hackneyed phrases in contemporary audio. What they mean, of course, is that the speaker’s power capability will allow it to cope with digital’s potential dynamic range capabilities. But there’s another respect in which these are “digital ready.” They are among the only loudspeakers I have heard that make good Compact Disc sources sound musically flat at the top rather than tipped-up. Despite a very slight (and to me relatively inoffensive) sizzle that sounds like a mild frequency-response discontinuity at around 11 kHz (and was subsequently confirmed by my frequency response tests), the upper ranges are seductively smooth and rich. I have never heard strings on good CDs sound more natural than they do through these diminutive little speakers.

Yet the Maxims sacrifice little in terms of HF detail, definition and openness. The high end sounds as if it goes out almost indefinitely, and while it does not have quite the delicacy or airiness of a good electrostatic top, it has one of the best extreme-top ranges I have heard from a dynamic system. I would gladly take this high end in preference to that of most over-$2000 speaker systems I have auditioned in recent years.

The low end from these is just amazing! Although they don’t go all that low (no small speaker does), the fact that they are almost flat down to the lowermost note of a double bass (and the fundamental of most bass drums) gives symphonic music and most of the organ repertoire a solidity and foundation that one simply does not expect to hear from speakers this size.

All this is impressive enough, but to me the most gratifying aspect of the Maxims’ sound is their middle-range naturalness.

1 Ask Dave Wilson of Wilson Audio how cheaply one can design a loudspeaker system without compromises.
I have been bitching for years that "high end" loudspeakers have become gutless wonders, incapable of properly reproducing the lower-midrange instruments (trombones, cellos) which give symphonic music its feeling of power during fortissimos. These speakers, by contrast, exemplify what I've been driving at. They have the most accurate middle range I have heard from any speaker since high-end audio cast the horn-loaded tweeter into outer darkness. Yet the Maxims manage to accomplish this (remarkable) feat without the "awwk" coloration of the typical horn. How do they do this? They don't depress the range between 300 and 1000 Hz, that's how.

The benefits of this midrange authenticity are not limited to symphonic music, either. The twang of a guitar, the grunt of a synthesizer, and the power of a belt-it-out singer's voice are all similarly improved in impact and effectiveness. All music seems somehow to be more exciting and involving.

But that's not all. These little speakers will play loud! Unlike most small systems, which become increasingly steely-hard and veiled at listening levels above moderate (about 85 dB), the Maxims remain clean and well defined at levels to over a very loud (for most people) 100 dB, though see below for what they tend to do at over 95 dB. To hear "Amuseum" from Sheffield's Track Record coming out of these tiny boxes with the ease and power of a big system is almost laughable.

As is usual with small speakers, the imaging and soundstage presentation from these are excellent. They do not sound small. The sonic presentation seems to arch over the tops of the speakers to create a full-height stage even when the speakers are no more than a foot or so above the floor. (Incidentally, that was the optimum distance between the bottom of the speakers and the floor—at least in my listening room. Lower, and the bass became a little too heavy. Higher, and the low end became a little weak. The best placement will vary from room to room and according to the source material and power amplifier used.)

All in all, there is much to like about the Sieferts.

But don't run right out and trade in your Infinity IRSs until you read the rest of this report. Though you might not think so from the report as it reads thus far, the Siefert Maxims are not perfect. Their high end sounds (and measures) somewhat tipped-up above about 9 kHz, imbuing a slight zzz quality to massed strings and a subtle but definite hiss to vocal sibilants. There is an equally slight tendency towards steely hardness, and both of these things are exacerbated both by high listening levels (over 95 dB) and by many amplifiers. The Maxims sound by far their best with an amplifier which is both sweet at the high end and a little withdrawn through the presence range ("laid-back"). Tubed amplifiers do lovely things for the extreme highs but make the speakers sound almost piercingly bright. Neutral solid-state amps like the two Electron Kinetics Eagles (the 7A and the 2) still sound a little bit bright; the best amps for these speakers are typical high-quality transistor amplifiers like the Bel 1001 or 2002 and the extraordinary little (and cheap) B&K ST-140.

Inner detailing on the Maxims is very good but not state of the art. Yet the high end on the Maxims has that rare quality—particularly from dome tweeters—of sounding almost as though it has no upper limit. Delicate transients, as from brushed cymbals and triangle, cut effortlessly through the fabric of an orchestral fortissimo.

