

The Audio Critic

Special issue!

In a landmark test of editorial flexibility (not to mention subscriber acceptance thereof), we abandon our usual format, postpone until the next issue all previously announced equipment reviews as well as our regular features, and bring you a special report without precedent.

We present, only a few *weeks* after the Summer Consumer Electronics Show, a critical-analytical report on most of the audiophile-oriented equipment exhibited there.

Read, for the first time, about the new Heil woofer, the Mark Levinson power amp, the Hafler preamp kit, the Pyramid speaker, and all the rest.

The Audio Critic

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EDITOR'S NOTE

The 1977 Summer Consumer Electronics Show took place in Chicago from June 5th to June 8th. Our decision to devote this issue to that single subject and postpone everything else until the next issue was made then and there, in the midst of the show. That's why we didn't announce it in the March/April issue and that's why we couldn't quite make our deadline with this May/June issue before the end of the May/June period.

We feel, however, that we had no choice. The new equipment and new ideas we encountered in Chicago will cast their shadow on our forthcoming evaluations of products that reached us long before the show, and it would have been unfair to deny our subscribers that same critical perspective for several months to come. (For example, we may have to conclude our power amplifier survey without the new Mark Levinson ML-2, even though we suspect it might challenge our top choice at a later date. And so on.)

In general, we want our subscribers to know whatever we know almost as soon as we do. To remain an enlightened audiophile in the second half of 1977, it's important in our opinion to be aware of the developments discussed on the following pages—aware at least of their existence if not their technical rationale. The audio scene is in a state of unprecedented ferment; both good and bad things are happening very fast.

If you disagree, if you feel that a two-month postponement of the originally announced test reports is too high a price to pay for getting this other kind of information while it's still news, please let us know. When it comes to formulating our future editorial policy, no one is more influential than you, our subscriber.

The State of the Art at the 1977 Summer CES

We report and analyze (not as conclusively, for obvious reasons, as in our regular equipment reviews) the latest attempts of the audio industry to do it better than ever before.

Going from exhibit to exhibit at the Summer Consumer Electronics Show is a highly inadequate way to explore the latest developments in audio equipment; unfortunately there's no better way. The four-day show, open to the trade only (although easily crashed by groupies), is the only annual event that brings together so many hundreds of manufacturers and distributors; by devoting about three minutes to each, one could see them all. Most of the sophisticated audio companies can't even be found in the main exhibition hall, which is dominated by the commercial heavyweights; the exhibits of greatest interest to audiophiles are scattered all over Chicago in half a dozen hotels. The cabbies think that's a great idea.

We tried to be judicious in our selection of exhibits covered in depth, but we inevitably missed a few important ones. Whenever we could, we discussed the design philosophy behind the equipment with the designer himself and are reporting below accordingly. As for the

sonic performance of the equipment, any impression formed at the CES is of questionable validity. Truly great sound speaks for itself, of course, but poor sound isn't always attributable to the particular component being demonstrated. The culprit can just as easily be a totally misaligned phono cartridge, acoustical feedback in the turntable, a defective amplifier borrowed in the last minute to get some sound into the room, etc. Under the chaotic conditions of the CES, such things are par for the course. For the critic, mercy must therefore season justice.

In a few cases, we were able to develop additional information about certain products independently of the show, either through personal contacts or through advance samples sent to us directly. Without jumping the gun on our regular equipment reviews, we're making use of this information to round out some of the reports below.

Let's proceed, then, in alphabetical order.

Acoustique 3A

Speaker Systems

Acoustique 3A International Inc., 871 Montee de Liesse, St-Laurent, Montreal, PQ, Canada H4T 1P5. 303 Fifth Avenue, Suite 1306, New York, NY 10016.

Our very first item is unfortunately a travesty of SOTA. This company distributes in North America eight different speaker systems made in France by *Art & Acoustique Appliquee* ("3A"), ranging in price from \$189 to \$1000 and promoted in the most florid snake-oil style.

The literature claims absurd electroacoustic breakthroughs for nearly every model, including an "Acoustic Pressure Feedback" system (one more dreary attempt to include the woofer in a servo loop) that gives you "20 Hz guaranteed flat" in a 25 by 22-inch coffee table (how about that, Dr. Small?) and an "Infinite Acoustic Line" that appears to combine in a single masterstroke all the disadvantages of acoustical labyrinths *and* slot loading. We could go on and on; each 3A speaker is another great new invention and patented to boot.

The sound in the exhibit was dreadful, but that doesn't prove anything. We'd be even willing to contemplate the possibility that 3A speakers are capable of conventionally decent sound. The individual drivers seem to be quite well-made, and we're told that some of the speakers are used as professional monitors in Europe (which again doesn't mean a hell of a lot). But when you come on like gangbusters you're expected to deliver a lot more than 3A possibly can, just on the face of it—unless the laws of physics have changed since we last looked.

ADC

Phono Cartridges, Tone Arms

ADC Phono Cartridges, a division of BSR Consumer Products Group, Route 303, Blauvelt, NY 10913.

The new ZLM cartridge (\$155 hand-picked, \$135 standard, dealer's cost about half) is now ADC's top-of-the-line model, the XLM

Mk III dropping to second place. The ZLM features the "alipitic" stylus, which has a larger surface of contact with the groove wall than the XLM's standard elliptical stylus but smaller than a Shibata. ADC claims it's better than either; although we find their technical argument specious (the Shibata tip has so much contact with the groove wall that it can literally "play the dirt" in the groove, they say—but we keep *our* records clean), there's no reason to assume that the ZLM isn't an improvement over the XLM, which it otherwise duplicates.

It must be remembered, of course, that any biradial stylus is considerably more sensitive to cartridge misalignment in the arm (i.e., tracking error) than a conical stylus, and we are quite certain that the endless controversies in connection with elliptical, Shibata and similar tips stem from this stubbornly overlooked fact. As you go from conical to fat elliptical to skinny elliptical to Shibata, there's a progressively higher penalty for sloppiness, as well as greater rewards for the precisionist. (Need we say that the conical-is-best cult isn't on very firm ground mathematically?)

ADC also has a neat new arm, the LMF (\$205 with integrated head shell, \$215 with removable). It's made of carbon fiber, and there's nothing wrong with that; its straight-arm/offset-head geometry appears to be at least reasonably close to correct (we haven't measured it, of course); its construction and stability seem to be good. We're hoping to get our hands on this one for testing.

Analogue

Preamps, Power Amps

Analogue Engineering Associates, Inc., 520 Park Avenue South, Winter Park, FL 32789.

AEA is a manufacturer that interests us a great deal and not just because of their beautifully constructed, quite reasonably priced Analogue 520 preamplifier, which has been on the market for some months now but which we haven't had a chance to test yet. What really turns us on is their claim to have developed an ultrasophisticated laboratory test that correlates with the audible performance of a

preamplifier—exactly what we've been looking for since the earliest phase of our preamp survey.

Their laboratory test signal is the best possible simulation of dynamic, non-steady-state program material—it's actual music. The output of the preamp is compared very precisely against the input; the difference signal is derived; then this signal, which is the net error of the preamp, is analyzed in real time by means of a very elaborate measurement system that communicates with a computer. This is supposed to reveal both frequency-domain and time-domain errors. Transient (i.e., not steady state) errors of the order of 0.0001% are claimed to be readily detectable by this test setup, called the AEA Transient Error Detection System. The Analogue 520 preamp specs out with less than 0.004% total transient distortion, we're told.

We have no strong opinion on AEA's approach, although we have a sneaking suspicion that the *input* signal necessarily undergoes some sort of processing in this system and therefore can't theoretically remain intact as a reference. We could be wrong; in any event, the sound in the AEA exhibit was a long way from flawless, and some keen-eared friends of ours have heard hard-sounding Analogue 520's in the field—which, once again, could have been a cartridge problem or any number of other things. We've been promised a sample for testing, and that's the only way we'll know for sure.

There's also an Analogue power amplifier in the works, about which we know only that it's a hybrid of FET and bipolar stages, is rated at 55 watts per channel, isn't exceptionally fast (25 V/uS), and has peak-reading VU meters. Its total transient distortion, measured with the same methods as the preamp, is supposed to be 0.02%.

This is a company to watch.

Audionics

Preamps, Power Amps, Speakers

Audionics, Inc., Suite 160, 10950 SW 5th Avenue, Beaverton, OR 97005.

The most interesting item here was the prototype of the new Audionics BA-150 power

amplifier, designed by David Berning, who has so far been selling his preamps and power amps directly (and very slowly) out of Potomac, Maryland. The Audionics edition of his latest thinking in power amplifier design is scheduled for delivery before the end of 1977 (but don't hold your breath) and will sell for "under \$2000."

