

stereophile



The Original Independent Magazine for the Audio Perfectionist

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AUDIO VERITY: A recording carefully made to sound absolutely realistic through a studio monitor can only sound realistic through that studio monitor.

Credibility Gap

To audiophiles who are aware that their household line voltage changes under varying loads, and have observed the absolutely fantastic differences in the sound of their system when the next-door neighbor turns on Junior's night light, it may come as a surprise to learn that there are folks out there who think you're full of crap. That's right Virginia, they don't think you can really hear all those things you pretend to hear. (You are only pretending, aren't you?) They can't hear all those things, so how can you? Well, sometimes they can. They'll even admit that. But those tiny little differences are so trivial that they don't matter no more than a fruitfly's fart. That's the word in scientific circles these days. Or haven't you been following the "establishment" audio press lately?

Of course, we can hear all those little differences that none of those big measuring instruments

can detect, can't we. Of course we can! And to us, anything we can hear is significant, not -- we have to admit -- because those things are all that conspicuously audible, but because we care about reproduced sound, and when you care, everything is significant. But perfectionist audio is in the doghouse these days. Not because we are hearing thing that can't be measured, but because we can't prove it. That doesn't much bother people who already embrace astrology or numerology or any of the world's bewildering selection of theisms, but it does bother scientists. And while critical listening to reproduced sound may be dismissed as an appreciation, like the finer points of art connoisseurship, subjectivity is of no value to the person who designs amplifiers or who relies on test equipment for evaluating them.

Unfortunately, subjective testing as a means of evaluation has thus far refused to lie down and

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shut up. There are differences between the sounds of different competing audio products, those differences are consistent, and they are not all reassuringly explainable by any known measurements. The fact that some people whose hearing seems normal in all respects are unable to hear those differences casts doubts on the veracity of those who claim they can. And audiophiles, for their part, make matters worse by imbuing their personal observations with those qualities of Ultimate Truth usually reserved for the most fundamental and time-tested laws of physical science.

One reason for this is because most audiophiles are insecure (and why not, considering how tenuous are some of the differences we hear?), and thus tend to hold on for dear life to anything that looks like a hitching post. Just one example of this, out of many we can think of without even trying, is the very compelling temptation to assume that every component in one's system except the one under scrutiny at a given moment is worthy of our confidence. This leads inevitably and with no conscious effort whatsoever to the conclusion that a new preamplifier, inserted in the program chain in place of the previous one, is better if it *sounds* better and worse if it *sounds* worse. The fact that the new preamp may in fact have a hot-as-hell high end that better compensates for high-end dullness in one's cartridge, power amp or loudspeakers than did the more-neutral preamp that was being used before does not discourage your average audiophile (nor indeed your average "subjective equipment tester") from making Olympian pronouncements about the relative merits and demerits of that new preamp with a confidence one might expect from a Bureau of Standards assessment of the accuracy of a butcher's scale. The audiophile's

observations may be valid; it is just that he lacks the justification for assuming that what he observes has enough significance to be of any value to any other living person on this planet. Unfortunately -- and probably because critical listeners still have little in the way of measurements to back up their observations -- a great deal of that kind of completely meaningless observation has been adopted by the audiophile community as unquestioned doctrine, to be trotted out and belabored every time someone has the audacity to suggest that our precious audio field could benefit by a little more science and a little less subjectivism. But like it or not, those critics of "subjective testing" have a point, and it is a point we have to face up to sooner or later. Subjective testing is unscientific, because no one has proven to any scientist's satisfaction that the observations it is based on are related to the real world of actuality.

Mind, you the question here is not whether or not it is possible to assess the performance quality of a component by listening to it. It goes much deeper than that. The point in question is whether we are actually hearing differences that exist, or whether we are in fact psyching ourselves to hear differences where there are no differences. To the scientific investigator, this means not only proving that differences are being heard, but also that there are *objective* reasons for those differences -- that is, reasons which reflect in measured differences. We have not yet made it to Square 1!

The "establishment" audio press -- *High Fidelity*, *Stereo Review*, and their peripheral publications such as *Pop Electronics* -- has recently abandoned its former stance of open-mindedness on such matters and has mounted a campaign to discredit all "observa-

tions" which cannot be correlated with universally-accepted measurements. I can only speculate on their motives for this -- whether they see it as an aid and comfort to most of their advertisers, whether it is a means of bolstering reader confidence in their equipment reports (a confidence which has been getting shakier in recent years) or whether they are convinced that no one can hear anything they can't hear is open to question, but no answers can be forthcoming. Like the policy decisions of the White House, big-business policies are made and executed without incurring any feeling for the need of explanation or justification.* It seems quite clear though, given the generally high level of intelligence among the people who edit those magazines, that the reasons for their recent editorial thrust must have been business-type reasons rather than scientific-type reasons, for when large numbers of people experience certain subjective reactions to something -- whether these reactions are based on legitimate external simulations of the sensory system or are purely imaginary -- it does not serve science any better to dismiss

* I am reminded of a discussion about editorial restrictions that I had a few years ago with the technical director of one of the above-mentioned establishment magazines, during which he said "Nobody tells me what to write. I write what I want to write." We were interrupted by more-pressing business before I had a chance to point out to him that he would never have been appointed technical director if he had shown any inclination to write things the publisher didn't want to see in his magazine. In business circles, that is called "Placing the right man in the right job."

those observations out of hand than to question the observations because they are made without "proper scientific controls."

When these audio writers tell us that they can measure anything we can hear, what they are really saying (although none has yet had the temerity to admit this) is that all the meaningful measurements of audio equipment have been devised, therefore any measurements which have not as yet been devised are meaningless. This sounds familiar. Several hundred years ago, the world's scientific community -- such as it was -- declared that everything that man could learn about the universe had already been learned. Not surprisingly, this statement was followed by a couple of hundred years of intellectual stagnation which we now, disparagingly, call "The Dark Ages." It would appear that one of the things those wise scientists had not learned is that people never learn.

The term "scientific controls" is in fact one which crops up with ever-increasing frequency in criticisms of "subjective testing." For those not versed in the weird and wonderful ways of scientific method, this means simply that you can't measure a breeze in a hurricane. Another way of putting it is that, in order to determine that A affects B in a certain way, you must rule out the possibility that something else rather than A is affecting B. One does this by "controlling" the other factors so that the only thing that can affect B is factor A. If B then responds, A is the cause.

For example: Suppose a certain chemical changes from clear to blue when mixed with sodium chloride (table salt, to you) and vigorously shaken in a copper container as the shaker gets struck by lightning. To what do we attribute the change in color? Was it the combining of that chemical with salt, their mutual reaction to the copper of the con-

tainer, the vigorous shaking, the heat or electrical energy of the lightning strike, or a combination of two or more of these things?

The audiophile approach to this question would be to meditate for a while on the possibilities, latch onto a possibility, and decide that that must indeed be the answer. The scientific approach would be to repeat the experiment with "controls." This simply means repeating the experiment, as often as necessary, with all but one of the suspected contributing factors eliminated as factors. To start, we would use a chemically inert container, mix the chemical and the salt without shaking them, and put the lightning on Hold. If there was no color change, we would then shake up the chemicals. If nothing happened we would then add a small amount of copper to the mixture. In other words, each of those original factors would be tried, two at a time, and then three or more at a time, in every combination and permutation, until the color-change occurred. The assertion, then, that such-and-such will cause so-and-so to happen would be considered a scientifically valid conclusion to draw from the experiment.

In audio, the difficulty of conducting such experiments arises from the fact that -- despite the establishment view -- there are no ways of measuring many of the things we hear, and subjective observations alone have no scientific respectability unless backed up by numbers -- that is, by statistics. To say "I can hear such-and-such" will elicit from a scientific mind no more than a noncommittal grunt. You might just as well say you have some unidentifiable tune going through your head. But say that 247 out of 300 listeners were able to tell, without knowing A from B, that they were hearing B 78% per cent of the time, and that scientific mind will begin to take you seriously. Now

you can cite figures, from a controlled experiment. Even Julian Hirsch would have to pay attention to that, even if he also had to report that he was one of that 17.7% who could only tell B from A 77% of the time. But no one has ever tried to conduct such an experiment -- at least, not to the satisfaction of those who make the most claims for their incredible hearing acuity.

Such experiments have been attempted, but somehow the experimenters have always managed to use the wrong associated components ("Those speaker's wouldn't tell them anything!") or the wrong scientific controls ("Sure, it was double-blind, but the switch contacts change the sound more than the preamps do") or the wrong listeners ("Why didn't they get Harry Pearson or Gordon Holt or Peter Moncrieff on the panel?"). I can't speak for HP or PM, but I would be glad to participate in such an experiment. I haven't been asked. Neither, I suspect, have they.

Frankly, I'm not at all sure how I'd come through on such a scientifically incontrovertible listening test. Most such tests rely on A/B comparisons, and my own experience with those has been that I am one of the first to get hopelessly confused and start hearing 12-kHz ringing from the speaker that has no response beyond 9 kHz. All of us true golden ears maintain that it takes prolonged listening, not just a series of A/B switchings, to hear small qualitative differences with any degree of consistency, but I'm not sure how a test might be devised that would meet that criterion. Meanwhile, there is the real possibility of my making a complete ass of myself, by scoring lower on the Pick-Preamplifier-B test than Joe Blow who is deaf in one ear but likes to play the fiddle in his spare time. Imagine what the establishment audio press would do with that!

Perhaps Messrs. Pearson and Moncrief have had the same awful thought. Maybe one of us would have a bad day. Perhaps a touch of sinus trouble, with ringing in the ears. Imagine *Stereo Review* reporting that JGH or HP or PM was the *only* underground-magazine publisher who scored lower on Preamp B than the "norm" of tin-eared untutored listeners. What would that do for our much-touted credibility? Could it be that that's why none of those of us who rely on our ears for equipment evaluations have suggested such a conclusive (?) listening-panel test? Could be.

It is very possible that a person's ability to hear small differences is related, not just to the quality of the listening system, but to his familiarity with it. If this were the case, any listener, no matter how golden-eared, is at a disadvantage listening to *any* system but his own. But if he agrees in advance that the system used for listening tests meets his standards, and *then* then racks up a perception score he's ashamed of, no amount of protestation will save the red face under those layers of egg.

Yet the question must be resolved if the perfectionist-audio field is to advance much farther than its present semi-stagnant state of stasis. We all know that there are indeed audible differences between components which appear to measure identically. We also know that there are people to whom those differences are, truly, insignificant. But there are many audiophiles who honestly can't hear what we hear, as well as multitudes of music-lovers who *can*, and whose record-players could be bringing them far more enjoyment if the magazines they read could admit that the differences they hear are real and not imagined.