There are very few loudspeaker systems of any price that don't make a critical listener acutely unhappy when he or she returns from a live concert to put on a recording. The Maxim is, amazingly, one that doesn't. In fact, of all the speakers in this price class that I have heard, I would say that Siefert's Maxim is probably the most successful design of all. Mated with a suitable power amp, and not pushed to too high a listening level, it is one of a small handful of moderately priced speaker systems that can make most audiophiles (and practically all music lovers) quite happy for an indefinite period of time. Recommended.

JGH
Aerial Boundaries
Michael Hedges. Windham Hill Records WH-1032

The unique programming that has come to be known as Windham Hill music has been described as everything from the savior of sanity in modern music to Mantovani for style-conscious yuppies. I find much of their music interesting and some of it glorious; while some of it (George Winston) is merely further proof that familiarity breeds contempt, much of it is richly varied and rewarding.

Michael Hedges is certainly one of Windham Hill’s finest artists. Aerial Boundaries, his newest album, is one of those rare double-value affairs where both the sound and the music are uniformly excellent. The digitally mastered record (also available as CD) has a hot, close-miked sound on five of the tracks, and the transients that Hedges produces will tax the best of systems, especially on “Rickover’s Dream.” “Spare Change” is a five-minute-long investigation of the many varied sounds that can be electronically derived from an acoustic guitar. Done at the Peabody Electronic Music Studio, this cut exhibits a combination of beauty and experimentalism that is rare in music today. “Menage a Trois” for guitar, fretless bass and flute is a tasteful mix of talents and sounds, while “The Magic Farmer” rounds out the record with a beautifully blooming sound, bathed in just enough reverb to give the music a sound just slightly prettier than Bo Derek.1 The surfaces were completely silent; the sound was excellent; the music is magnificent. This is a record you must have. Even if your name isn’t Muffy!

Wes Marshall

1 And, we hope, just slightly more intelligent!LA
the basement in depth. The CD had a nice round sound on the bottom, but it did not have the bass extension found on the record. Transient response, especially on the more aggressive synthesizer sounds, was more sharply etched on the record. The CD, however, provided more of a sense of floating movement on the synthesized chording. The rising frequency response of the Alpha may have caused the majority of the differences.2 Which one sounds more like what actually went on in the studio is anybody’s guess.3

The two versions of “The Higher You Rise” had similar qualities. While the bass extended further on the CD than it did on the previous cut, it still sounded recessed compared to the aggressive, subterranean sound of the record. “Wise to the Lines” really showed its stuff on CD, the drums being especially extended and well articulated. The record provided superior transient response with a quickness and snap that was strongly reminiscent of the real thing. Some graininess that was present on the record, however, was not there on the CD. The opening piano motif on “Le Ballade” was virtually indistinguishable between CD and record, but the drums on the record had significantly more punch than on the CD rendering.

The Sheffield Drum Record is more interesting than enjoyable. I recognize the sonic power of a full drum set, but I must admit that I listen to music more often than I listen to sound by itself. However, as sound this is incredible stuff. “Ron Tutt” on record has more realistic cymbals than on CD. The bass drum on both formats is appropriately extended with good bloom. When there is nothing but drums, however, there is nothing to mask the LP’s surface noise, which ends up as a distraction. Again, transient response on the record is superior to the CD. On “Jim Keltner,” the snare drum provides the greatest differentiation between record and CD. The record’s snare drum cracks like lightning; the CD’s snare snaps with authority, but with not quite the ferocity of the record.

So, the conclusion is that the records sound better than the CD. Transient response response is the main area of sonic superiority, with bass extension following closely in importance. However, if you will remember, at the beginning of the review it was stated that the recordings from which the CD was derived were analog backups. When direct-to-discs were in their commercial heyday, their claimed superiority over other records was in the area of transient response and bass response. I have the feeling that the reason for the superiority of the records over the CD has something to do with the tape machine used. Nevertheless, the records are outright winners for sound, and since the purpose of these recordings is to serve as evaluation and testing devices, the records should be chosen over the CD. One final note: If you are only interested in the music, the CD is better recorded than 99% of what’s on the market and is significantly less expensive than the two LPs that make it up.