Two things are unique about the BA-150. One is that it combines transistors, vacuum tubes *and* output transformers. The front end is solid-state class A, the output stage is designed around two 6LF6 tubes per channel (you can touch them—they run that cool), and power output approaches 200 watts per channel into either 4, 8 or 16 ohms on account of the transformer. The other, even more remarkable, feature is a front-panel control that allows the user to switch in varying amounts of negative feedback, from 0 dB (!) to approximately 20 dB. Lo and behold, the amplifier sounded best (by far) with *no* feedback, at least through the Audionics speakers used, on whose resolving capabilities we have no opinion.

The last no-feedback amplifier we've heard was the Editor's 1949 model 10-watt all-triode mono kit, the one that awakened his schoolboy interest in high fidelity. It sounded fantastic (no TIM distortion, see?) and, of course, the BA-150 sounds even better. Let's face it, negative feedback is a crutch; at best a very sophisticated and invisible electronic prosthesis, like The Six-Million-Dollar Man's bionic leg. Zero feedback is Nature's Way; unfortunately it isn't feasible in most circuits for today's needs. Just how successfully David Berning has handled the problem could only be determined by A-B-ing the BA-150 against the best feedback amplifiers. We're looking forward to the opportunity to do so.

We also had a very interesting conversation with Barry Thornton, designer of the Audionics BT-2 preamplifier, which we haven't tested yet although it has been around for a number of months. Barry claims that a lot of preamplifiers produce a reflection of the signal from the output back into the phono input, so that the phono cartridge is energized in the manner of a motor (since all generators are motors in reverse). This creates minute stylus movements that blur the signal the stylus is tracing. Hence the "inexplicable" differences between preamps. A mind-boggling concept, this one, but Barry claims to have performed all

sorts of corroborating experiments, indicating that some preamps are up to 20 dB better in this respect than others. The BT-2 passes with flying colors, naturally—and our eyebrow is raised way up toward our receding editorial hairline. But who knows; it isn't completely beyond the realm of plausibility. Wow.

Barry Thornton has also designed plug-in replacement circuit boards for the Revox A-77 tape recorder, which are claimed to raise its playback and record electronics to the sonic performance level of the BT-2. The playback kit, called the Audionics RVP, is priced at \$200; the record kit, the Audionics RVR, at \$175; if you get both, there's a package price of \$350. Since the Revox A-77 is good value but can stand some improvement of its audio signal paths, this sounds to us like a worthwhile conversion. We haven't tried it, of course, since the boards won't be available until mid-August (it says here).

Bertagni (B.E.S.)

Speaker Systems

B.E.S., Inc. (Bertagni Electroacoustic Systems), 345 Fischer Street, Costa Mesa, CA 92626.

Here again is a Mickey Mouse design posturing as "a totally revolutionary technology," compelling us to devote some space to it simply to protect the innocent.

For years we have wondered whether the motivating force behind the persistent Bertagni loudspeaker hype was cynical charlatanism or messianic techno-illiteracy. After the CES, we still can't decide. The concept is so perverse and the technical exegesis in the B.E.S. literature so ridiculously incompetent, nay, phantasmagoric, that to refute them would require starting with two plus two. Since we aren't licensed to teach kindergarten, we'll just remind you that these big molded polystyrene panels, with all kinds of ridges, notches, depressions, etc. on them and with all sorts of moving-coil and piezoelectric drivers sunk right into the polystyrene, have been around for quite some time. Fisher tried to market them in a slightly different format in 1972 or thereabouts, at which time they were known as Fisher Sound Panels. Even the snake-

oil promoters at Fisher were rather embarrassed by the whole business (their cheapest bookshelf speakers sounded better) and they soon dropped Professor Jose Bertagni's brainchild, 20-odd patents and all. (The patent office recognizes whatever is different, not necessarily what's correct.)

Of course, a bad speaker is like bad coffee. It's still hot, wet and black—and *somebody* will like it. The Bertagni speakers do play music, nice and loud. But if they weren't good enough for Fisher, how do you think they sound to audiophiles for whom Fisher isn't good enough?

Beveridge

Speaker Systems

Harold Beveridge Inc., 422 North Milpas Street, Santa Barbara, CA 93103.

The Beveridge Cylindrical Sound System, made in extremely small quantities (though on a regular production basis), has an enviable audio-freak reputation, especially on the West Coast, but we had never seen or heard one until the CES. And here it was the new Model 2SW that Harold Beveridge was demonstrating, for the first time anywhere, instead of the two-year-old Model 2, which we still haven't heard.

The difference is that Model 2 attempts to cover the full audio range with a single speaker per channel, whereas Model 2SW is supplemented by a subwoofer on each side from 70 Hz down. The almost floor-to-ceiling electrostatic "line source" element is of the same design in both models, except that in Model 2SW it's optimized from 70 Hz on up and is capable of much greater sound pressure levels than the Model 2 element, which we're told is no lease breaker. What's more, the conventional subwoofer in Model 2SW has a more extended low-frequency response, we're told, than the fully electrostatic Model 2. According to "Bev" (who ought to know), Model 2SW is the better system overall, although he is keeping Model 2 in production. The prices are such that, if you have to ask, you can't afford them (of the order of \$4000 the pair, including the built-in amplifiers).

The purity of the program source in the Beveridge exhibit wasn't above suspicion, so we were unable to form a defensibly firm opinion of the Model 2SW. But we can tell you this: the dispersion and imaging characteristics of the speaker are nothing short of astonishing. It creates an absolutely uniform sound field in the room; it doesn't matter where you sit, stand, lie or walk—you hear the same sound and the same spatial perspective, just as in real life. This is an indescribably pleasurable experience issuing from a mere man-made machine, and it proves that the Beveridge is a true line source, not just a tall, skinny speaker. Alvin Foster, the golden-eared factotum of the Boston Audio Society was listening with us, and it was hard to tell whose jaw was dropping lower. "Man, isn't this *baaad*?" Al kept asking.

The moment of truth (at least for us) about the total sonic capability of this system will come when we test the Model 2SW under our own roof. We've been promised one of the earliest production samples, so we'll stop enthusing until it arrives.

Breuer Dynamic

Tone Arms

Exhibited by Sumiko, PO Box 5046, Berkeley, CA 94705.

Here's a completely ordinary-looking, straight-tube, offset-head, pivoted tone arm. Until you examine it very closely. Then it becomes apparent that it's made like a Patek Philippe watch. In Switzerland, too. And not much less costly, either.

This was a "dry" exhibit (no sound), so we couldn't listen to the Breuer Dynamic Tonearm; but how can you listen to an arm, anyway, without inserting it into a known reference system? Close scrutiny of the product and of the literature, however, reveals thorough awareness of the physics and geometry of tracking, as well as impressive craftsmanship. The arm is constructed of 120-odd individual parts, most of them aluminum and all of them hand-finished. It's a wonderful bit of insanity, claimed to have virtually perfect tracking and resonance characteristics—and we're inclined to believe all the claims.

Just thought you'd like to know. We're not even sure we can lay our hands on one.

Bryston

Power Amps

Bryston Manufacturing Limited, 17 Canso Road, Unit 1, Rexdale, Ont., Canada M9W 4M1.

The fast-slewing (60 V/uS), fully complementary, class AB circuitry developed by this Canadian firm is now available in three different power amplifiers, rated at 50, 100 and 200 watts per channel, respectively, into 8 ohms. Double these ratings into 4 ohms and *quadruple* them for bridged mono operation into 8 ohms.

The top-of-the-line Bryston 4B was used in a surprisingly large number of speaker, preamp and other exhibits at CES, generally giving a very good account of itself, even in setups where no other power amp seemed to work. We, too, have had a chance since the show to use one for a few hours and are quite impressed. The 4B gave the almost twice as expensive Threshold 800A severe competition. Obviously, the early sample we had referred to briefly in our last issue (The Admonitor, page 48) was untypical.

We're about to receive two brand-new samples of Bryston 4B for inclusion in our power amp survey. After our recent experiences, they'll have to live up to high expectations.

Cizek

Speaker Systems

Cizek Audio Systems, Inc., 149 California Street, Newton, MA 02158.

It's nice to see simple, straightforward, reasonably priced speakers with a credible engineering claim. By credible we mean (a) in accordance with the laws of physics, not the figment of an untutored imagination, and (b) borne out, or at least not instantly contradicted, by the audible quality of the resulting sound.

The principal claim for the Cizek speakers is resistive loading of the crossover network. In other words, the drivers are made to look like simple resistances to the network, not like the complex reactive loads they actually are. This is

accomplished by means of additional impedance compensating networks across each driver. Roy Cizek believes this is the only way genuinely flat response can be achieved, even if everything else is done just right, and we're inclined to agree. The two models we heard (each a simple woofer-tweeter system in a box, the larger one selling for \$198 and the smaller for even less) sounded extremely smooth, neutral and nonfatiguing—considerably better than such speakers have a “right” to. The dynamic range and bass were also excellent. We've been promised samples for a thorough wringing out under our own roof. A prototype subwoofer also sounded impressive, at least for the brief time we were able to listen.