Initially, high fidelity held out great promise to lovers of music, as a means for bringing the

sound of great orchestras and opera companies into their homes. That promise has never been fulfilled, partly because of the outrageous prices that "perfectionist" components have been aspiring to, and partly (more recently) because of the rotten image we audiophiles have built ourselves in the eyes of the musical -- as a bunch of wild-eyed fanatics who drool over technically virtuosic recordings of music and performances that are not worth the vinyl they're pressed on. Now the establishment hi-fi press is pressing home its advantage by assuring the people who could best appreciate good sound that mediocrity is good enough, true high fidelity is a waste of money, and perfection is here at last whether you like the sound of it or not.

The time has come when we self-styled golden ears must put up or shut up. What is needed, right now, is a listening test that will prove (or dis-prove, if it works out that way) to the scientific community at large that trained ears *can* hear things we cannot as yet measure, or are not as yet correctly interpreting our measurements of. Whether or not those things are significant is irrelevant at this point. Without *hard* evidence of their audibility, not even their significance has any significance. *Stereophile* has neither the funds nor the time (nor, for that matter, the inclination) to organize such an experiment. But I have a lot of ideas to contribute on the subject of setting it up, choosing the listeners and so on, and -- at the dire risk of my credibility -- I'll be happy to serve as a listening panelist. This could be the most significant thing in perfectionist audio since the invention of listening fatigue. Who wants to earn the credit for doing it? Gentlemen (and ladies), the gauntlet is flung. Do I see someone coming forward to pick it up? JGH

M&K Satellite - Volksbass Speaker System

Satellite I: Two way speaker system comprising 2 5-inch cone woofers and 2 1-inch dome tweeters. No performance specifications. 8" W x 21½ H x 7½ D, over-all. \$390/pair. Volkswoofer system: 12-inch woofer in sealed box with integral 60-watt power amplifier and 1 or 2-channel crossover (100 Hz). No performance specifications. 18" H x 16½ W x 18 D. \$445 each. Miller and Kreisel Sound Corporation, 10391 Jefferson Blvd., Culver City, CA. 90230.

Most audiophiles have been more or less aware that there are certain national characteristics reflected by the "family" of sounds produced by loudspeakers from different countries, but M&K is the first loudspeaker manufacturer to codify these national earmarks to the point of actually making a loudspeaker which embodies them.

Merely by changing the connections to the Satellites, one can select the English sound (warm, with slightly rich mid-bass), German (neutral or antiseptic, depending on how you feel about it), or American (rather forwardly aggressive). The American setting (M&K calls them Positions, making us wonder if there should not also have been a Missionary) is more like what we think of as the West Coast Sound than the New England Sound. Additional flexibility is offered through a choice of two tweeter level settings for each "position," while intermediate positions can be dialed in through the addition of wire-wound resistors (supplied). Detailed connection instructions are provided.

Each satellite unit consists of

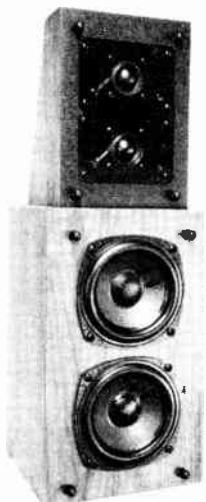
a small box about the size of a Rogers LS-3/4a and housing two 5-inch long-throw drivers, and a wedge-shaped tweeter enclosure containing two identical 1-inch domes. Inevitably, when drivers carrying the same signal are placed adjacent to one another, there is a certain amount of phasing interference in these in the vertical plane, so it is important that they be placed precisely at ear height for maximum smoothness. That location also provides the proper time alignment between the mid-range drivers and the back-spaced tweeters. M&K provides suitable adjustable-height stands (at additional cost).

The satellites are considerably more efficient than the average audiophile speaker, with an impressive 90 dB output (1 meter, 1 kHz, 1 W.in). This plus their rather incredible power-handling ability makes them capable of producing prodigious amounts of output without strain, even when the little 5-inch drivers are fed full-bass material -- i.e., with no intervening crossover. We clocked them at 115 dB before we gave up and turned them down, and there was no trace of audible overload from them. On the other hand, their high efficiency means they can generate room-filling sound with a rather modestly-powered amplifier. For example, 90 dB out for 1 watt in translates into a very respectable 103 dBA out for a mere 20 watts in. And it is becoming increasingly difficult to find high-quality amplifiers rated at below 30 watts for *any* price.

Since there is such a wide range of frequency-response characteristics available from these, via the input connections, jumper wires, resistors, etc., it is difficult

to describe how these "sound." To a great extent, you can make them sound almost any way you want them to sound.

There are however certain sonic characteristics which, since they exist regardless of which "position" is being used, may be considered to be attributes, positive and negative, of the M&K Satellites. These are: Superb inner



detail and focus, a smooth, open, but not unsurpassed high end (which is in fact much smoother and much more airy than the rather discouraging looking measurements would seem to imply), and a general tendency to lighten the sounds of most instruments, as though their spectral balance has shifted upwards in frequency. (This can border on shrillness if the electronics or the cartridge have that tendency.) The "lightening" has the same effect on musical timbres as does a slightly fast turntable speed, but without the fast TT's effect on musical pitch.

But it is in the area of stereo imaging where these little speakers almost defy belief. Imaging is almost holographic, in that closely-miked sources appear sus-

pending in space *in front of the loudspeakers*. In fact, in several instances (when we had the speakers located about 7 feet from our listening seat), closely-miked voices and instruments actually appeared to be located 2 to 3 feet in front of us. This is also one of the very few systems we have heard which seems to reproduce height information as well as lateral information. We do not know of any way in which this can happen in the absence of rear-channel information (as in ambisonic reproduction, which *does* reproduce height information), but have heard it from enough two-channel systems now to know that it *can* happen. (We still have no clues as to how.)

Imaging, otherwise, is highly localized (if the recording permits this) and stable, with a real sense of depth perspective rather than merely the cavernous depth effects produced by popular audiophile speakers that are sucked out in the brightness/presence range.

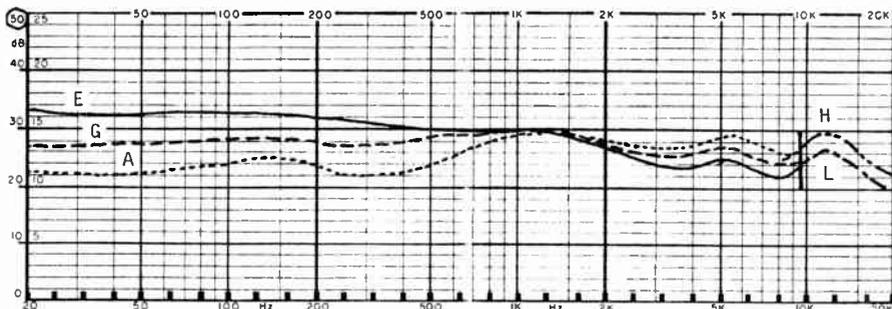
The best imaging is obtained when these are placed fairly close to the listening area and toed in so that both speakers aim



directly at the listener. Under these conditions however, that in-

credible imaging is achieved at the expense of listening-seat width; there is only one correct stereo seat, and that is precisely dead-center-between and symmetrically-facing the speakers. The area of satisfactory stereo seating can

reproducing trombones, cellos, etc.), and are better able to reproduce distance (perspective) than the popular but rather-more-costly Rogers LS-3/5as, whose richness is largely the result of a broad middle-range frequency-res-



Measured frequency response (Neutrik Audiotracer) of the M&K Satellite/Volksbass system showing the six basic response curves attainable. The system sounds smoother and more extended at the top than it measures. Curves shown are: A=American, G=German, E=English, H=High Tweeter setting, L=Low Tweeter setting.

be broadened only by moving the speakers farther away (to 9 feet or beyond), and doing this sacrifices some specificity across the entire seating area. This is something we have noticed about other loudspeakers which are capable of pin-point imaging, and it leads us to wonder if imaging accuracy and a broad listening seat may not in fact be mutually exclusive. John Crabbe, editor of England's *Hi-Fi News and Record Review*, has claimed that a broad stereo seat can only be satisfactorily produced by shaping a loudspeaker's horizontal radiating pattern so that each speaker radiates more strongly towards the middle than it does on-axis, and he may well have a point there.

Summing up, then, these have few performance liabilities and many strongly positive qualities going for them. Despite their spectral-lightening proclivities, they have more "weight" than most of the popular audiophile systems (and thus do a rather better job of

response depression. Used alone however -- without an add-on woofer -- the M&K Satellites do not seem to go nearly as low as the Rogers units, and measurements bear this out. The Rogers speakers are essentially flat to around 80 Hz, the M&Ks to around 100 Hz. But that is probably one reason why the M&Ks are virtually impossible to "bottom-out" on heavy bass, while the Rogers speakers operated full range will bottom at the drop of a hat.

The Volksbass System

At \$445 including its own 60-watt servo driving amplifier, the M&K Volksbass bass has to be one of the least expensive ways around of extending a speaker system's low end. It uses a single forward-firing 12-inch woofer in a ridiculously small box which also houses the driving amplifier and a 6-dB/octave crossover network with a nominal crossover of 100 Hz. There are two separate networks per Volksbass box, providing the option of using one VB with a pair of upper-

range speakers (for blended-bass operation) or two of them for stereo bass operation. Separate VB units (at substantial over-all cost) confer the advantage of slightly deeper bass (through doubly radiating area), slightly smoother bass (because room resonances are stimulated from two different locations, and slightly more feeling of solidity in the bass because of the woofer's partial contribution to the stereo effect. (Our ears do not appear to be responsive to stereo information above 300 Hz, but the 6-dB/octave rolloff above 100 Hz here puts 300-Hz signals just a little less than 18 dB below zero level.)

We have discussed the main advantage of add-on woofer units in past issues, but it will do no harm to reiterate. Apart from the purely economic advantage of being able to build your speaker system block by block as finances permit, a separate woofer can be placed for maximum low-frequency smoothness in any given room without compromising the placement of the upper-range speakers. It can be partnered with upper-range speakers of your choice (good, bad or indifferent) and, if a crossover network is used, it increases the power-handling ability of the upper-range speakers by siphoning cone-bottoming bass away from them.

There is an additional advantage conferred by the arrangement used here. The load "seen" by the main amplifier at low frequencies, is almost purely resistive, so the effect of power amplifier damping throughout the bass is virtually eliminated. The woofer damping is determined by the built-in bass amplifier, so this can be optimized to the particular woofer system it drives.

Finally, there is the matter of driver balancing. With a conventional passive loudspeaker crossover, woofer efficiency is often less than that of some upper-

range speakers, necessitating the use of resistive attenuators in a spot where they are most sonically detrimental: In the woofer circuit. The Volksbass's built-in driving amplifier has enough gain to drive the woofer at an "efficiency" level high enough to match that of any upper-range speakers, including horns, and balancing-out is done via an ordinary volume control at the input to the amplifier where it does no harm whatsoever.