Wes Marshall

JGH Addendum:
While this is interesting as one person’s reaction to parallel analog and CD releases, Mr. Marshall’s concern about “obvious variables” are quite justified. His use of a phono cartridge which is known to have a fiercely rising high end must cast doubts on the validity of the comparisons.

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2 You’re damn right it “may have!”

3 Well, not actually “anybody’s.” Doug Sax might have a pretty well-informed guess.

Stereophile 113
Judith Blegen, soprano; William Brown, tenor; Hakan Hagegard, baritone; Atlanta Boy Choir; Atlanta Symphony Orchestra and Chorus, Robert Shaw conducting. Telarc CD-80056.

Occasionally, when the muses cry for release from the stereo, I will select a recording as much for its sound as for its music. Of my many records, so few combine these traits that it is a source of joy to discover a new one to add to this list. When the additional benefit of a dead-silent CD background is added, it’s magic. The Telarc CD of Carmina Burana is such a recording.

I must admit I was less than excited about the original Telarc LP of this. Telarc spread the work over three sides, which undoubtedly helped the sound but made you jump up twice during the work’s sixty minutes. The CD obviously solves this problem, and gives you CD’s amazingly silent background from which to hear the many quiet moments in the work.

The performance is unusually gutsy for the Atlanta forces. Robert Shaw struts his stuff with standout performances from the Atlanta Chorus, and Judith Blegen provides the creamiest of tones while singing of earthly pleasures and decisions to be made between chastity and lust in “In trinita.” The sounds of the orchestra in the “Tanz” from “Uf Dem Anger” include some of the most realistic I’ve heard. Depth and width of image are reproduced superbly. The imaging is so specific that you can almost point at individual voices. If your speakers will handle it, you will hear the most impressive reproduction of a bass drum I’ve ever heard. There is never a sense of strain in the sound, even in the “O fortuna.”

Musically, this performance is matched (perhaps) only by Muti and the Philharmonic on Angel; sonically, this disc is in a universe of its own. If you want to hear the full potential of Compact Discs, you need go no further than the Telarc recording of Carmina Burana.

JGH Addendum: I wasn’t all that impressed with the performance of this: Eugen Jochum’s readings on DG were far better. But this is a high-powered recording.

UNITED STATES LIVE

Laurie Anderson
Warner Brothers, 25192-1 (5 LPs)

Anyone who thinks the ultra-chic New York progressive music scene lacks a sense of humor hasn’t heard Laurie Anderson. Her last album, Mister Heartbreak, proved to be the most listenable and entertaining example of the genre in years. It also provided a sound quality that put most “audio-ophile” discs to shame.

Anderson’s style has elements of Philip Glass, Peter Gabriel, Japanese Koto music, and George Carlin, but in United States Live the result is a unique and fascinating form of multi-media entertainment. With her tape-bow violin in hand and small voice speaker in her mouth, Anderson takes the listener on a tour of the no-man’s land where absurdity and reality overlap. She shocks, entertains, and challenges the audience to think—and one gets the unmistakable impression that she’s enjoying every minute of her own performance.

This five-record set was recorded live at the Brooklyn Academy of Music, with Bob Bielecki as the engineer. Kudos to Mr. Bielecki; the sound is absolutely first rate and suffers none of the problems which so often affect

4 A “tape-bow violin” is an instrument consisting of a wooden violin-shaped instrument on which is mounted a tape head; a piece of magnetic tape with a complex monotone recorded on it is “played” across the head, and the output is simplified to create “music.”
AZDEN

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WELL WORTH A TRIP FROM ANYWHERE
live-concert recordings. It is clean, detailed, and well balanced. The natural hall acoustic and audience noises are the only sonic clues that this is a concert recording, although the energy and intensity of the performance by Ms. Anderson and her cast are real giveaways. They instill something that just isn’t found in studio canned wax.

United States Live is not likely to set any sales records or win a Grammy. It’s too far from the mainstream and strikes too close to the truth. But it is most worthy as a definitive statement of the art and talent of one of America’s most gifted and innovative performers and composers. This is the most important recording of avant garde contemporary music since Philip Glass’ Einstein on the Beach, and is destined to become a classic. Highly recommended. SWW


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Editor:

In reference to the wire review, I sincerely wish to thank *Stereophile* magazine and Tony Cordesman for the time and effort that went into a very honest and unbiased evaluation of high end audio cables as he saw them. While some people might disagree with some of the findings, they certainly cannot disagree with the methods and sincerity of Tony Cordesman.