Just on the basis of our limited exposure to this line, if anyone asked us about accurate speakers for less than \$400 a pair, we'd be inclined to send him to Cizek.

Dahlquist

Speakers, Crossovers, Preamp

Dahlquist, Inc. 27 Hanse Avenue, Freeport, NY 11520.

In addition to stacked, mirror-imaged DQ-10's (two per side, the top ones inverted), which we had never seen or heard before, the news here was the DQ-CM1 preamplifier, shown in prototype form (meaning that the design is still subject to last-minute changes). The CM stands for Carl Marchisotto, the electronics man on the Dahlquist team, who has frequently expressed at least mild dissatisfaction with any and all preamps available today, regardless of price. Since both Jon Dahlquist and Carl are known to us as very careful listeners, and quite objective critics of their own work, we had high hopes for the DQ-CM1 as an all-out effort.

Unfortunately the sound in the Dahlquist exhibit gave us no opportunity to form a valid opinion. The touchiness of the Motorola piezoelectric tweeter in the DQ-10 and the peculiar room characteristics added up to a somewhat zippy upper range; in fact the upside-down DQ-10's had to be disconnected to achieve a tolerable balance. So we still have no idea what the DQ-CM1 sounds like. When it's in production, we'll test it, of course. Meanwhile, knowing the talent behind it, we can virtually guarantee that it won't be bad.

Dayton Wright

Speakers, Preamps

Dayton Wright Associates Limited, 350 Weber Street North, Waterloo, Ont., Canada N2J 4E3.

Another new preamp here, the Dayton Wright SPA—except that it isn't really new. It's basically the former top-of-the-line SPL Mk 2b with new cosmetics and without the headphone output.

Again, the sound in the exhibit was obviously not optimized, making it very difficult to judge either the SPA or the latest Dayton Wright full-range electrostatic speaker that was being demonstrated. Since both of them are scheduled for in-depth testing and review, we'd prefer not to engage at this point in idle speculation as to their SOTA ranking. Obviously, they're contenders.

One thing that must be noted here is that, contrary to whatever else you may have heard earlier, Mike Wright no longer has anything to do with this company, either as a partner or as a consultant. In fact, he has his own new company (see under Watson Laboratories below). The departure of a designer so closely identified with a product line can only mean one of two things. The product will either become better or worse. It's the greatest statistical unlikelihood that it will remain exactly the same, since it's no longer the same man whom it has to satisfy before it's released. This company has had its ups and downs as far as product consistency is concerned, and we wish them the best of luck under their new management.

D B Systems

Preamps, Crossovers, Power Amp

D B Systems, PO Box 187, Jaffrey Center, NH 03454.

It was bound to come: a modest but highly sophisticated power amplifier to accompany the modest but highly sophisticated D B preamplifier. The new DB-6 power amp will sell for \$650 and comes with the same no-frills-yet-no-compromise philosophy behind it as the DB-1/DB-2 preamp (which incidentally has been

raised in price to \$475, a \$50 increase).

We can't tell you much about the DB-6 except that it operates in class A at normal levels, going into class AB operation only when severely stressed, and that it looks just as austere (the black box image) as the preamp. We have no reason to believe that it won't perform to the same standard of sonic accuracy as the original D B black box. These are dedicated people.

By the way, for those who find the D B preamp too stripped-down for their needs, there's now the DB-5 tone-control box at \$375. In addition to bass and treble controls, it has a seven-position mode switch and provisions for special low-frequency boost from either 60 Hz or 40 Hz on down.

Yes, we're planning to test them all.

DCM

Speaker Systems

DCM Corporation, 724 S. Division, Ann Arbor, MI 48104.

At \$660 a pair, the widely discussed but seldom seen DCM Time Window represents a remarkably advanced approach to "conventional" (meaning moving-coil/multiple-driver) speaker design. DCM is able to show documented proof that at least in one specific area, namely impulse response, the Time Window outperforms just about any speaker system on the market, regardless of price.

Near-perfect impulse response indicates minimum time smear, and the entire design is predicated on the priority of time response over amplitude response in subjective listening. We believe that this philosophy has a lot to be said for it, but since we're right in the midst of testing the DCM Time Window for our forthcoming speaker survey, we'd prefer not to comment on its relative SOTA ranking here, except to note that it's quite sensitive to room placement and that the CES demonstration didn't in any way do it justice. Oh yes, in case you didn't know, the Time Window is a waist-high floor-standing system that takes up very little floor space.

Also demonstrated was the DCM QED speaker system, which costs considerably less and also has outstanding impulse response, although we definitely preferred the sound of the Time Window. Steve Eberbach, the designer of these unusually original speakers, hints that he has a second-generation design concept up his sleeve—so keep an eye on this smart little company.

Dunlap Clarke

Power Amps, Preamp

Dunlap Clarke Electronics, 230 Calvary Street, Waltham, MA 02154.

The Dunlap Clarke power amplifier line is now rather similar to the Bryston line in that it has been expanded to three very ambitious models, rated at 125, 150 and 250 watts per channel, respectively, into 8 ohms and twice those figures into 4 ohms. They aren't quite as fast as the Brystons, however; their slew rate is of the order of 25 V/uS, and they can't be strapped for mono at the flick of a switch.

The sound in the Dunlap Clarke exhibit didn't give us a valid clue as to the true quality of these amplifiers, but we can tell you something about the top-of-the-line Dreadnaught 1000 on the basis of previous experience: it drives the Dayton Wright full-range electrostatic very nicely, but not quite as nicely as the Threshold 800A (which costs about 50% more). Altogether elsewhere, on the other hand, we've heard the Bryston 4B give the Threshold a very hard time in an A-B situation, so by geometrical logic (rather than direct comparison) we'd be inclined to choose the Bryston over the Dunlap Clarke, especially as the Bryston happens to be a bit less costly. Since Dunlap Clarkes are hard to obtain for reviewing, we'll probably have to let it go at that.

The Dunlap Clarke Model 10 preamplifier, also exhibited, seems to be a very sophisticated design considering its \$675 price tag (\$600 without moving-coil electronics). In today's high-end market, that's not expensive.

Dynavector

Tone Arms, Cartridges

Onlife Research, Inc., Tokyo, Japan. Distributed in the U.S.A. by Audioanalyst, Inc., PO Box 262, Brookfield, CT 06804.

One couldn't help noticing how many knowledgeable exhibitors at the CES were using the Dynavector DV-505 tone arm, a wildly complicated \$500 device. Since we've had some experience with a very early sample (one of the first six or eight imported by the distributor), we'd like to get a few observations off our chest.

For one thing, the DV-505 is characterized by some startling asymmetries. Horizontally it's a high-mass, damped arm. Vertically it's a low-mass, undamped arm. Regardless of the design rationale behind this asymmetry (explained in the Dynavector literature), it *has* to create a corresponding asymmetry in the interaction of the stylus with the groove. Thus a basic imperfection is introduced in order to buy solutions to some nagging problems of tone arm design. That these solutions are effective is proven by the generally satisfactory performance of the arm with a large number of cartridges, which in itself is a rarity. Still, the road to perfection can't start with an imperfection. More about this in our next issue.

Another problem with the DV-505 is that its geometry isn't 100% stable. Adjusting the height of the arm can result in a change in the stylus overhang on account of some incurable sideways play in the height-adjusting mechanism. This is no better in recent samples than in ours. (We checked a number of them at the show.)

Lastly we must report that our particular Dynavector DV-505 completely failed after heavy use. The vertical bearing simply fell apart. Audioanalyst, the distributor, was extremely prompt and courteous in restoring the arm to good-as-new condition; furthermore we're told that the same can't happen to more recent samples because of improved assembly techniques.

On the other hand, we must confess that we can't name a single arm that's unequivocally better in every way than the DV-505. When it works, it sounds great. That's why all those exhibitors were using it.

ESS

Speaker Systems

ESS, Inc., 9613 Oates Drive, Sacramento, CA 95827.

Put on your hip boots, guys. Here comes the biggest snow job in years, the ESS Transar speaker system. Featuring (you guessed it) the *new* Heil woofer. Along with the old Heil tweeter.

The best way to visualize the new Heil "low frequency system" is to think of five smallish cone drivers, roughly of midrange size, lined up one behind the other and facing in the same direction, with a single long voice-coil tube passing through all five apexes, sort of like a giant shish kebab. When you move the tube at one end (with a regular magnet-and-coil speaker motor), all five cones move in the same direction.