M&K's instructions recommend placing the Volksbass in or near a room corner. With this we must take violent disagreement. True, that placement will give the *most* bass that a woofer is capable of, because it most strongly excites every standing-wave resonance the room can support. But for the same reason, this will yield the roughest bass response it is possible to achieve. We prefer our woofers as far as possible from all room boundaries, but would suggest as a reasonable compromise that they be somewhere near and under the Satellites (or whatever you use on top).

Our measurements on the Volksbass unit were done near-field; that is, with a probe microphone close to the woofer cone. This measures a woofer's potential performance, before the room has had a change to mess everything up, as it usually does. Near-field, the VB was almost amazingly flat (within a dB or so) down to 20 Hz, and was actually starting to rise very slightly at that frequency. That's what it *can* do, under ideal conditions. Under real-world conditions, what it does will depend entirely on the size and shape of your listening room and where you place the VB unit(s) in it. Only patience and a lot of experimenting will allow you to place the VB for its best performance in your room.

The *quality* of its bass is an-

other matter. Despite the servo driving amplifier, the VB's bottom persisted in being only moderately well-defined (in comparison with the paragon: A large horn), but with considerable visceral impact. The VB also showed some signs of overload at listening levels considerably below what the Satellites could handle with aplomb (ca. 100 dB). Needless to say, the VB -- particularly in pairs -- proved capable of encompassing the deepest material of any value on any disc (and we find it hard to fret if the 8-Hz content of Telarc's cannons is being attenuated).

The VBs mesh fairly well with the M&K Satellites, but a certain

amount of discontinuity through the middle-bass region was observed at times simply because the Satellites sound rather faster-reacting than the Volksbass units. Everything considered, though, the Satellite/Volksbass route represents a reasonably-priced way to go for a system that in many ways outperforms most of the \$2000-and-up (per pair systems), which prompts us to ponder once again why it is that, the higher-priced the system, the worse its middle range often seems to be. (Quad electrostatics still have the best middle-range performance of anything available to the consumer, but then that's another story.)

KLH/Burwen TNE-7000A Transient Noise Eliminator

Guest review by William Sommerwerck.

Signal processor for eliminating transient noise (ticks, pops) from discs. 80 to 600 microsecond blanking duration; blanking period filled by transition voltage. Dynamic range 100 dB. 6 volt maximum input. Output 7 volts max. 0.1% THD, .05% IM distortion. Tape monitor loop connections & switch. 2-7/8" H by 16-3/4 W by 7-5/8 D. \$299. Burwen Research, 145 University Ave., Westwood, MA 02090.

Is there anyone out there who doesn't remember the SAE 5000? Dubbed the "Click and Pop Machine," it was introduced some years ago with a hoopla exceeded only by, perhaps, that of the Bose 901. It was supposed to remove transient noises from records, without any audible side effects. I rushed for a demonstration.

SAE suggested that the unit be demonstrated with a badly gouged record, and sure enough, the dealer's demo disc looked like Janet

Leigh after Tony Perkins interrupted her shower.* Not surprisingly, the record produced a horrendous once-per-revolution BANG! With the SAE 5000 switched in, the transient was completely removed, and nothing new added. I was impressed!

But not for long. A few minutes' listening showed that the 5000 hardly touched medium-sized clicks, and did nothing at all to the tiny ones, which can be just as annoying as the bangers. I pocketed my \$200.

Unless you're really a clumsy clod, badly-gouged records are only a very small part of your collection. A de-clicker which killed every small and medium-sized pop (even if it did next to nothing to big ones) would improve almost every record. (Damaged records would be replaced if possible, rather than trying to wrap their

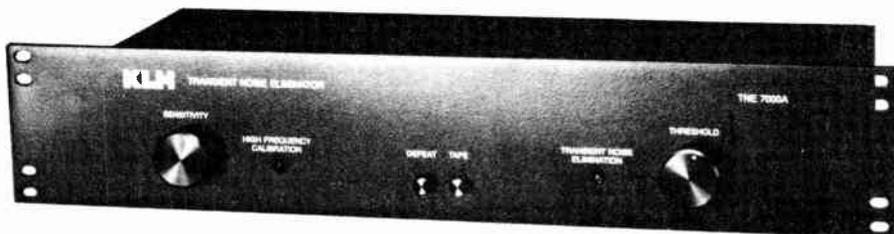
** For the benefit of those sheltered souls who never got to see the film "Psycho," Tony carved Janet up with a kitchen knife. It was the goriest scene in films until Sam Peckinpaw invented the cinematic bloodbath.*

wounds in an electronic bandage.

Until the Burwen design,* de-clickers (there was also the Garrard, which had high distortion too) used pretty much a brute-force approach. The incoming signal is delayed (by about 1 millisecond) and held as an ever-changing "inventory" in storage. This is to give the device time to "decide" whether or not to chop out a transient before letting the signal pass through to the speakers. Record-click transients

spikes, harpsichord plucks and so on. Often, the unit cannot distinguish these from surface-noise clicks, and shears them off too.

The Burwen design is far more sophisticated. Click detection is predicated on the fact that most surface noise produces vertical motions of the stylus, while most program material is represented by lateral motions. Vertical stylus motions represent out-of-phase signals from the cartridge. The out-



tend to have faster rise times than signal transients. The device would gauge a transient's rise time and, if this exceeded a certain slewing rate (determined by the Threshold control), the unit would chop it out and replace it with the fragment of program (from storage) immediately preceding the click.

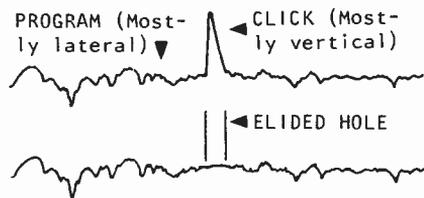
Because a loud click reaches a high energy level in about the same time period as a small one reaches a low level, the loud one will have a much faster rise rate. With the Threshold control set to respond only to very fast rises, the click suppressor has no trouble distinguishing between clicks and program transients. But in order for it to attack smaller clicks, its Threshold must be set to operate at rise rates approaching those of certain program transients -- trumpet

of-phase information is extracted from the cartridge's output signal and filtered so that all that is left is the energy between 15 and 50 kHz. (Musical information rarely exceeds 20 kHz on a disc, but pops and clicks have strong ultrasonic components.) The predominantly-click energy is then fed to a comparator which measures the relative energy of the lateral, audio-band signals versus the vertical surface-noise signals and "decides" whether to pass the entire signal or chop it out for a fraction of a second, which can range from 80 to 600 microseconds depending on the amount of difference that is detected between the vertical impulses and the rest of the audio signal. When the signal is chopped out, the "hole" is filled by a bridging impulse which elides the signal energy prior to the chop-out with that following it.

Installation of the TNE-7000A is straightforward. It is level-sensitive, so it should be inserted ahead of the system's volume control --

*Burwen was bought out some time ago by KLH, who now produces the TNE-7000 under their own trade mark.

usually in the tape-monitor loop. If this hogs your only monitor facility, there are functionally redundant ones on the Burwen, along with the necessary Source/Tape switch. Since the Burwen depends on good ultrasonic response for accurate click detection, high-quality low-capacitance audio cables should be used and the cartridge should have as extended a high end as possible.* Also, any other signal-processing which might remove ultrasonic energy



should be done *following* the Burwen. Click removal is, for example, much more thorough if done while making a tape of a disc than if done while playing back the tape. A similar problem arises with the multiplex filter in stereo FM tuners, which reduces the Burwen's effectiveness on auto ignition noise. (Some new tuners, though, electronically cancel out the ultrasonic pilot tone and these neither need nor have the MPX filter. These should work better.)

Adjustment, too, is simple. You play a low-level musical passage with little HF content, and turn the Sensitivity control clockwise until the LED next to it just starts to dim. (This tells the 7000A how

* Mr. Sommerwerck uses a wide-range MC cartridge. Our own experience with a TNE-7000A showed that a typical moving-magnet cartridge such as a Shure or Grado produced almost as good results as did some MCs we have on hand, but suppression of exceedingly small ticks was not as effective with the MM cartridges.

much high-frequency hiss is present; pops and clicks below that level are ignored. The setting seems more dependent upon the residual noise of the preamp than on the background noise of the disc, and thus rarely needs changing.) Then the Threshold control is turned as far clockwise as possible without the unit starting to attack musical transients. An LED next to that knob blinks to show that noise suppression is taking place. (This control adjusts the amount of noise needed to actuate the comparator. It, too, rarely needs re-setting.)

Aside from its click-removal abilities, how does it sound? I was afraid to put anything so complex in my system. But after a year of listening, I feel reasonably confident in saying that it introduces no perceptible grit, grain, hardness, softness, or dynamic compression. On a direct bypass test, there does seem to be the most barely perceptible loss of transparency and depth. (This is "barely perceptible" on Infinity RS-4.5s, not on FMI 80s.) There also seems to be a subtle degradation of imaging when the Tate (Audionics) Sound and Image Composer is used for surround sound. Both effects are so slight they may in fact be my imagination.

At this point the peanut gallery must be jumping up and down, ready to wet their pants, because I still haven't said anything about how it works. Well, it really does remove them. Like you wouldn't believe!

Most recordings have many little ticks and bings. On some discs, they come as an almost-continuous fusillade. The TNE-7000A removes a good 90% of them, and often 100% of them. Medium-sized clicks are removed about half the time and are nearly always at least reduced in level. Large pops are rarely removed but are (usually) noticeably dulled.

The effectiveness of the unit depends not only on the quality of the cartridge (it must maintain adequate separation into the ultra-

sonic range in order to reproduce vertical energy above 15 kHz), and the care with which it is adjusted, but also on the quality of the recording. European pressings seem to have (or to accumulate) more clicks than do the domestics, but the clicks are shorter and crisper so the TNE-7000A does a better job on them. Poor pressings seem to give the unit hysterics. It can exaggerate mis-tracking due to poor groove fill (pits in the groove walls). The transient noises from such discs are of longer duration, making them harder to eradicate. Mistracking due to wear or an inadequate (or improperly set-up) cartridge is also exaggerated, as the slamming of the stylus against the groove walls generates ultrasonic junk which triggers the unit so often that there is little of the original signal left between the elision fill-ins.

Watching the Noise Suppression light as the unit switches in and out, it quickly becomes apparent that the unit is false-triggering at least half the time, on any record! It also becomes apparent that these little excursions are not audible. Some discs, though, cause an odd repetitive grinding noise that can't be specifically associated with anything audible. This can usually be corrected by backing off on the Threshold control. These problems are minor and rare. The 7000A works marvellously with most records. It is absolutely uncanny to switch it in and hear essentially total elimination of transient noise. (And it also prevents ambience delay systems from producing annoying metallic clangs when the larger pops come along.) Very highly recommended.