In contrast to the infamous *Stereo Review* article which made charlatans and witch doctors of high end cable manufacturers, this was really refreshing. There are other magazines that refuse to do wire reviews because of the controversy it may cause. We think this is just as bad as doing a review that is incomplete with outdated methods under controlled conditions in a short period of time. We think Tony’s review clearly shows that high end cables are just as important as electronics and speakers. *Not* just something stuck in between. Like the speakers and electronics manufacturers, cable manufacturers are constantly trying to improve their products. Speaking for ourselves, and undoubtedly all the high end cable manufacturers, “Hats off” to Tony and *Stereophile* magazine for a job well done.

Sal DeMicco
Andy Ellis
Oceanside, NY

PRINCETON DESIGN GROUP

Editor:

Thank you for your positive comments concerning PDG’s Active Cartridge Stabilizer and Power Twin amplifiers. One point, however, deserves clarification. We introduced the Stabilizer in 1983 at the Las Vegas CES and demonstrated it using a moving coil cartridge at that time and again at Chicago in June, 1984. A number of *Stereophile*’s reviewers auditioned the Stabilizer then. In January, 1985, we elected to use a Decca van den Hul instead of a moving coil because (1) the technology involved in stabilizing the Decca’s three coils was fairly sophisticated and (2) quite frankly, the stabilized Decca outperformed the moving coils in a number of key areas. We felt this was more representative of the state-of-the-art possibilities using analog disc source material. Most who purchase the Stabilizer are indeed using it with high-priced moving coils and are excited by the obvious improvements. In fact, several of PDG’s reference systems are outfitted with stabilized moving coil cartridges.

Concerning the power ratings of the Power Twin amplifier: we have actually bench-tested the amplifier and found that it will do 310 watts into one ohm for about 10 seconds before the power line circuit breaker is triggered.

We welcome any further dialogue with *Stereophile* or its readers, and feel confident Dick Olsher’s considerations about the Stabilizer’s performance with moving coil cartridges will vanish once he actually hears the combination for himself. See you in Chicago!

Ed Osborne
Ed Evans
Dan Mohr
Princeton Jct., NJ

NAP CONSUMER ELECTRONICS CORP.

Dear Editor:

In response to Mr. Iyall’s letter in your Vol. 8, No. 1, issue regarding the Magnavox CD players, we have the following comments:

The condition of the programming for the selections, indicated by Mr. Iyall, is referred to as the zero pause mode. In other words, there is no time allotted between
selections.

Circuitry has been changed on our new machines FD 1040/2040 in order to cope with this condition. However, it must be recognized that the separation of music by track numbers was never intended to be used for the purpose of dividing a continuous program of music. The additional sub-code information incorporated into the CD standard for this expressed purpose is called indexing. And, if the music industry was adhering to the standards properly, the problems we are seeing with the software, such as those encountered by Mr. Iyall, would not be occurring.

Incidentally, the muting condition when playing certain types of software on our earlier machines is due to a limitation in the servo microprocessor muting circuitry.

Concerning product service, records were checked at our consumer affairs office for 1983, 1984, and 1985 and a consumer complaint under the name of Bob Iyall could not be found.

It should be noted that back in 1983 NAP-CEC did not have authorized servicers for this product since engineering wanted to evaluate all returns and consumers were provided with an exchange.

We feel that in any new technological venture such as Compact Disc, certain unanticipated problems will more than likely arise. However, we are, and always have been, dedicated to supporting our customers with quality products including quality product service.

Patrick R. Wilson
Knoxville, TN

WHARFEDALE DIAMOND

Editor:

Many thanks for your time spent listening to our Diamond and for giving them such a thorough appraisal. We agree fully with your comments about small box limitations, although we still feel that there is a lot more that can be achieved in this area in the future.

A point of interest for your readers: since the review pair was obtained, the Diamonds had high quality binding posts added for better connection, and have had their power handling increased to 100 watts. Hopefully of equal interest will be the introduction of a Diamond with our aluminum dome tweeter (as used in our 708 system) in the fall.