Now this is a slight oversimplification of the Heil woofer's physical execution but, so help us, not of its concept. Actually, the "cones" are rather complicatedly contoured Lexan diaphragms, the "tube" is really a four-sided open structure made of long carbon fiber rods, and the sound is deflected out into the room by 45-degree Plexiglas reflectors, otherwise the wave propagation would be in the floor-to-ceiling direction, the rods being vertically deployed. A large, flat, open baffle houses the whole thing, which looks like a 21st-century sci-fi creation—and that's its main appeal.

It's our impression that the engineering input was "Make something that's different—as long as it works at all." Obviously, a larger, woofer-sized version of the original Heil Air-Motion Transformer proved to be impossible to get off the ground, after several false starts; on the other hand, a conventional woofer to accompany the AMT tweeter was unthinkable in a new top-of-the-line model from the show-biz point of view. So they turned on the proverbial blue light to show the customer a blue suit.

In our considered opinion, the new Heil woofer is a hype. All other things being equal, there's no reason why five drivers shouldn't perform at least as well in a conventional side-by-side arrangement as in the shish kebab configuration. The latter is more complicated,

more sensational, and more expensive—but not better.

The ESS Transar system is driven by its own unconventional, current-source power amplifier, about which we also have our doubts, but who cares? The speaker is the issue. It happened to sound highly colored and bottom-heavy in the demonstration, which of course doesn't prove anything. On top of it, the preamp used was the notorious Phase Linear 4000, just to make sure that even a potentially great speaker wouldn't be heard to best advantage.

We wonder if ESS is in any kind of touch with the best minds in electroacoustics or with the best ears among audiophiles. Somebody, somewhere along the line, should have said no to all this nonsense before it went this far.

Hafler

Preamp Kit

David Hafler Company, Suite 125, 7616 City Line Avenue, Philadelphia, PA 19151.

David Hafler, in case you didn't know, is one of the major figures from the early days of high fidelity; he was co-inventor of the still viable "ultralinear" vacuum-tube output circuit, as well as original founder-owner of the Dyna company and designer of all the early Dynakits. In other words, a man who knows what he's doing. Although he sold his company at a handsome profit, he obviously can't say out of the audio business, so here he is with a new firm and a new product.

Two things about the new Hafler DH-101 preamplifier attract immediate attention. One is its very low price (somewhere in the \$200's in kit form, a little more factory-assembled); the other is its unabashed presentation as State of the Art, which is not as dismissable coming from Dave Hafler as it would be from, say, Fisher or Realistic. The man has never lost credibility.

What is claimed is a very simple discrete-

transistor signal path, push-pull throughout, with nearly perfect impulse response and very low ultrasonic intermodulation distortion that could dump difference products into the audible range. Startling clarity and smoothness are reported to have been observed even by skeptics. There was no sound in the exhibit, so we can't confirm any of this. But we've been promised a DH-101 for testing.

If the claims for this product turn out to be 100% true, the entire high-end amp/preamp establishment is in jeopardy. Something to think about, huh?

Hegeman

Preamps, Speakers

Hegeman Audio Products, Inc., 555 Prospect Avenue, East Orange, NJ 07017.

Here it is—the complete Hegeman preamp we gave you a preview of in our Hegeman Input Probe report in the last issue. Called the HPR/CU, the two-chassis system costs \$645, of which the under-the-turntable phono preamplifier (HPR) represents \$270 and the separate control unit with power supply (HCU) \$375. Also available is a \$50 stripped-down power supply, minus controls (even volume), the HPS. It's all quite austere and functional, with the emphasis on sound rather than frills.

There were turntable and arm problems in the exhibit, so we know no more about the sound of the Hegeman preamp than what we told you last time. Stew Hegeman believes it represents his best effort to date in getting a signal out of a cartridge and into a power amp, and his past efforts at Brociner and Citation haven't exactly been contemptible. We'll be testing the HPR/CU very shortly.

And, quite frankly, if it doesn't turn out to be one of the best-sounding units we've tested, regardless of price, we'll be surprised. We know the kind of thinking that went into it.

Infinity

Speakers, Preamp, Amp, Tone Arm, Turntable

Infinity Systems, Inc., 7930 Deering Avenue, Canoga Park, CA 91304.

The novelty here was the Infinity Black Widow Air-Table, a turntable whose platter is supported by a cushion of air instead of a mechanical bearing, the air being supplied by a small pump in a separate enclosure.

The concept isn't all that different from the old Stanton system of repellent magnets of the same polarity, also creating frictionless "levitation." We see no reason why the new system shouldn't work very well—nor any reason why it should have been developed in the first place, since today's best conventional turntables also work very well, their mundane main bearings notwithstanding. Electrical pumps, on the other hand, seldom give uninterrupted service year after year. We'll have to reserve judgment on this one; meanwhile we can report that the Black Widow tone arm that comes with the Air-Table is a good one—we've been using it for some time. More about this in our forthcoming cartridge/arm/turntable report.

It's also apparent that Infinity, whose original audiophile following was based exclusively on electrostatic speakers, has turned its corporate back on the latter. They now have an integrated line of six Quantum speakers, from \$270 to \$1250 per side, designed around the EMIT (Electromagnetic Induction Tweeter), which their literature declares to be in every way superior to electrostatics. The top-of-the-line Quantum Line Source will be one of the big speakers reviewed in our next issue, so we'll save our comments until then.

Meanwhile we must note, for the record, that Infinity has sent us documentation purporting to prove the unqualified endorsement of their Watkins woofer (which we had pooh-poohed in our first issue) by Dr. Richard H. Small, the world-renowned mathematical electroacoustician at the University of Sydney, Australia. We're willing to admit, even at this point, that Dr. Small appears to take the Watkins woofer seriously, at least from the

academic point of view; to just what extent he endorses it as a working woofer we'll discuss in our QLS report. These controversies are never quite as simple as the controverters would like to make them. (That includes us, too.)

One more thing. The \$1000 Infinity FET Preamplifier is also on its way out. Bascom H. King, whose surprisingly independent and *almost* noncommercial equipment reviews we have long admired in *Audio* magazine, is now working for Infinity and has designed for them a preamp to end all preamps (so they say). This will replace the FET job and launch another of Infinity's honest-to-gosh-fellas-this-latest-one-is-really-the-greatest-and-this-time-we-mean-it marketing efforts. And you know something? This one we're ready to believe.

Koss

Speaker Systems, Headphones

Koss Corporation, 4129 North Port Washington Avenue, Milwaukee, WI 53212.

To be perfectly truthful, we never got around to visiting the several Koss exhibits at the CES, but we know what they were showing and, more important, we have already received samples of a number of their latest audiophile-oriented products. So it's only fair to report here what this highly active company is up to.

The top of the Koss speaker line is the latest version of their full-range electrostatic speaker, the Model One/A. Without giving away the conclusions of our detailed report on it in the next issue, let's just assure you that it's a vast improvement over the original Model One, which was no piece of junk either, although it had its flaws. This is an important speaker design, not to be glossed over hastily.

There's also the new Koss ESP/10 electrostatic headphone system, whose avowed purpose is to supersede the Stax SR-X Mark 3 as the audiophile's gold standard. We have received one for testing, but have no conclusions to report as of this writing.

Another Koss development that has attracted our attention is their new CM line of

dynamic speaker systems with (hallelujah!) scientifically aligned vented boxes. It seems that Koss had the colossal good sense to hire Dr. Robert Ashley, one of the world's leading mathematical authorities on drivers and enclosures, to help quantify the woofer design parameters in the CM systems. This automatically removes Koss from the cut-and-try category, where 99 out of 100 speaker companies are floundering, and gives them the capability to obtain precisely the kind of bass they want in each model. (See also our sub-woofer report in the last issue, where we commented on this very problem in considerable detail. We should have mentioned Koss as one of the few companies that have seen the light, but we hadn't heard about the CM line at the time of writing.) We have a feeling that the top CM model, the five-driver CM 1030, may turn out to be a system of audiophile caliber.

We're tempted to say, "Congratulations, Koss"—but then why should a professional outfit be praised for doing their job the only right way possible? Besides, a lot of things can go wrong between the theory and the execution. Only a test will tell.

Linn Products

Turntables, Speakers

Linn Products Ltd., 235 Drakemire Drive, Castlemilk, Glasgow, Scotland G45 9SZ; distributed in the U.S.A. by Audiophile Systems, 5750 Rymark Court, Indianapolis, IN 46250.

We're probably the only audio journal that hadn't been exposed to the Linn Sondek turntable comparison test long before this year's CES, but since we *were* exposed to it there, we'll throw in a few quick comments on it.