JGH Addendum: We tried a TNE-7000A and can report that we agree with WS's assessment. We should underscore the importance of careful adjustment, however, for excessive advancement of the Threshold will

dirty up the sound of many records. The control should be set at the lowest position needed to eliminate most of the ticks and pops from a disc. Unusually noisy ones may require a compromise between cleanliness and quietness.

The TNE-7000A is not quite as effective in suppressing surface-noise as is the much-more-costly Packburn 101 transient-noise suppressor. The Packburn will gobble up horrendously large surface pops as well as smaller ones, with but a very slightly greater muddying effect on the sound. And the Burwen seems oddly ineffectual in coping with transient noises on mono discs, which is the Packburn's forte. In fact, the Burwen was judged to be little more effective on mono clicks and pops than the much-less-costly expedient of blending stereo channels (to kill vertical signals). The Packburn, however, has the distinct disadvantage that it must be inserted into a high-level signal circuit having no RIAA treble roll-off preceding it, which means it must be used with a specially-customized preamplifier having low-frequency equalization but no RIAA rolloff. Treble rolloff for RIAA discs must then be provided at some point in the system following the 101. (It is included in Packburn's Model 201 continuous-noise (hiss) suppressor, which adds roughly \$1000 more to the \$1000 cost of the 101.) The company plans to market a modified PS-1 preamplifier for use with the 101, and this will also include a variable bass-turnover switch as well as a flat high end, but at additional escalating cost. And the external RIAA rolloff is still needed. We'll have an in-depth report on the Packburn equipment in a future issue.

Generally, we do not much like the idea of signal processors, and rather wish they did not need to exist. (We prefer to listen to records that don't need processing, on a system with the mandatory

minimum of circuitry.) And there is a temptation to adopt a pig-headedly idealistic stance by simply refusing to listen to discs that aren't sonically State-of-the-Art. But the inescapable fact of the matter is that the vast majority of superb musical interpretations and interesting repertoire is available to us only on recordings whose audio quality ranges from good to execrable. Many of the shortcomings of these recordings -- distortion and lousy multi-mike mixing, for example -- are uncorrectable, and must be tolerated as the price of listening to that performance. Surface noise and dynamic range compression can however be largely eliminated by suitable signal processors, and if those devices can make those recordings more enjoyable to listen to (and they can), we can't bring ourselves to get upset if those devices also happen to add some slight colorations of their own. They can always be switched out of circuit

when listening to that rare super-disc that is musically worth one's attention. And as far as those spurious colorations are concerned, we are far more tolerant of errors of omission -- diminution of detail or of frequency range or of imaging specificity -- than we are of errors of commission which tend to draw attention to themselves and away from the music -- errors such as harshness, muddiness, boom, etc.

Thus, we can heartily recommend the KLH/Burwen TNE-7000A for anyone who often listens to records for their content rather than their sound. For these listeners, the 7000A and dbx's 3BX dynamic-range expander can add a degree of realism to sonically average recordings that must be heard to be appreciated. Purists who are too rigidly perfectionist-oriented to compromise the sound for the music will not need to be urged to think twice before adding any signal processor to their system. But they'll never know what they're missing.

Quickies

Fidelity Research FR-14 and FR-64 Tone Arms

These are rather high-mass designs, intended for use with those very-low-compliance MC cartridges which are, we are glad to see, passing from the audio scene.

Both are slightly colored by small mid/high-frequency resonances of the headshell and arm tube, both can be expected to complement some cartridges and not others. When dealing with colorations of such small magnitude, and playing mix-and-match with your favorite cartridges, there is no predicting how you will feel about the ultimate sound of a given cartridge with either of these arms. In sum: These are both very good but very

imperfect arms, which hardly matters since they will probably be obsolete within a few months by newer, improved ones which probably won't be perfect either.

Loudspeaker Cables

Our investigations here opened a veritable can of giant worms. First, though, we can deal summarily with those articles that have appeared elsewhere purporting to show that all speaker cables sound alike -- another way of saying none of them has any sound at all. When -- as we found -- some "super cables" will cause some amplifiers (with some loudspeakers) to go into full-blown ultrasonic oscillation, there is little further need to argue with the contention that all cables sound alike. The fact

is, different speaker cables do "sound" different. The only question, it would seem, is why some people are able to hear the difference and others are not.

The problem, as intimated, is that some of the audible differences between cables are due to mutual interactions between amplifier, cable, and loudspeaker, so some amp/speaker combinations will reveal relatively little differences between cables while other combinations will reveal appreciable differences.

The Mogami, Audiosource, and Polk cables tended to induce ultrasonic oscillation with one power amplifier we had on the premises, when connected to some loudspeakers.* Since that particular amplifier was no less stable than any number of others, there is a better-than-even chance that any moderate-priced amp would oscillate with these cables, so we ruled them out at the outset simply because of the impossibility of predicting how they would work in a given system.

It seems unfair to dismiss these because of a possible problem that is the fault of the amplifier rather than that of the cables, but not all amplifiers are designed for maximum stability with moderate capacitive loading, and the only way of determining which amplifiers are marginally unstable is to try

** An oscillation tendency may manifest itself as ringing, which adds a hard edge or extra brilliance to the sound, or as outright, full-power oscillation which causes muddy sound and will frequently burn out tweeters. When we tested the Polk cables some years ago, we observed that additional brightness when using the Polks with an Audio Research D-76 and Spendor BC-1 speakers, but did not realize then that it was probably being caused by ultrasonic ringing.*

them with these cables. Since the result of an incompatibility could be the destruction of the amplifier or a tweeter or two, we feel it is better to play it safe than risk disaster.

Of the remaining 7 (Levinson, King Snake, Smog Lifters, Lucas, Litz, and the two FMIs), we were forced -- grudgingly, because we despise their clunky, unmanageable heaviness -- to give top honors to the FMI Golds, which surpassed our second choice -- Monster cable -- by a small but significant margin in terms of high-end openness and focus, low-end solidity and depth, and across-the-board detail. The Monsters, at a fraction of the price per foot, were slightly superior to the FMI Browns, both of which were clearly superior to 14-gauge zip cord. Sorry, all you skeptics, but that's the way we heard it.

(Subsequent to these tests, we received a pair of Hartley "Reference Cables," about which we hope to have something to say next time around.)

Three minutes after we wrote the preceding paragraph, the phone rang. It was Richard Hartley, of Hartley Products Corp. That kind of thing gives us the heebie-jeebies.

Shure M-97-HE Cartridge

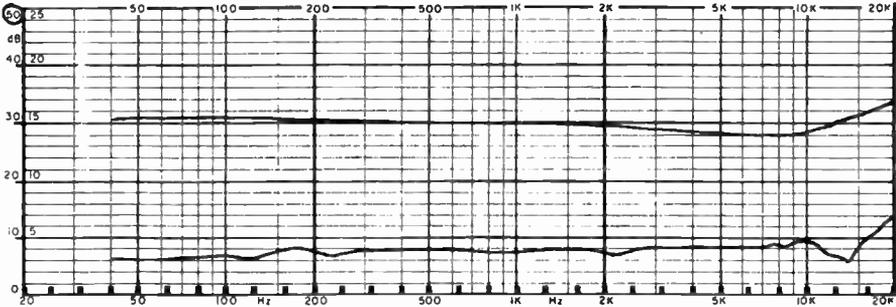
This is, essentially, a V-15-IV for the ham-handed, embodying a clever little feature called a Side Guard Stylus Deflector. This causes the stylus to retract into the body if exposed to inordinate abuse (such as touching the rough outer edge of a disc), instead of folding up in the stretch. It also has the V-15-IV's "Dynamic Stabilizer," which has proven to be one of the most effective anti-warp gadgets to come down the pike.

Unfortunately, some sound quality has been lost in the translation. While the V-15-IV was one of the most neutral cartridges we've

encountered, the M-97-HE sounds a little warmish and very slightly tizzy at the top (more like a "ff" than a "ss"). Trackability was only a shade less extraordinary than that of its big (and expensive) brother.

per pair) two-way, three-speaker system has moderately high efficiency, rather higher-than-average maximum clean output capability, and noticeably colored sound.

The most noticeable coloration;



Measured frequency response and separation of the Shure M-97-HE. Neutrik Audiotracer curve courtesy of Philips Audio-Video Systems Corp.

In its \$112 price class, there are rather more neutral cartridges (some of the Acutex models, i.e.), but none that we know of that can track as well. A difficult choice, we would say, but one that the buyer is better qualified to make than we are. As for us, we are still undecided as to whether we are more irritated by slight coloration or by slight mistracking. We are inclined though to give mistracking a higher irritation rating than coloration, and are quite certain that, if coloration must lean towards brightness or warmth, we will take the latter any time.)

The M-97-HE, incidentally, appears to be the same cartridge as Radio Shack sells for \$50 as their RXT-4. It isn't. The RXT-4 is an elliptical rather than a hyperelliptical, and has the elliptical's typical brightness-range dip and high-end peak. The RXT-4's HF trackability is not quite as good, and its treble peak tends to exaggerate the audibility of mistracking.

are in the middle range: A whonky quality and a nyeh nasality. Highs are rather steely, extreme highs are virtually absent, and bass seems to fall away below about 80 Hz. Added to all that, it images rather poorly too, with a distinct vertical-venetian-blind effect* when one moves one's head from side to side. (Not that we do this while listening, but the VVBE probably accounts for the system's slightly vague localization.)

Dynavector Karat Ruby Cartridge

Although we are willing to declare that this is the best-sounding moving-coil cartridge we have heard to date, our tests on this turned up some puzzling inconsistencies which we intend to resolve

* The VVBE causes sounds to hop from left to right to left as the listener's head shifts laterally between the speakers. It is caused by small phasing cancellations between speaker drivers which are laterally displaced from one another and are sharing the same range of frequencies.

KA Stat Speaker System

This moderately-expensive (\$400

before publishing our report. Better safe than sorry (or irresponsible), we always say...

To date, our observation has been that the cartridge is a little hot at the top and a little heavy at the bottom, but the sound varies markedly depending on the step-up device used with it, and frequency-response measurements have been wildly inconsistent. Hardly the basis for a conclusive report.

Audionics LK-1 Turntable

This unique design reflects the kind of innovative thinking that distinguished the designs of Paul Weathers. It is a lightweight, moderately-high-torque belt-drive 'table with an ingenious and highly effective shock suspension. At \$697 (minus tone arm), it ain't the cheapest TT available, but considering the fact that its performance rivals that of the legendary Linn, it's got to be considered a Best Buy for the money. Its biggest liability, as we see it, is its relatively light weight in a device in which audiophiles have come to equate weight with performance.