We are very proud of the Diamond. It has become our most popular system and helped put us back on the real high fidelity map. It gives us a thrill to think of the pleasure listening to Diamonds give . . . I guess that's what it's all about.

Geoff Miller
Wharfedale, USA

HI FI CLUB

Editor:

Thank you for your review of the QLN Ones and Superior Woofers. We at the HiFi Club are greatly pleased to read that the sonic qualities of the QLN's were so, in detail, accurately pointed out even in comparison with the far more expensive Acousstat Sixes. Our experiences while A/B'ing the QLN's with other dynamic loudspeakers have been very close to those of Mr. Sommerwerck's, but we are very surprised in regards to his slight reservation of the Superior Woofers.

To clarify matters a little bit—the Superior Woofers are not a subwoofer addition to the QLN Ones, but rather an upgrade from a good two-way to a superb three-way system with the woofers in separate enclosures. Our interpretation of a "true" subwoofer is a bottom-loaded design crossed over in the 100 Hz region, whereas the Superior Woofers are front-loaded and crossed over at 250 Hz. The addition of the Superiors, very accurately described by Mr. Sommerwerck, totally restores the lack of warmth in the upper bass region in the Model Ones, and also allows the buyer to purchase the Superior System as two individual parts for any economic reasons he or she may have. (In this case, do purchase the Model Ones first, or you may think your neighbor just bought a new pair of speakers). Moreover, the addition of the Woofers will greatly increase the System's overall dynamic capabilities. As for the findings of lack of bass in the 20-40 Hz region, we can only guess that this must be due to
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—Stereophile, Vol. 8, No. 3

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room interactions at Mr. Sommerwerck's Connecticut estate. The factory in Sweden never intended the System to go down to 20 Hz, but they do claim a 3 dB down point at 28 Hz. In quoting the designer at the QLN factory, Mr. Nils Liljeroth: "To have a $1400 system truly go down to 20 Hz is asking for unnecessary trouble, especially when you are dealing with 8" drivers."

Otherwise, we have little to say about Mr. Sommerwerck's "short and to the point" description of the QLNs. They are indeed very uncolored, very balanced, and do possess spectacular imaging abilities. They also do something many other speakers lack—retention of total tonal balance even at lower volume. So for those of you who have infants or nasty neighbors around, here is the answer to all your prayers.

Finally, if Mr. Sommerwerck changes his mind, the HiFi Club will give a generous trade-in allowance on his Acoustat Sixes.

Hans Betzholtz
Santa Barbara, CA

SIEFERT RESEARCH

Editor:

Thank you for the very complimentary review of our Maxim IIIs. It is of course gratifying to have our extensive development effort so well received.

As Mr. Gordon Holt pointed out, the descriptive literature supplied with the Maxim IIIs makes use of many well-worn "features and advantages" common to loudspeaker sales pitches. In such a competitive marketplace, this is nearly unavoidable.

There are two additional factors dramatically influencing the Maxim IIIs, which we feel are important.

First, technology: Design work at Siefert Research is conducted using computerized FFT spectrum analysis. This allowed us to accurately assess "group delay" which we found correlates the subjective "imaging and coherence" to an objective measurement with predictable results. Computer modeling was used for enclosure design and crossover analysis.

Second, and perhaps more important, subjective analysis: All serious audio engineers, myself included, work very diligently toward achieving "state of the art" performance in their personal listening environment. During the three years of development and refinement of the Maxim IIIs, my residence was (like the Maxim's) compact. Living space was at a premium, and large speakers of any description were out of the question. The size of the system I was to live with was not a matter of choice but of necessity. My desire to achieve sonic euphoria remained intact, however the task at hand became considerably more challenging.

Given the broad variety to possible designs and the length of time available to try them, I quickly found many of the same faults that Mr. Holt refers to as typical of the breed. But I was not able to merely sign it off to inevitable compromise because the Maxims were my constant companions, a situation others like myself may not have had to face. We all have egos. When I would be called upon to demonstrate my design capabilities, I was unable to simply fire up an awesome megabuck "reference unit." This situation only increased my motivation to succeed where others had not.

This dedicated effort has resulted in a speaker which we believe, and Mr. Holt seems to agree, is unlike most small two-way systems. The Maxim III is a speaker that an audiophile and an engineer can enjoy indefinitely, cost and size notwithstanding.

H. Daniel Siefert
Malibu, CA

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