In this A-B comparison (devised by Ivor Tiefenbrun, the cantankerously amusing president of Linn), the belt-driven Linn Sondek LP12 is matched against a Technics SP-10 direct-drive turntable (the gold standard of the direct drives). Same record, identical car-

tridges, identical tone arms. In fact, since the Keith Monks arms used can be lifted right off their pivots and swapped, each cartridge and each tone arm could be listened to on either turntable. We can report without hesitation that the Linn Sondek sounded better under all circumstances; it was subtly but unmistakably more transparent, more detailed, more delicate and open on top, as well as lower in apparent surface noise. Of course, this still wasn't a completely controlled, all-other-things-being-equal test. The turntable mats were different, for one thing; the SP-10, which doesn't come with an integral base like the LP12, was mounted differently; the location of the SP-10 could have been more sensitive to mechanical feedback than that of the Linn Sondek a few feet away; and so on. So the conclusion isn't necessarily that "belt drive is better than direct drive," as has been vulgarly suggested, but merely that the Linn Sondek, as demonstrated, is a better total system than the SP-10, as demonstrated. We have a sneaking suspicion that the Technics people, if given a chance, could mount the SP-10 and the Keith Monks arm in such a way that the differences would be wiped out; on the other hand, it's perfectly true that the Linn Sondek was demonstrated exactly as it comes out of its carton, so it's undoubtedly a hell of a good turntable.

We had an interesting conversation with Ivor about his engineering philosophy, which we can sum up as "don't fight city hall." (Our summary, not his.) In other words, if a certain element in your system is, say, only 98% perfect after you've done all the right things, don't fight for that last 2%—you ain't gonna win. Rather, make the 2% imperfection irrelevant by working around it, so that it doesn't appear in the net output of your system. For example, nobody can make a totally vibrationless turntable motor, so instead of trying to push motor design to its theoretical limits, just make sure that what little vibration there is never gets to the stylus.

He claims that the new Linn Isobarik speaker system (\$859 per side) is also an embodiment of this philosophy; since both he and the product literature seem to somewhat evasive about the design details of the speaker, we have no opinion to offer. The sound in the exhibit was okay but certainly not sensational. Which, for the umpteenth time, doesn't prove anything.

Mark Levinson

Preamps, Crossovers, Power Amps

Mark Levinson Audio Systems Ltd., 55 Circular Avenue, Hamden, CT 06514.

The charm of Mark Levinson is his obliviousness to the world of average audio slobs with their pathetic little \$4000 stereo systems. Mark listens mostly to 30-inch-per-second, ¼-inch-per-track master tapes recorded with Bruel & Kjaer laboratory microphones on a modified Studer A80 deck (modified because the original electronics didn't suit him). In his perspective, people with Dahlquists, Ampzillas, Nakamichis and suchlike equipment become vague, faraway figures of need, like the incomeless families of Appalachia. You sense this difference in scale and tone as soon as you walk into a carefully prepared MLAS demonstration, so none of the usual criteria apply.

The new product demonstrated in the Mark Levinson exhibit was their ML-2 power amplifier, a pure class A *mono* unit on a huge chassis with giant heat sinks, rated at 100 watts into 2 ohms, which is a much better indication of its actual "juice" capability than its 25-watt rating into 8 ohms. In other words, it can deliver over 7 amperes when called upon, even though it won't put out much over 14 volts. It's not a puny amplifier, contrary to early reports.

The front end of the ML-2 is apparently very similar to the superfast high level (line driver) stage of the revised JC-2 preamp (which, incidentally, has been renamed the ML-1, without further changes), and the output stage is absolute, unqualified class A without any current-saving tricks, wrinkles or shenanigans. The damn thing draws 400 watts from the wall socket at all times—and \$1750 from your bank account if you decide to buy it. That's \$3500 a stereo pair—and more in a biamped or triamped installation, which is what the typical ML-2 buyer will be likely to have. Oh yes, the power supply has about a farad's worth of capacitance in it (1 farad = 1,000,000 microfarads). These people don't fool around.

Just by looking at the ML-2 and analyzing its design philosophy, one can't think of a single reason why it shouldn't be the world's most accurate power amplifier. It has wide open-loop

bandwidth and low feedback (you don't need much with pure class A), so it must be quite free of slewing-induced distortion. The slew rate is at least 100 V/uS, unsurpassed by any other power amplifier in current production known to us. Nothing has been spared to provide totally linear amplification into any foreseeable load—and to hell with conventional practicality, philistine common sense or affordability. It's the kind of thinking that used to be typified by Ettore Bugatti. Not that we think the ML-2 is a high-profit item, mind you. It's made with costly, reliable parts and should last a lifetime.

We haven't mentioned the sound yet because we can only discuss it in a certain context. That context is the HQD System, the speaker array used in the MLAS exhibit. We had heard it briefly once before the CES and once again since then, at considerable length, so we have a pretty good idea of its capabilities. HQD stands for Hartley-Quad-Decca, since each side of the stereo setup consists of a 24-inch Hartley woofer, two Quad electrostatics stacked in parallel, and a Decca ribbon tweeter (slightly reworked, with the horn removed). The crossover frequencies are 100 Hz and 7 kHz, via two Mark Levinson LNC-2 electronic crossovers, each feeding three ML-2 power amps: one for the Hartley, one for the double Quads, one for the Decca—three in all, i.e., six in a stereo system. When you add a Mark Levinson ML-1 preamp to provide an input for all this, you've got something like \$15,000 invested in MLAS electronics and you haven't even paid for the speakers yet (they're only ordinarily expensive, like \$1860 for the four Quads, etc.). With a good turntable, arm and cartridge, plus Mark Levinson's special frames for the stacked Quads, we're talking about a \$20,000 stereo system, give or take a few bucks—and that's without a tuner or tape recorder! (This kind of thing makes certain people very angry and indignant, but it amuses us to observe that these are generally not the moralistic antimaterialists, who simply don't want any part of the scene, but rather the most covetous, status-seeking audio freaks, who are dying to own such a system but just can't or won't pay the price.)

Okay, the sound. Here goes: the best we've ever heard. Anywhere. The HQD system is more revealing, but also more musical, than any other known to us. Talk about clarity, freedom from all stress, lack of coloration,

naturalness, detail—it's all there. Engineering discussions become irrelevant, even slightly embarrassing, in the presence of this system; the music takes over and one becomes involved in one's records and tapes, as if they were being heard for the first time. (Even though their flaws are mercilessly revealed—but forgivingly, without excessive irritation. That alone is a remarkable experience.) The question is—is it the ML-2 power amplifier? Or is it the ruler-flat tweeter (essentially the old Kelly ribbon)? Or maybe the legendary midrange of the Quad, with the not-so-great top and bottom octaves removed? According to Mark Levinson, it's all of those factors combined—and any substitution of components is instantly audible, he claims. The only part we aren't totally sold on is the Hartley woofer in its unbelievably large, custom-built enclosure. We have a suspicion that it can be equalled or surpassed by less cumbersome and more sophisticated means, although the bass of the HQD sounded awfully good—especially considering that this is where Mark cheated a little, since even he doesn't have six ML-2's yet. He drove the two Hartleys with a Bose 1801.

All we can tell you is that, returning to our humble abode, where we had our choice of about a dozen sophisticated speaker systems, we were quite unhappy and started making phone calls about Quads and such.

Naim Audio

Preamps, Power Amps

Naim Audio Ltd., 11 Salt Lane, Salisbury, Wiltshire, England SPI 1DT; distributed in the U.S.A. by Audiophile Systems, 5750 Rymark Court, Indianapolis, IN 46250.

This line has a formidable underground reputation, but the equipment is so rarely seen in this country that our first exposure to it was at the show. Even there we couldn't really judge it sonically (same old story), but we had a chance to talk to Julian Vereker, the Naim circuit designer, who has some interesting ideas.

The key phrase in Julian's engineering vocabulary is "loss of information." He believes that excessive processing of the signal within the chain of amplification, regardless of

the fantastic specifications achievable that way, will result in an audible loss of musical detail. This is not quite the same thing as the currently fashionable concern over the unmeasurable but audible irritations produced by certain circuit techniques; Julian believes that there exists also an unmeasurable but audible superiority in the musical clarity of certain very simple (but dynamically stable and generally unflappable) preamp and power amp signal paths. The circuits he uses aren't new, he explains—just correct. And a lot of golden ears of unimpeachable repute (especially Europeans) swear by the name of Naim.

The current top-of-the-line models, shown for the first time at the CES, are the NAP 250 power amplifier (70 watts per channel into 8 ohms, \$1499) and the NAC 32 preamplifier (with moving-coil facilities, \$789). There's a possibility that we can review them in the not-too-distant future.

Promethean

Phono Cartridges, Speakers(?)

Promethean Audio Products, Las Vegas, Nevada.

Bill Seneca is an audio designer who doesn't fit into any category. He is not an engineer, but he is more acutely aware of the laws of physics than most engineers. He is not a musician, but he listens with greater discernment than most musicians. He is not even a manufacturer, but his chief product, the Promethean cartridge (an unauthorized modification of one of the lowest-priced Grado cartridges—unauthorized by Joe Grado, that is), has made a mark among audiophiles. He didn't even have his own exhibit at the show but used the Van Alstine suite as his headquarters, where two of his products could be heard from time to time.