Signet TK-33 Headphones

Very deep bass, subjectively flat to around 55 Hz and usable down to 35, with a very smooth, extended high end but without quite the snap and sheen of the best electrostatic phones, these have an over-all sound which is so similar to that of the Infinity RS-4.5 speaker system that they might have shared the same ancestry.

They are quite rich sounding, a little distant in perspective, and capable of producing very high listening levels without a trace of audible strain.

A row of LEDs on the front panel indicates when the phones are approaching levels which might cause hearing damage (or phone damage).

The first green LEDs light at an output level of about 86 dB. Yellow LEDs go on at around 96 dB out, and when the red LEDs start to light (104 dB), you're on the verge of trouble. (Prolonged overloads, causing the red LEDs to light more or less continuously, will cause depletion of the signal level, as protection for both the listener and the phones.)

Not the most neutral headphones we've tested, but ones that will have strong appeal to audiophiles who prefer a touch of added richness to the occasional brilliance of more-neutral transducers. The price: \$274 list.

Genesis V-6 Speaker System

These are by far the best speakers for the price (\$238 per pair) that we've heard. With a low end virtually flat to 55 Hz, high end virtually flat to well beyond 20 kHz, and a middle range that surpasses in accuracy a lot of \$5,000 systems, these are going to be very hard to beat. Unfortunately, we learned after auditioning them that they are being discontinued, to be replaced by a newer version at an even lower price (\$190 per pair). We'll be testing the new ones in a future issue, but meanwhile, if you're looking for a bargain in low-cost speakers, the Genesis V-6s should be at the top of your list of ones to consider.

Coming Up

Reports in future issues will include the AKG C-34 stereo condenser microphone system, Spica Speakers, the Signet TK-9E and Mk. 111E cartridges, Sony's XL-88D cartridge (with the one-piece diamond stylus and cantilever), Empire's 600LAC cartridge, the Packburn disc-noise-suppression devices, B&O's Beovox 150 speaker system, and KLH's 160 and 160 speaker systems.

Recordings

RAVEL: Scheherezade, Melodies Hebraïques, Daphnis and Chloe (2nd Suite), Pavane pour une Infant Defunte. Nadine Denize, *Orchestre Philharmonique de Lille, conducted by Jean-Claude Casadesus. Harmonia Mundi (France) HM 10.064.*

Warhorses seem to run in cycles. Ravel's "Daphnis and Chloe" seems to be of them that is currently enjoying a vogue. I am becoming sated with it. Happily, there is enough other interesting Ravel material on this disc to make it worth listening to.

The performances are exquisite, although I've heard more-compelling renditions of the *Daphnis* suite than this one. The final *Danse Generale* lacks momentum. The *Pavane* has a stately tempo which blends effectively with Ravel's ethereal, dark-hued orchestration. The real gems are on the reverse side, however. Nadine Denize has an expressive voice which she uses well, and the *Melodies Hebraïques* and *Scheherezade* are superb. This is another Top-of-the-Pile release.

MG

FULTON GOLD. Excerpts from ARK records. *Various Artists. ARK-4170S.*

This is both a sampler for ARK's now-wideranging library of recordings and a superb demonstration disc for putting a system through its paces. Selections include chorus, band, piano, English horn and harp, swing band, and solo voice with guitar. Everything except full orchestra -- dammit!

Fulton's discs get sonically better and better. This one is simply superb, and is free from the intra-groove echoes that have

marred so many previous ARK discs.

Considering the variety of recording environments represented here, the sound is amazingly consistent from band to band -- further proof that the gorgeous sound on ARKs is the result of skilled microphone placement and not dumb luck. This is worth owning, both for the super sound and for the incredible typo on the label. (Ever hear of Cesar Franck's *Piece Herequay*?) The record can be ordered directly from FMI for \$17 including shipping, or through Stereophile Record Service (See the SRS ad at the back of this issue.) FMI's address is 4202 Brunswick Avenue N., Minneapolis, MN 55422. JGH

DEBUSSY: La Damoselle Elue; CHAUSSON: Poeme de l'Amour et de la Mer. *Montserrat Caballe, soprano; Janet Coster, soprano; Ambrosian Ladies Chorus, Symphonica of London, Wyn Morris, conductor. Peters International PLE-021.*

One of Debussy's most hauntingly beautiful works, *Damoselle* has been sorely neglected by recording companies ever since its last successful recording with Bidu Sayao, Rosalind Nadell, and the Philadelphia Orchestra with Ormandy (in mono, on Columbia ML-4075).

Ms. Caballe's voice is not as voluptuously rich here as was Bidu Sayao's on the old Columbia, but this performance is just as magical and the sound is infinitely better. Its main shortcoming is a somewhat thin low end.

The Chausson, too, is given a lovely performance here, and both recordings -- while probably multi-miked -- are mixed with sensitivity and subtlety, producing a sound that lies about midway between the

typical EMI's robustness and the typical Proprius's richness, with a slight dryness over-all. Massed violins are very slightly wiry but by no means hard or steely. Imaging is very good but the soloists' locations are a little vague and their voices rather overly-broad. Not quite a Top-of-the-Pile, but well worth owning for the performances. And the recording, if not the best, is good enough so as not to impair the enjoyment of the music.

Incidentally, Peters International is a relatively new record label, but is by no means new to the record business. The firm has been importing European-made records (mostly EMIs) for more than 10 years. JGH

THANKFUL: Natalie Cole. *Mobile Fidelity MFSL-1-032*.

This is a very nice recording, and the music is enjoyable. It's multi-miked of course (it's mandatory in pop recording, whether or not it is necessary) but the mix is very well done and the sound more open and delicate than the original Capitol release would have led one to suspect.

Either you like Ms. Cole or you don't (I do), but either way, this has got to be a Top-of-the-Pile recording. MG

BEETHOVEN: Trio in B Flat Major, Op. 11. BRAHMS: Trio A Minor Op. 14. Bob Wilbur, *clarinet*; Leo Winland, *cello*; Janos Solyom, *piano*. Artemus ARTE-7107.

Another stunning chamber-music recording. The performances are elegant, and Mr. Wilbur's clarinet playing is enchanting, with a rich, warm tone. I would love to hear a recording of Messrs. Wilbur and Solyom doing the Brahms Opus 120 Sonatas.

Artemus is a subsidiary (?) of Proprius Music (Sweden), so it is not surprising that there is more than a family resemblance between the sound of this recording and the sound of most Proprius releases. This recording sounds eminently natural, with a marvellous sense of depth and perspective. There is none of the usual audiophile disc's brashness or selfconscious fi.

Definitely a Top-of-the-Pile recording. MG

STRAVINSKY: *Le Sacre du Printemps*. Cleveland Orchestra, Lorin Maazel, conductor. Telarc Digital G-10054.

Another superb recording sabotaged by a flaccid, lackluster performance. For once, Telarc's recording maintains the bass in proper balance (most are bass-heavy) and has just the right amount of reverb, but with a performance like this, who cares? JGH

MUSIQUE JUDEO-BAROQUE: Works by Rossi, Saladin and Grossi. *Camertata of Boston*, Joel Cohen, conductor. Harmonia Mundi (France) HM 1021.

Another smooth, natural-sounding record from Harmonia Mundi (France) but hardly audiophile fare. Only those who are into baroque music will enjoy this. The jacket notes are informative, and relate to the music as well as to the performers. A fine recording, but of limited interest. T-o-P, though. MG

ELGAR: *Falstaff*; *The Sanguine Fan* (Ballet); *Fantasia and Fugue in C Minor* (transcribed from J. S. Bach). London Philharmonic Orchestra, Sir Adrian Boult, conducting. MFSL 2-501.

It's finally happened. Until now, every symphonic recording that has

come along has been compromised to some extent by an indifferent performance or an imperfect recording, or (much more frequently) by both. It almost seemed as if the better the recording, the worse the musical performance (or vice versa). Now, for the first time in the history of symphonic recording, we have a musical performance that is never likely to be bettered, on a recording whose sound is so good that it doesn't leave enough room for improvement to make another recording of these works worth the effort. This is an absolute Must Buy for any audiophile who enjoys symphonic music, whether or not he has ever heard of Sir Edward Elgar. The music is delicious and the recording is -- well, just listen to it.

We have never before given an award to a recording, because we've never found one worthy of it. Now we have. More details next month.

JGH

BERNIE KRAUSE: *Citadels of Mystery*. *Mobile Fidelity MFSL 1-505*.

This is a very hyped, contrived recording, but then nobody ever pretended that this kind of musical construction was supposed to approximate the sound of a live performance. The strings are quite steely on this but, in all other

Top-of-the-Pile

If that sounds like something on your carpet, it isn't. It's the term we use to designate a recording which combines an outstanding musical performance with an outstanding recording. You may have noticed that Audio magazine now has what they also call a Top-of-the-Pile list. They borrowed the name from us. We'll bet they won't give it back.

respects, the recording is simply stupendous -- unctuously rich, smooth and limpidly clear, with some awesomely taut low end and cuttngly crisp percussion sounds.

Much of the program draws on African and Haitian sources, and I must say I found some of the maddeningly repetitive passages to be maddeningly repetitive. I'm not sure whether or not to recommend this, because the program is strong enough in character that it is likely to have strong appeal to some of you and none at all to others. There will be no indifference to this!

The title is rather misleading, for much of the music is riotously joyous, which is not my idea of *mysterioso*. Other parts are hair-raising, with moments of blazing intensity and power.

Regardless of how you may feel about the music, this is unequivocally a Top-of-the-Pile recording.

JGH

WILLIAMS: Suite from "The Empire Strikes Back." *National Philharmonic Orchestra, Charles Gerhardt, conductor. Chalfont Digital SDG-313*.

Here we go again! These are superb performances that have been spoiled by an indifferent recording. This is cleaner and more transparent than the sound-track one on SRO Records (and infinitely quieter in its dbx-encoded format), but whereas the SRO had body and guts, this has only shrillness. A pity.

JGH

Tanner/Elliott/Siu: *BOY WITH GOLD-FISH*. *London Symphony Orchestra, Lee Holdridge. Varese-Saraband Digital VCDM-1000.30*.

This three-way collaboration for orchestra, chorus and two solo voices was inspired by Hawaiian

Legend paintings by John Thomas. It is a little difficult however to figure out from the jacket notes who did what to whom, but I get the impression that the music was by Jerre Tanner, the song lyrics were by Leon Siu and Malia Elliott, and the latter two served also as soloists. (All are Hawaiian.)

The work is massive, with an awesome power contrasting with sensuously lyrical passages. The word "overblown" comes immediately to mind (as it does when I listen to Havergal Brian or Anton Bruckner), and the goosebumpy power of this music --and of the recording, which is the best yet from V-S -- seems ludicrous if one doesn't bother to read past its title. It seems much less so when we read that it deals with the creation of the Hawaiian Islands and the Coming-of-Age of Man.