One of these was the Promethean cartridge itself, which sounded very smooth, but since we're planning to test it in the near future we'd prefer to save our detailed comments on it until then. The other product (the real reason for this report) was, believe it or not, *part* of a speaker system. A single driver, about four inches in diameter or possibly a little bigger, was

demonstrated in an enclosure barely large enough to house it, mainly in order to conceal its construction details (according to Bill Seneca), since it's supposed to sound best out in the open, without any enclosure. The low frequencies in the program material were rolled off below 100 Hz so as not to overload the little speaker, which is designed to be used with a woofer. Furthermore, since only a single sample was available, the demonstration was in mono. Despite all these handicaps, the little speaker completely wiped out a Magnepan standing next to it, even though the latter was the best-sounding Magnepan we had ever heard. The Promethean prototype sounded utterly smooth, resonance-free and natural, with a genuine you-are-there quality on female voices and solo instruments. (Symphonic material or hard rock was of course out of the question without a woofer.)

Bill Seneca claims that the whole trick is to eliminate *all* parasitic resonances *totally*, not just almost, and to get the response to be dead flat, not just flat in the usual manner of speaking. This, incidentally, is his basic approach to the cartridge as well. Frank Van Alstine, who isn't exactly unfamiliar with high-end speakers, reports that the speaker system with the lowest coloration known to him is the *complete* Promethean, of which this driver is the top section. The woofer is apparently equally neutral in sound. There's only one problem. The complete system doesn't really exist. The one heard by Frank Van Alstine is the only one that was ever built. And Bill Seneca doesn't have sufficient confidence in the market demand for a completely uncolored speaker to start a new speaker business, just on the say-so of a few enthusiasts.

Maybe somebody should twist his arm.

Pyramid 'Metronome'

Speaker System

Pyramid Loudspeaker Corp., 71-07 Woodside Avenue, Woodside, NY 11377.

The Metronome speaker system is the creation of Dick Sequerra, the original founder of The Sequerra Company and the man who conceived the Sequerra Model 1 tuner. That alone should tell you what his new loudspeaker

company is all about. Dick isn't interested in anything but the best that can be made.

So, at the old address of his old company, which moved out long ago and which he no longer has anything to do with, Dick is trying to make the world's best speaker system out of conventional moving-coil drivers. That's a tall order (in his shoes we would have gone the route of force-over-area drive systems, such as electrostatics and ribbons), but the CES demonstration of the Pyramid 'Metronome' proved that he is pretty much on target.

The Metronome actually looks like a four-foot high traditional metronome, wide at the base and tapering sharply to an almost pointed apex. This shape, as it turns out, is not an image-building promotional gimmick (although it works rather nicely that way) but a smart way to minimize boundary diffraction effects, reduce standing waves within the cabinet and optimize the stereo radiation pattern for the most precise imaging. That, in fact, is the most immediately evident virtue of the speaker: the stereo image is uncannily stable and defined. You can step right or left, move back and forth, even walk *between* the two units—the stereo image stays put. You don't need to have your head clamped in a vise to position your ears in the right place, as you do with too many expensive systems.

As for the overall sound quality of the Metronome, it depends on whom you talk to: those who heard it early during the show or those who heard it toward the end. Initially, there were amplifier and record player problems in the Pyramid exhibit; on the last day of the show, when we went back for a farewell listen, everything had been straightened out and the sound was fantastic. Stupendous dynamic range, for one thing; really tight, accurate bass out of the 14-inch subwoofer; exemplary smoothness and lack of coloration throughout the range covered by the other three drivers. A very serious effort to eliminate parasitic resonances seems to have been made here, as well as a significant step toward the reduction of time smear. If our initial impressions hold up under further scrutiny (we're waiting for a pair to wring out and review), the Metronome could easily be a classic.

As a matter of fact, with Sequerra's name behind it and a \$2200 price tag on it (that's for a stereo pair with stands), anything less than a classic would be a disappointment.

RAM

Power Amps, Preamps, Phono Cartridge

RAM Audio Systems, Inc., 17 Jansen Street, Danbury, CT 06810.

RAM is the monogram of Richard A. Majestic, who used to be the M of the former C/M Laboratories (now Audio International). That should tell you he is deeply steeped in the audiophile tradition, and the new company he has put together creates the impression that it's going places.

The first RAM product, designed by Dick himself, is the RAM 512 power amplifier, a 180/180-watt all-out design that will be reviewed in our next issue. It's the current flagship of his line at \$1150. At the CES, his new RAM 200 preamplifier was seen for the first time in prototype form. This is an unusually sexy \$1050 unit, with a huge 34-position click-stop attenuator (68 positions with the aid of a -20 dB range switch—a veritable Kama Sutra of a level control!) and a circuit that promises the best of both worlds: all inputs differential FET; all outputs complementary bipolar. You can even connect an external processor for programmable operation. We can hardly wait to get our hot little hands on this one, especially since the sound in the exhibit wasn't conducive to an evaluation.

Perhaps the most interesting RAM product isn't actually made by them but obtained from Matsushita in Japan and packaged (as well as quality-controlled) by RAM for U.S. distribution. It's the RAM 9210SG record transducer system, consisting of a unique semiconductor strain-gauge cartridge (different from the Win and the JVC) plus a power source (a little black box). The latter provides a 2.5-volt output, so you can plug it into the "aux" input of your preamp or even directly into your power amp, as long as there's a volume control somewhere along the line. The RIAA equalization is accomplished mechanically, within the cartridge itself; it's supposed to be a relatively easy matter, since a strain-gauge transducer is an amplitude (not velocity) device and the RIAA characteristic isn't all that far from constant amplitude.

We have a sample of the RAM cartridge but haven't had a chance to test it yet. We should be able to say something reasonably definitive about it in the next issue. Meanwhile, a number of golden-eared friends report that it's seriously competitive in sonic performance with the Denon DL-103S and the EMT Model XSD 15, our current favorites. We're taking that with a grain of salt until we can convince ourselves, but it's a highly intriguing situation. For example, the Threshold 800A power amplifier has its own input level controls. If we went in there directly, eliminating our Mark Levinson preamp . . . how does that grab you?

In a brief discussion with Dick Majestic we gained the impression that the RAM cartridge, which does *not* use the expected V-shaped resolver system for coupling the stylus to the transducer elements, is therefore relatively insensitive to the "needle drag distortion" effect discussed in Mitch Cotter's devastating letter in our last issue. That alone should make it competitive with the finest existing cartridges, other things being equal.

Of course, other things are never equal. They're much more likely to be better or worse. For the sake of this exciting new development, we hope they're better. In which case, look out, all you preamp makers—including RAM!

Rappaport

Preamps, Crossovers

A.S. Rappaport Co., Inc., Box 52, 530 Main Street, Armonk, NY 10504.

The featured item here was the Rappaport preamplifier, which is still news to a lot of audio people but not, of course, to readers of this publication. It didn't sound as good as we happen to know it does, on account of the usual hotel-suite setup difficulties. (A typical hotel demonstration is like a French chef trying to cook a gourmet meal at a roadside hamburger stand.)

Shown for the first time was the new Rappaport PBC-1 "passive biamplification crossover." It's a simple box without any electronics that goes between the preamp and the two power amps, splitting the spectrum at any frequency you happen to choose with 6-dB-per-octave slopes. If your speakers don't need to be crossed over more abruptly, this is the theoretical ideal—a distortionless and phase-coherent crossover, by definition. We've been using something very similar to it with good results (see also our subwoofer report in the last issue). The PBC-1 is supplied with plug-in boards that provide the correct network for any crossover frequency and amplifier input impedance you specify. There are also level controls for both the upper and lower channels. The price is \$175, which is a lot cheaper than the elaborate electronic crossover you may not need. But don't take anything for granted; some situations call for 18-dB-per-octave slopes or even 36-dB-per-octave.

There's also a Rappaport power amplifier in the works (although there was no evidence of it at the show); just based on what we know about Andy Rappaport's design philosophy, we predict that when it comes out some sacred cows will again be stomped into the ground—if we may mix our metaphors.

SAEC

Tone Arms

Audio Engineering Corp., Tokyo, Japan.

The SAEC WE-308 arm is becoming visible in a number of high-end audio stores in this country and was also on display at the CES. It's expensive (\$195 the last time we looked), made to extremely close tolerances with double knife-edge vertical pivots, superbly finished, and just generally a beautiful arm to look at and to handle. The only thing we've seen that seems to be as well made, or even better, is the Breuer Dynamic. What's more, a super version of it is

just being introduced, with *jeweled* knife-edge bearings and a very special headshell material. For even more money, of course.

And all that is completely for naught, alas. The basic geometry of the arm is so perversely wrong that it can't be considered a high-fidelity device. The offset angle is so small that it's virtually impossible to mount the cartridge correctly, for optimized lateral tracking error, even by completely ignoring the instructions and twisting the cartridge inward as far as it will go in an attempt to increase the offset angle. In some cases the angle will still be too small, since the design isn't even close to the correct formula. It's not far from being a *straight* arm. Obviously, the SAEC people have never heard of the mathematical solution to the problem of minimizing the distortion index (i.e., the tracking error divided by the groove radius), a solution that was first described in the literature in 1941 and specifies that between the outer groove and the inner groove the tracking error must go through two nulls and three maxima. (See also the article on tone arm geometry in our first issue.) The promotional literature distributed at the show also indicates that SAEC doesn't understand the relationship between overhang and the distortion index, so that the whole sales pitch degenerates into gibberish.

Too damn bad. A single design change that wouldn't cost a penny could make the SAEC into one of the most desirable tone arms ever made.

Symdex

Speaker Systems

Symdex Corporation, PO Box 927, Framingham, MA 01701.

This small new company is obviously out to make the best speaker system regardless of size or price (at least in their top-of-the-line model) and they don't seem to have any prejudices as to how they get there. Said top-of-the-line (called the Symdex RST, which stands

for Reference Standard Transducer) is loaded with offbeat goodies—like a six-element electrostatic array for the highest frequencies (above 9 kHz) and a subwoofer used only between 20 and 50 Hz. Since the design is still supposed to be in a state of flux, we won't go into it more deeply, especially as we've been promised one for testing when it's ready. But there were a few tantalizing indications at the show that this might be—just *might* be—a system true to its name, a genuine reference speaker. Unfortunately the demonstration was plagued by typical CES problems, including RFI and secret diddlers with the crossover controls. (Who the hell turned down the tweeter level? Don't let anybody back there, please! Etc.)

The line also includes several lesser speakers, each designed with naturalness, openness and imaging as the avowed criteria. This is definitely an audio purist company, the kind we need more of, and we'll be watching them with interest as they get their act together.

Symmetry

Crossover, Power Amp, Subwoofer

Symmetry Audiophile Systems, represented by Audio Sales Associates, 511 11th Avenue, San Francisco, CA 94118.

Here's food for thought. John Curl, the itinerant consulting engineer and circuit designer, a close associate of the famous Matti Ojala, the man responsible (at least in part) for nearly every Mark Levinson design until very recently, has taken up with a new company. He is pouring everything he knows into a number of new products. It can't be bad stuff, can it?

That's as far as we can go. We couldn't hear the stuff, since it was a dry (i.e., soundless) exhibit. We did *see* the Symmetry ACS-1 electronic crossover, and it looks very neat. It's claimed to be "transient perfect," meaning that it can pass a perfect square wave in the crossover region, a feat never before possible

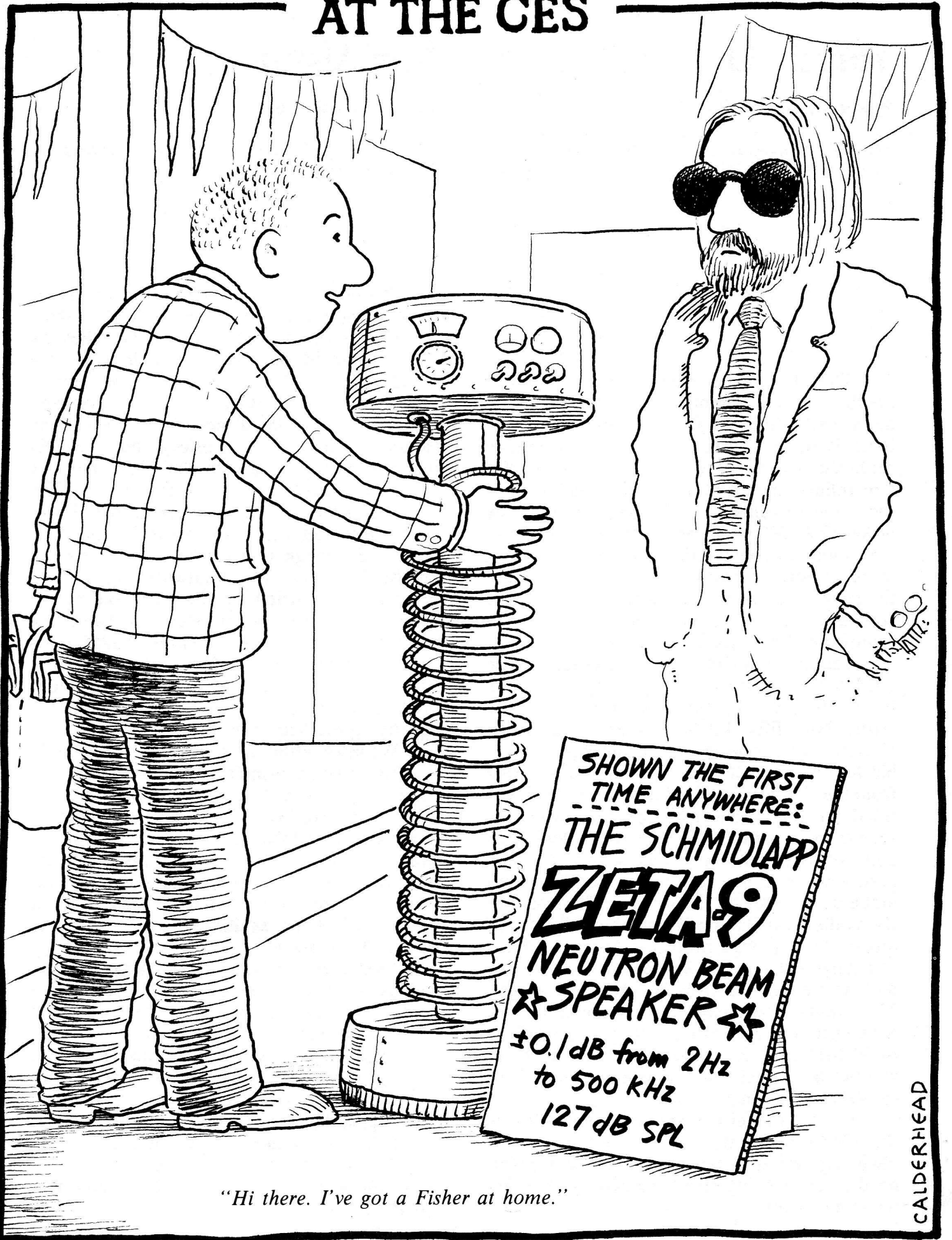
with active crossovers according to John Curl. The circuitry is built around very fast FET input modules; the crossover frequency is variable between 40 Hz and 1.6 kHz; the price is \$450, which certainly isn't in the Mark Levinson category. Very interesting.

John Curl's alleged masterpiece, the Symmetry JCA-1 power amplifier, wasn't even shown, only announced. Its slew rate is claimed to be 250 V/uS (a world's record to our knowledge) and feedback is only 26 dB, so that TIM is certainly minimized. Power output is rated at 150 watts into 8 ohms, and the amplifier's current capability is said to go up to 30 amperes. The circuit configuration is reported to consist of a unique V-FET front end and an equally unique bridged output. On paper this reads as if it could be the world's best power amplifier, but of course amplifiers aren't for reading. First, let's see it. Then, let's hear it. Even if we liked the book, who knows how much we'll like the performance? (The price has been announced at \$1100.)

Symmetry also has a subwoofer design, the JM-1W, which is claimed to go down quite flat to 28 Hz using nothing more than a 10-inch Hartley woofer in a relatively compact enclosure. This we've got to test—and we've been promised one for review.

We had a chance during the show to have a fairly long chat with John Curl, and there was one thing he said that impressed us in particular. He said that the new Mark Levinson ML-1, the recently revised (and renamed) version of his original JC-2, is the better preamplifier, especially in the reproduction of depth. Since the preamp was revised after he had ceased to be associated with MLAS, this proves to us that the man isn't an egomaniac like so many other star-caliber audio designers. And that speaks well for his objectivity in his current work.

AT THE CES



"Hi there. I've got a Fisher at home."

CALDERHEAD

Threshold

Power Amps, Preamp

Threshold Corporation, 1832 Tribute Road, Suite E, Sacramento, CA 95815.

The Threshold 800A class A power amplifier, one of the minor legends in high-end audio and scheduled for a review in our next issue, is already on its way out. It will soon be replaced by an 810 model, a somewhat streamlined and more practical embodiment of the same principle. Same basic circuit, same power (200/200 watts into 8 ohms), higher slew rate, modular construction for easier servicing, more austere cosmetics, no meters. Whether the change serves the consumer or merely the company remains to be seen. We expect no significant difference in sonic quality.