Unfortunately, the poetry and lyrics that go along with all this rarely rise above doggerel, and the soloists have moments of embarrassing ineptitude. Like most of Wagner's "lyrics," these would fare better if sung, un-translated, in some unfamiliar tongue or, better yet, if the solo parts were assigned to a duo of contrasting instruments such as clarinet and flute.

Nitsie-picksies aside, though, I found this enjoyable music, and the recording turned out to have the most natural massed-violin tone I have heard from any Soundstream-mastered disc. I'd advise getting this, particularly in the dbx-encoded version (if you're set up to

decode it). The record jacket is a little misleading on this point, as it states that "This digital recording will reproduce on regular stereophilic equipment," whether or not the disc is dbx-encoded. The dbx one will reproduce on "conventional" stereo equipment without decoding. It will just sound awful. JGH

BONDON: Le Soleil Multicolore;
DEBUSSY: Sonata # 2. Carter Chamber Ensemble. Sound Storage SSR-2020.

Another new, small perfectionist recording company, Sound Storage Records uses Blumlein coincident bidirectional microphones for recording, and allows no editing during movements of a work. There is no "enhancing" equalization, and no dynamic-range compression. The result is a stunningly natural reproduction of some excellent music, played with a spontaneity and elan that one rarely hears from a "canned" performance. And whilst chamber music doesn't exactly show off one's system, it does allow a perceptive audiophile to ascertain how well his system reproduces the real timbres of musical instruments.

This recording of viola, harp and flute is a lovely disc for that purpose, for the instruments sound almost palpably real, if perhaps very slightly soft at the extreme top. Splendid performances to boot make this yet another addition to our Top-of-the-Pile list. MG

Garbled Gallery

For reasons beyond any mortal's understanding, we somehow managed to list the wrong Post-Office Box number for the Gallery of the 21st Century, which advertised music posters in our last issue.

TGo21stC's correct Box number is 2711, NOT 274. Please note, then refer back to page 39 of the

previous issue.

Recommended Everythings

In our next issue, we'll have a current update of both our "Recommended Components" list and our "Top-of-the-Pile" record list, as well as the first of a series of audio puzzlers to challenge your powers of deduction.

Winter CES

We didn't make it in person to this year's Las Vegas audio bash, so we asked John Curl (who did) if he'd let us know what new and interesting things he saw there. His summation: Not much.

Class A amplifiers were apparently The Thing at the '81 Winter CES. James Bongiorno (Sumo) had a dual-70-watter with a \$450 price tag -- possibly the lowest-priced of the new Class-As.

There were no new \$20,000 speaker systems or \$15,000 turntables. In fact, the only speaker system John felt moved to comment about was a new one from Dr. Roger West's Sound Lab Electronics, which was similar in design to the Renaissance I electrostatic introduced last year. The new one, described as a full-range unit (How low?), also has its radiating panels placed more closely together, to improve horizontal dispersion.

Anything else worthy of note? Nope. Maybe audio is going into a period of stagnation, or maybe John just wan't in the mood to be impressed with anything.

The Computer Age

Dealers and manufacturers who have been wondering recently where all of yesterday's audiophiles have vanished to should peruse some of the magazines for computer enthusiasts. Except for the topic, these magazines (*Interface Age*, *Byte*, i.e.) have the look and the flavor (and the boundless enthusiasm) that audio publications used to have 15 years ago. If you thought audio was a gadget-ridden field, wait until you see the goodies being advertised for home microcomputer owners. And like audio, computing has its own terminology which has meaning only

for the In Group. Terms like pixel, ROM, modem, and peripheral are as bewildering to expert audiophiles as IM, impedance and side-band noise are to tyros.

It is easy for anyone with what we call "disposable income" to justify the cost of a personal computer because it can do so many useful things -- maintaining family finances, dishing up cooking recipes according to the ingredients you have on hand, calculating betting odds, writing your first novel -- the list is virtually endless. Once you have one, you can then excuse the small additional expenses for programs allowing you to play Dungeons and Dragons or variations thereof, Chess, and any number of the most popular arcade games. And if you have kids, you can add another rationale to your list of reasons for buying a Micro-Computer instead of another Moving Coil: Your kids can get a headstart in tomorrow's computer age by learning how to use one now.

No wonder there's a sudden shortage of high-priced audio equipment buyers. The home computer has become the ultimate diddle machine for the affluent intelligentsia, leaving audio as an interest only to those people who appreciate what it can do for reproduced music. And come to think of it, that's who audio should have been for all along.

CBS FDR

CBS Technology Labs has announced the development of a full-dynamic-range recording system that can provide 84 dB of S/N -- comparable to that from home digital tape-recording systems -- from an encoded disc that is playable without decoding.

Dbx encoding/decoding gives comparable S/N, but dbx-encoded discs sound rotten when played without decoding. The CBS discs, according to that company, will reproduce with limited dynamic range without decoding, but are otherwise indistinguishable from conventional compressed recordings, exhibiting none of the aberrations which spoil the sound of undecoded dbxed discs. The whole purpose of CBS's development is to eliminate the need for double-inventorying of discs, as is necessary with the dbxed ones.

The circuitry required to decode the CBS discs is claimed to require a mere \$2 to \$3 worth of parts. Decoders could thus be incorporated into consumer products at an added cost of \$30 to \$50, and add-on decoders could be sold at the consumer level for \$60 to \$100.

We're intrigued, but we wanna hear it before we'll believe it.

Digital Diddle

Our intrepid idealoclasts at *High Fidelity* magazine have done it again. This time, they set out to resolve the digital-versus-analog question, and went about it in their usual misguided way.

First, they rounded up a panel of high-powered experts, including learned musicologists, practicing (and performing) musicians, and the Editor, Publisher, and Primo Ego of one of the "little" underground magazines. "That should lend an air of authoritativity (Okay, but it sounds better than "-ness.") to our research." They even outdid all such previous listening tests by choosing (at one audition location) really revealing components -- a system provided by Mitchell Cotter, who also participated on one of the listening panels. The speakers were Quads -- still the *ne plus ultra* for middle-range accuracy and microscopically analytical reproduction across the board. All in all, a good start, we

felt. But then they blew it.

Instead of trying to ascertain, by direct comparison, which recording system could best reproduce an original signal, they played discs -- analog, direct, digitally-mastered -- and asked the panelists to say which they felt "sounded better." Since, in this way, they were judging microphones, recording technique, disc cutters, playback cartridges, playback electronics, and loudspeakers, as well as the recording system, it is hardly surprising that they found no consistency, no preferences, and ultimately no excuse for having taken up so much of their panelists' valuable time.

We were surprised that neither Peter Aczel (the only representative of the "underground" press) nor Mitch Cotter complained about HF's approach to the problem but, if they did, there was no mention of it in the article. But now that we've shown them the error of their ways, maybe HF would care to try again, the right way. What might that be?

Take the best recordings on each medium that one can round up, and use each of the other media to make a copy of it. Then compare originals with playbacks. Had this been done, we are confident that HF would have found, not only a high degree of consistency, but also an answer to the question that they were supposed to answer in that article and failed to. Chalk up another triumph for idiocy!

SRS Reminder

Just because we don't have a full-page ad for our record service in this issue, don't get the idea that we've discontinued the service. We still have available the largest selection of hard-to-find records of any US mail-order record dealer -- Telarc, Proprius, Opus 3, Vista, English and German EMI, Artemus, Three Blind Mice, Mobile Fidelity, Sheffield, Crystal Clear, Japanese Philips, Mer-

lin, Sound Storage, Mark Levinson, ARK (Fulton), World, M&K RealTime (and Digital Masterpiece), Acanta, Telefunken, Electrola, Harmonia Mundi (France and Germany) and more.

Our complete new collector's catalog (110 pages listing over 3,500 titles) is now available for \$3, with the cost credited towards your first order. For this or the free audiophile-disc catalogs, write to SRS, P.O. Box 1948, Santa Fe, NM 87501.

The Sting of the Asp

We managed to pull off a bit of a booboo in our last issue. We learned, through an absolutely unimpeachable source, that *Absolute Sound's* Ed & Pub Harry Pearson had visited Dr. John Diamond (he of the digital sap theory), submitted to the digital sap test (See Page 30 of issue IV-8), and been instantly convinced of the weakening effect of digital sound, and that a report on that demonstration would appear in *TAS*. Even though HP has been, let us say, highly skeptical of digital audio's fidelity, we expressed some surprise that he had failed, when confronted by the opportunity, to insist on double-blind controls for the test.

Well, it turns out that our source was more than somewhat impeachable. It wasn't HP who was gulled, it was ASP -- one of HP's contributors. Harry, our profoundest apologies. However... your ASP ought to be roundly chastised for being so gullible. Our feckless contributor, on the other hand, has been cannistered for committing the cardinal sin of reporting: Getting his facts all screwed up.

More No-Baloney

Apparently not content with producing the world's first affordable PCM recorder (the PCM-1), Sony Corp. may now be first to manufac-

ture an optical-laser PCM record player. Their prototype player, using the system developed by Philips, will be shown at the summer CES, and production is scheduled for 1982, well ahead of Philips' timetable. Initial releases will be from DGG and CBS Records.

Playboy Entertainments

Some belated observations about *Playboy* magazine's plunge into home electronics (*Playboy Guide: Electronic Entertainment, Fall 1980*).

Apart from a subtly patronizing attitude towards audio, that one-shot (we hope) was riddled with inanities and inaccuracies. Some examples:

"If it's worth doing, it's worth doing LOUD." (Mac Davis)

"On (a 2-speed Ariston 'table) is an ADC LMF-1...a straight-line-tracking tone arm." (The arm shown was pivoted.)

"Lacking the magnanimous good sense of the LP- and cassette-mongers in the audio business, who immediately standardized their products, the videotape makers produce units different in virtually every way." (It took "magnanimous" RCA almost 10 years to concede defeat for their 45-rpm disc. "Magnanimous" Philips dictated their cassette's standardization by strict licensing requirements.)

"I...listen to my test pressings on this (Pioneer receiver, ADS 300 mini speakers) because it gives an honest picture of what is recorded, instead of duping myself with enormous speakers (that make) everything sound wonderful." (Burt Bacharach) (That misguided view of what high fidelity is all about kept RCA and CBS in the dark ages for over 20 years.)

Department of Total Overkill

On January 16, we were honored by a visit from Bob Fulton of FMI and John Tuttle of Nexus -- the

designer of the preamplifier that FMI has been promoting for use with their (his?) own products. They brought with them a few items they thought we might be interested in listening to -- briefly -- plus one that was, for the time being, only to be looked at.