The new item shown by Threshold at the CES was a direct-coupled preamplifier that's flat to 50 MHz. No, that's not a typographical error. Not fifty kilohertz—fifty *megahertz*. Nelson Pass, the designer, obviously has a morbid fear of the time and phase effects resulting from the slightest bandwidth limiting. He is entitled to this aristocratic phobia, which is shared by a number of other technologists of high repute, but some recent practical experiences we've had (see under Verion below) make us skeptics on the subject. The sound in the exhibit (via Dayton Wrights) was limited in quality by cartridge problems, so that subjective judgment must be suspended until we can test the preamp ourselves. As sheer technology, it's a mind-blowing feat. What about RF interference, you ask? Since there's no roll-off up to 50 MHz, the RF signals pass right through without being rectified and detected, according to Nelson. Fascinating.

We like the feisty engineering mentality of this young company; at the same time they're obviously serious listeners, so their sound is in no danger of being straitjacketed by their interesting theories.

Van Alstine

Power Amp, Preamp

Van Alstine Audio Systems, 2202 River Hills Drive, Burnsville, MN 55337.

It's quite obvious that Frank Van Alstine wasn't aware of the existence of the Threshold preamp discussed above, since he launched the Van Alstine Model One at the show as "the world's first and only direct-coupled linear-phase stereo preamplifier." It's the same concept, same rationale, a more austere execution (hence a much lower price), but severely bandwidth-limited next to the Threshold: the Van Alstine is flat only to a few megahertz—not even 10, let alone 50—a veritable scratch filter by comparison. Still, it's wideband enough to have been demonstrated amplifying a color TV signal without color distortion, a cute little trick the Threshold people probably wish they had thought of. As for the relevance of this kind of super bandwidth to accurate sound reproduction, our skepticism anent the Threshold preamp expressed above (and documented under Verion below) applies equally to the Van Alstine.

We must admit, however, that the sound in the Van Alstine exhibit was outstanding (the Model One was feeding the Van Alstine Double 400 power amplifier, a really successful Dynaco modification, which in turn drove a pair of Magnepans), so that we have no reason to question the preamp's excellence, whatever explanations are offered for it. What's more, a number of other exhibitors were using the Model One successfully and spoke approvingly of it. We've been promised a sample for testing and, as one audio salesman of our acquaintance used to say about the new stuff, "we're waiting for it with alacrity."

Incidentally, you ought to take a look at the Van Alstine literature on both the preamp and the power amp. It's detailed, informative, amusing, and has the ring of sincerity. Some of the snake-oil promoters in the audio industry ought to consider using the same copywriter—except we suspect it's Frank Van Alstine himself.

Verion

Cables, Phono Transformer, Filter

Verion Audio Inc., 75 Haven Avenue, Mount Vernon, NY 10553.

This is one of the most interesting small companies in the business. Instead of trying to make another “world’s best” preamp, power amp, speaker or whatever, they step in where there’s an unfilled need and make peripheral equipment that has no serious competition.

Thus the Verion Triaxial audio cables have become the gold standard of high-end audio in a matter of months. They’re ridiculously expensive, but they push noise rejection techniques to the theoretical limit. If you still have RFI or ground loops after you’ve installed Verion cables as instructed, you’re in trouble, fella.

The Verion MK1 transformer for moving-coil cartridges, reviewed in our last issue, is another unique product that we feel is still incompletely understood. Totally noise-free MC reproduction, which this transformer makes possible in conjunction with the best preamps and MC cartridges like the Denon or the EMT, differs psychoacoustically from slightly—even very slightly—noisy reproduction. Some people prefer the latter, calling it more open, more dynamic. But long-term use of the Verion transformer is an education, highly recommended despite the unit’s mind-blowing 50% price increase to \$375.

But the most educational Verion product (educational in the eye-opener sense) is something more recent, shown for the first time at the CES. It’s called the NF-1, which stands for noise filter, but that’s a very inadequate description. What the NF-1 really is can be summarized as a time-compensated high-pass-filter/low-pass-filter combination. It goes between the preamp and the power amp, and it does absolutely *nothing* to the signal from about 18 Hz to 35 kHz. Outside these limits the signal is very sharply attenuated. The time compensation removes, within the bandpass, all the undesirable time-domain effects of bandwidth limiting. The filter was originally conceived as a passive device; as it evolved it acquired an active buffer stage, which we are

convinced is sonically transparent and the reasons for which we’ll discuss when we review the NF-1.

The only thing we want to go into here is the basic rationale of the filter. Why design and promote such a device? Mitchell Cotter, Verion’s awesomely knowledgeable technologist, believes that real-world power amplifiers, regardless of all claims and theories, are extremely unhappy with superfast, superhigh-frequency inputs, dumping garbage into the audible range under such provocation. (See also the Rappaport letter in our first issue!) Furthermore, the entire audio chain is badly—and unnecessarily—stressed by subsonic inputs. Preamps are spewing out fragments of such high and low-frequency material at all times, of course (with their DC-to-light bandwidth—right?), without any contribution to the music. Ideally, explains Mitch, the NF-1 type of filtering should be part of every sophisticated power amplifier. But it just so happens that it isn’t. That’s why he is asking you to plunk down \$300 for his little blue box.

The question is—is he right or wrong? We’ve had a chance to play with the NF-1 under our own roof for just a few hours (our review sample hasn’t arrived yet), and our initial impression is that he is right, in spades. Used between the Mark Levinson ML-1 and either a Bryston 4B or a Threshold 800A, the filter added an extra measure of transparency and detail in every case. For example, cymbal crashes lost their slightly noisy “ksh-sh-sh” coloration while retaining the most delicate overtone structure and ambient “air.” At this early stage of the game, we’re believers. Our NF-1 review should be interesting when it comes, which will be soon.

But when will everybody in the audio industry get together on these vital issues and work toward the same goals? Why do we have to pay extra for both bandwidth extension *and* bandwidth limiting?

Watson Laboratories

Speaker Systems

Watson Laboratories, 2711 Rena Road, Mississauga, Ont., Canada L4T 3K1.

The three speaker systems introduced at the CES by this new company (at \$825, \$1225 and \$1729 a pair) have been designed by "Wm. Wright" according to the literature. Who the hell is Wm. Wright? Could he be Mr. Michael William Dayton Wright, the very same Mike Wright with whom all Dayton Wright owners pretend to be on a first-name basis? You bet your bippy. That's the man. (A quadruple name provides many disguises. How about Wm. Dayton?)

Obviously Mike Wright's break with his old company leaves him under some kind of constraint on the use of his name in a competitive enterprise. We, however, are under no such constraint, and the obvious sophistication of these new speakers can be explained only by the presence of a major guru.

Our impression is that Mike is almost relieved that he is no longer locked into the position of having to defend the inherent superiorities of electrostatic speakers, with all the unmentionable problems so few makers can deal with, and that he wants to show the world

he can do equally well with moving-coil drivers. He really went to town on the Watson systems. The woofer enclosures are filled with gas, which seems to be a Wright hallmark; the upper and lower midrange elements operate as dipoles; impulse response and phase coherency are claimed to have received particularly devoted attention. The design rationale of the Watson speakers covers several pages in small print, so that it's beyond the scope of this report; we're hoping to test them, of course, if this company proves to be a viable entity.

Meanwhile we can report that the speakers, especially the top-of-the-line Model Ten, seem to have extraordinary depth perspective and generally sound like highly accurate transducers. Unfortunately, the large room in which they were demonstrated soaked up all frequencies above 8 kHz or so, a phenomenon that audibly affected live sounds in the room as well. As far as it could go, the demonstration was very promising.

Nice work, Mike (oops, William).

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Press-Time Notice to Subscribers

At this moment, it appears reasonably certain that our next issue (Volume 1, Number 4: July/August 1977) won't be mailed out before the last day of August and may even be delayed until a week or two after Labor Day.

Please don't inundate us with where-is-it letters. We appreciate your insatiable appetite for our reviews, but writing to us can't possibly make us work faster; in fact, processing such mail is just an extra chore that slows us down. We're turning out the work as fast as we know how; what's more, we'll get out our promised six issues before the end of the year—but just.

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The Audio Critic

In the next issue:

We resume our usual format and bring you the test reports originally announced for *this* issue plus our regular features.

Our speaker survey includes heavyweights like the Acoustat X, Dayton Wright, Infinity QLS, Koss One/A, Ohm F and others, as well as the DCM Time Window, Rogers minimonitor and other unclassifiables.

Our power amplifier survey continues with Bryston, Futterman, RAM, Threshold, and other contenders.

We take a systems approach to the cartridge/arm/turtable combination (the only approach that gets you anywhere).