Only to be looked at was a cable-to-loudspeaker connector whose sheer bulk almost defied credibility. Measuring $2\frac{1}{4}$ inches long by 1 inch in diameter (overall -- see photo), this brute-force connector was completely gold plated, and used a tapered wedge-in cable plug that we were told could provide, as a pair (1 for



each wire), 7 Amps of current capability. Sounds like a textbook case of overkill, eh? We're not so sure.

Bob has rather a reputation in some circles as a snake-oil salesman, promoting his products more on their mystique than on documentable excellence. (Instructions for his new turntable mat advise aligning the mat's molecules with those of the platter -- a difficult task since the molecules in any casting -- metal or plastic -- are randomly oriented, so "alignment" is not even a relevant factor.) This time, however, Bob produced what looked like hard evidence that his massive speaker connectors had something genuine to offer.

He had two photographs taken from the screen of a 1/3-octave spectrum analyzer. The display represented the *difference* between audio signal voltages at the end of a speaker lead, and at the wires going to a loudspeaker system. Ideally, there should be no difference at all between those

two points. Any measurable difference can only be caused by electrical resistance between those points -- resistance caused by the cable-to-loudspeaker connecting terminal.

The photos showed difference readings with a banana-plug connector and with FMI's brute-force connector. With the banana plug, difference signals ranged from half-scale on the analyzer up to almost full scale. With the FMI connector, the difference was uniform across the band, and amounted to less than 1/20 of the analyzer's full scale. That, we would say, is proof that FMI's connector does a far better job of delivering signal to the speakers than does a banana plug, and would almost certainly sound better. (We didn't get to hear the difference, as time was short.)

Thinking about this at length, it occurred to us that this was a very costly way of doing something that could be achieved just as well for a few pennies. Connections to both ends of the FMI plug are made with screws, for connection to spade lugs or solder lugs. Instead of this high-priced intermediate item, why not just toss out the banana plugs and make the speaker connections the way most of them were made 15 years ago: Directly from the cable to a screw terminal, which would then be soldered directly to the wire going to the speaker. (Better still, why not simply solder the ends of the speaker cables directly to the loudspeaker wires inside the speaker enclosure, thus getting rid of any possibility of a poor connection?)

The FMI Front End

During Bob Fulton's visit, we had an opportunity to audition, for about an hour, a phono front-end consisting of FMI's moving-coil cartridge and step-up trans-

former and the Nexus preamp that FMI recommends for use with its transducers.

We were not able to tell too much in such a short listen, through somewhat unfamiliar speakers, but we did do one comparison test which impressed us muchly. It has long been our contention that it is the function of a cartridge/arm-preamp to make a well-cut disc sound as much like its master tape as possible. (If you don't happen to "like" the resulting sound -- which means neither the disc *nor* the original tape sound good to you -- then look to the rest of your system.) The FMI front end, despite the cheap arm and high mid-range rumble from the Connoisseur table it was used with, came closer to replicating the master-tape sound than any front end we have yet used.

We've been promised the loan of a cartridge, step-up and preamp for testing. Meanwhile, we will hazard a guess that they may turn out to be a winning combination, and possibly state-of-the-art.

SRS Changes

Until now, we have been shipping Stereophile Record Service orders by United Parcel Service surface, at our expense. A number of customers have however complained that UPS deliveries were much too slow (one package took almost 8 weeks to Los Angeles). So, we are now offering out-of-state customers the option of Air shipment by UPS Blue Label.

If you're in a hurry to get your records, just add an additional \$3 to your order payment and specify Air. Your order should then reach you within a few days after we ship it. If you're not in too much of a hurry, omit the additional \$3, and we'll ship (at our expense) by regular UPS.

When ordering, please specify whether you wish us to back-order

records that we don't have in inventory, or whether you would prefer a refund on your order for out-of-stock records. We're building our inventory slowly, but are not yet able to stock many of the records listed in our catalogs. Back-ordering usually takes 2 weeks unless the distributor too is temporarily out of that record. When he must order from overseas, delivery may take as long as 10 weeks.

Shame, Shame, Shame!

We are covered with rue! We have often complained in these pages about subjective testers assuming that their "reference" system was the standard by which all others are to be judged, and wrongly judging those that don't make the ultimate sound as "good." (A typical example is the flat cartridge that is judged too bright because it doesn't it doesn't correct for the loudspeaker's brightness as well as does a cartridge with a brightness suckout.) Now it seems we have been making the same kind of mistake, and with less excuse.

In our report on the M&K Satellites in this issue, we mentioned the fact that the high end sounded smoother than it measured. (The measurement showed a substantial peak at around 15 kHz.) Some days later, we found ourselves making the same observation about the Spica speakers. This started us wondering about something we should have wondered about some time ago.

We went through a few back issues wherein we had shown measured frequency-response curves of loudspeakers -- measured with the Neutrik AudioTracer. Oddly, all seemed to have that 15-kHz peak followed by a rapid rolloff above that.

It was with sinking heart that we remembered, and went back to scrutinize, the calibration curve that had come with our measuring probe microphone for the Audio-

Tracer. There it was. The same 15-kHz hump we had measured from those loudspeakers but seemed oddly unable to hear.

So... The measured frequency response curves for the following items should be reconsidered in light of the fact that the measurement added a 3-dB hump at 15 kHz which does not exist: AKG K-340 headphones, Stax and Infinity headphones (same AKG report), Mordaunt-Short Carnival 2 speaker, Audio Tech HR-1 speaker and, in this issue, the M&K Satellite 1 speaker. Amen.

Videodisc Rentals

Owners of the Magnavox videodisc player should think twice before investing heavily in the recordings. Many are still being plagued with production problems, and the prices of most are still high enough to make one consider whether or not a "blockbuster" feature film is really good enough for you to want to view it more than 5 times.

Magnavision is only the first salvo in the coming battle of the videodisc formats and, while it may triumph simply because it was the first on the market, it may not. To us, the most sensible use of the videodisc is as a loan or rental medium. Rentals, at around \$5 for a feature film, will come first. Eventually, public libraries will start building a collection of videodiscs that can be borrowed, free, as audio discs now are in many cities.

Monmouth Recording

A coupla issues back, we drew your attention to a small firm in Haddon Heights, NJ, that sells one-to-one tape copies (name your format) of original recordings. Now there's another such source. This one calls itself Monmouth Recordings, and its schtick is roughly

the same: Tape masters are recorded to audiophile standards, and copies are available made-to-order. We heard a sample cassette of one of the recordings, and it was pretty respectable. For details, write Ron Freeman, Monmouth Recording Company, 43 Stratford Ave, Freehold, NJ. 07728

The other outfit is Direct-to-Tape Recording Co., 14 Station Ave., Haddon Heights, NJ. 08035. D-to-T now has six selections available, mostly classical. (One is soul/rock.)

Mobile Fidelity Cassettes

With their December announcement that they will offer parallel releases on cassette, Mobile Fidelity is the first of the audiophile recording companies to offer their repertoire in two formats.

M-F's cassettes, according to the introductory hype, will be recorded on BASF Professional II chromium dioxide at "real time" (i.e., at normal speed, not at several times normal as is customary with pre-recorded cassettes.) Actually, how good they will be will depend more on old-fashioned QC than on anything else, and only time will tell that story. We applaud the idea, though, and hope M-F can pull it off.

Even assuming that the cassettes are as good as the state of the art allows, there seems little likelihood that they will provide the kind of fidelity we've come to expect from M-F's discs. Even a real-time disc (cut at 33.3 rather than double speed, as are M-F's) has no trouble surpassing a cassette in high-end range, and most cassette machines aren't all that accurate in playback equalization anyway. But it shouldn't be too hard to make cassettes that are vastly better than most of the ones commercially available. That is probably what M-F is thinking, too.

Absolute Phase

Your comments about absolute phase in the last issue were fascinating but, to me, inconclusive.

I hear the effects of phase reversal from all transducers, including those high-quality headphones from which you observed no change. You may in fact have overlooked an important factor here: Namely, that some people's (maybe even most people's) ears may exhibit nonlinear "transduction" for different directions of displacement, thus making them sensitive to absolute-phase reversal even when no transduction nonlinearities exist in the playback system.

The question, then, is "What is normal hearing? The kind that is linear for both directions of eardrum displacement, or the kind that exhibits nonlinearity through one displacement direction but not through the other?" In other words, if I hear a difference when phase is reversed, but you don't, does that mean my hearing system is better than yours or that yours is better than mine? This is a question that, as I see it, can only be answered by testing a large number of people for phase sensitivity and determining which group (if either) is sufficiently large than the other group to indicate a "norm" for the population.

As you have often said recently, there are many observable phenomena in audio which cannot be pursued any further until someone takes the trouble to do some large-scale investigations into them. I am convinced that a lot of very subtle things that some perfectionists claim to hear are more a result of self-hype than of genuine perception, but that question will never be resolved either until someone puts these people through some

rigidly controlled double-blind tests. And I don't see that happening within the foreseeable future.

W. T. Anderson

Your points about the audibility of absolute phasing are well taken, but it is not so much the audibility (or otherwise) of some of the things some audiophiles claim to hear which bothers us as it is the inconsistency with which so many of these things are reported. We believe they are hearing much of what they claim to hear, but that there has been too much tendency to draw sweeping conclusions from observations which in fact pertain specifically and exclusively to the observer's own system.

Two examples will illustrate what we're driving at:

Some loudspeaker cables cause some power amplifiers to oscillate at some ultrasonic frequency and do not seem to bother other amplifiers at all. They cause a few amplifiers to ring ultrasonically without actually going into full-blown oscillation -- a condition which causes a "hot" high end. Thus, one audiophile may report that the cables in question are useless because they cause his amplifier to shut down, another may report that they "improved" his high end, while another may report that they sound virtually indistinguishable from 16-gauge zip cord. Each is hearing a condition which actually exists, but neither has made a meaningful statement about the audible quality of those speaker cables.

Most turntables suffer more or less from inadequate acoustical isolation, which invites borderline feedback which, in turn, tends to muddy bass sounds. Many audiophiles have reported that a heavy "stabil-

izing weight" on the platter cleans up the bass; others have reported that the added weight makes the muddiness worse. Our investigations have shown that the main thing that these weights accomplish is to lower the resonant frequency of the 'table's acoustical suspension system, which will tend to reduce acoustic feedback in most cases but will make it worse in some other cases. Thus, again, it is impossible to generalize about a stabilizing weight's effect on sound, on the basis of one observation about what it does to the sound. (There is less uncertainty about what a heavy platter weight will do to a platter bearing. It will often chew it up in a rather short period of time.)

Our feelings about properly-controlled double-blind testing are expressed at tedious length in this issue's "As We See It."

Tube Amp Modification

Almost every tubed power amplifier produced to date will benefit from massive augmentation of the storage capacitors in the power supply. Experimenters have increased capacitance until no further improvement could be heard, and generally agree that benefits accrue at least until primary capacitance exceeds the once-ridiculous level of 1000 mFd. The new capacitors should be placed between ground and the center tap of the output transformer, and each should be shunted (bypassed) with a small mylar capacitor (.005 to .01 mFd). Other points in the power supply will operate better with the addition of capacitance. The point of diminishing return seems to be about 300 mfd for each stage preceding the output tubes (the voltage amplifier, phase splitter and driver stages).

The perceived benefits from such efforts are varied. Organ

pedal tones recover their tonality as the typical low-end muddiness of tubes simply disappears. The midrange becomes more precise and defined, and the over-all performance of the amplifier belies its original power rating.

Where does all this capacitance fit? On some amplifiers enough room is provided atop the chassis, but most amplifiers simply don't have enough deck space. In such cases, a separate chassis is built to house the capacitors, and an umbilical cord connects them to the amplifier itself.

This is no job for the utter novice, as the work entails a lethal shock hazard demanding both understanding and extreme care.

Ike Eisensen

Another modification which will significantly improve the high-end performance of any older tubed amplifier (and many more-recent designs) is the addition, across each interstage coupling capacitor, of a 1000 pF polycarbonate-dielectric capacitor (with a 600V working voltage rating).

We must reiterate Mr. Eisensen's warning about the danger of that add-on filter-capacitor bank. We have heard of at least one audiophile who died of a heart stoppage after taking the full jolt of such a stacked power supply from one hand through the other (passing through his chest), several minutes after the amplifier had been turned off. Remember always to discharge the capacitor bank to ground before doing any internal work on such a modified amplifier. It would not in fact be a bad idea to instal a relay and a drain resistor to do this automatically as soon as the AC power is shut off.

Frank V-A Mods

I have recently come across some equipment that I am interest-

ed in buying and would like to have a second opinion if possible.

I am referring to Frank Van Alstein and his modifications of the Dynaco systems. Recently he sent me, on trial, an FET PAT V and his double-400 amplifier, along with a Connoisseur turntable and arm (Gimbel-type) with his E'Ssence phone unit. In doing some critical listening with Woody Lotts from dealer Absolute Sound here in Birmingham and Doug and Harry Francis from Audio Dimensions, we found the preamplifier to be just shy of the Audio Research SP-6 and 6A, but found that the amplifier, although very powerful and consistent, was two-dimensional-sounding and left much to be desired compared to the D110A from Audio Research. I have returned these items to Frank and he has reassured me that he has found a new design which he now calls the FET PAT-6 and has made an improvement on his amplifier to give more-

accurate life-like musicality and dimensionality to improve on the two-dimensional sound which we heard here.

Do you have any comments or information on this? Frank's prices are obviously very reasonable and nowhere near the exorbitant prices of Audio Research equipment, and I am truly impressed with his ability to at least attain a "poor man's" Audio Research level. As a physician being monetarily conscious, I am also an audiophile (or hope to be some day) and feel that if there is an improved version, or a better sounding piece of equipment with a high-price tag to it but definitely superior, that this perhaps is more what I would be happy with in the long run and am willing to pay the extra price. I have read your most recent *Stereophile*, especially on the Fidelity research stuff, and would like to get your opinion on that. As far as the E'Ssence phono

Why Not?

If you subscribe to our views (music first, audio second), you owe it to yourself and to us to subscribe to our magazine. We have some harsh words to say elsewhere in this issue about the subject of freeloaders, and even if the tone of that sounds a little tongue-in-cheek, the subject is quite serious and of not-inconsiderable concern to us. We are not a charity. Neither are we a non-profit organization, despite what our bookkeeper says. We carry a few advertisements in each issue, but we are still basically what we were 17 years ago when we started: A subscriber-supported magazine. We need your support in order to continue being that. Things are particularly rocky during this transition period from never-quite-quarterly to resolutely monthly because renewals now come up only every 3 months, while we must finance the printing and mailing of 3 issues out of pocket during the interim. If you're now a dues-paying member, ignore this and accept our thanks. (Or, maybe, give a friend a gift subscription.) If you aren't, please become one pronto. You can use the subscription blank on the following page, or just send us your check for the proper amount, making sure to supply also enough address to allow the Postal Department to find your mail box. JGH

unit is concerned, I find a couple of things good and bad about the turntable. First of all, the entire turntable costs about \$550, which includes arm and the E'Ssence cartridge as well. The E'Ssence cartridge, when I received the turntable, was probably defective, as it took Mr. Francis and me approximately an additional 2.5 grams (a dime placed on the headshell), to bring back the full range of the sound of the cartridge. We felt that the imaging was good and the range of reproduction was good, but it was just not as smooth or as musical as the Grado F3+ which Harry has been able to demo in his showroom for the last couple of months.

I would appreciate a comment on this and maybe some direction, as I am about to make a major investment.

George B. Moser, M.D.

We have heard some very good

things about the performance of some of these, and some not-too-good things about others. We have also had a few letters from customers who feel (justifiably or otherwise) that Mr. Alstine has dealt unfairly with them. The complaints, it should be added, seem to stem from excessive expectations of the service to be provided, rather than from any apparent incompetence or unfairness on Van Alstine's part.

Our main misgivings here pertain to the fact that we know nothing of the professional qualifications of the person or persons who do the F V-A designs (or mods), plus the fact that anyone who purchases a product from other than a well-known manufacturer may find it difficult to have it serviced if such is required at a future time. (Of course, this can happen if a "well-known" manufacturer goes out of business.)

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4-9

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If you find a F V-A product meets your needs sonically, its attractive price may be persuasive enough to warrant buying it. But we would suggest, first, that you find where F V-A stands on future servicing. Many manufacturers, and their service centers, will not honor a warranty on any component of theirs that has been modified without factory sanction.

We have not been attempting to keep on top of the various F V-A products, as they seem subject to more-frequent "updating" than we can stay in touch with. This goes for the E'Ssence phono unit as well as the Dyna mods you mentioned.

Our advice to you would be to

choose your components from among those in our "Recommended" listings. We're a little conservative that way. (The latest, updated "Recommended Components" list will appear in the next issue, along with the revised and expanded "Top-of-the-Pile" list of recommended recordings.)

Our Digital Ears

Audiophiles who feel there is something basically un-natural about digital audio should pause to consider, at least briefly, the fact that our hearing -- our entire nervous system in fact -- is digital. Our neurons (nerve pathways) do not transmit a nice,

Time Up?

Nope, nobody's up for renewal with this issue either. Which calls to mind once again the unhappy fact that a lot of you readers are still free-loading -- benefiting from our expertise and our long hours of drudgery, slaving over a hot typewriter -- without so much as lifting one limp little finger to help us print and mail the thing or even to help justify your miserable existence as living, listening members of the human race. And if you think we're laying on the guilt a bit much, read on. We're just getting warmed up to the topic.

If you're reading this FREE, having borrowed it from a friend (No friend of OURS, we'll have you know!), you are STEALING! Not from General Motors or Chase Manhattan or Uncle Sam -- they have plenty of money -- but from all those little audiophiles out there whose trust we hold and whose upturned shining faces look ex-

pectantly up to us for their next issue, when and if it ever comes. Think about that. Listen to your conscience, and wallow in abject shame ... or pay for your own damned subscription.

On the other hand... If you are already a paid-up subscriber we wish you to know that we appreciate your support. However, if you just have a coupla more issues to go on your sub, we will be even more appreciative if you could help us through this difficult transition period by renewing ahead of time. (Your renewal will then follow concurrently after the present sub expires.)

Either way, the coupon at the bottom of page 32 will make either alternative a little easier.

Right now, we urgently need a new AC plug (our old one wore out) and some bright new spade lugs for the loudspeaker cables, so your show of support will benefit us all in its own small way. Think of as it as an alms race.

smoothly-varying analog signal; they transmit a series of discrete pulses. These are all of the same amplitude regardless of the intensity with which nerve endings are stimulated (as in digital audio), and only increase in density (firings per millisecond) as the stimulation becomes stronger. They may thus be classified as pulse-density-modulation -- one of the recognized forms of digital data-handling. This digital code is not even restored to analog form in the brain, but is "processed" in digital form.

This is not to imply that digital audio, as it is now, is the perfect way to reproduce sound. I am making this point only to remind us all that digital is by no means as un-natural as it is viewed by those who feel there is something fundamentally perverted about the

act of converting musical sounds into sampled pulses.

Peter Forbes

A good point, but we suspect it will be wasted on those whose digital antipathies are based on little more than gut feeling. As far as they are concerned, you are only confusing the issue with facts.

Perhaps we should reiterate our own "stand" on the digital "question." We had a brief opportunity to use a home-type digital recording system some months ago, recording (among other things) some live performances of un-amplified instruments as well as playbacks from some audiophile discs. We were unable to fault the sound on any count, and that is what we reported in the magazine. We did NOT claim that digital recording is

Reprints and Back Issues

Some years ago we ran off 1000 copies of a softbound reprint of our first 12 issues. It sold so well that we went then and did likewise with our second 12 issues, which is also moving quite nicely thank you. Supplies of both have dwindled gratifyingly, but both are still available for \$25 each (although Volume 1 won't last much longer). If you are curious about how, and why, this whole business of perfectionist audio got started (It was all our fault, remember!), these two reprints are a compact

history of the whole sordid affair. But if you want them, we'd advise ordering these now, because when they're gone, that's that. We will not reprint them again. Who knows? They may become collector's items.

Both, by the way, are 8½ by 11-inch size (That's the way we were!), Volume 1 has 240 pages and covers the years 1962 to '66, and Volume 2 has 290 pages and covers up to Spring '71.

Also available in limited quantities, for \$3 each, are original copies of back issues numbered: (Volume & Number) 3-2, 3-3, 3-5, 3-6, 3-7, 3-9, 3-11, 3-12, 4-1, 4-3, 4-5, 4-6 and 4-8. See the subscription coupon on page 32 in this issue for ordering information.



perfect, only that we had not at that point found anything about it to criticise.

Since then, we have observed some things we do not like about ALL of the Soundstream-mastered discs, and have noted that most of the other criticisms leveled at the sound of digital have also been referring to Soundstream recordings. We still see no reason to use this as a blanket indictment of digital audio per se.

We continue to be open-minded on the subject, although we are becoming increasingly irritated by the nit-picking over miniscule shortcomings some listeners claim to hear from digital's extreme high end when 95% of the reproduction of analog recordings (and digitally-mastered discs) is so appallingly colored throughout the entire audio range. It's time that more self-professed perfectionists regained their perspective and recognized that "fidelity" above 15 kHz is meaningless if a recording/reproduction system can't even reproduce an instrument's normal fundamental/overtone structure recognizably.

The Decca Record Brush

Your last issue has a Library-of-Congress record-preservation specialist recommending the Decca brush for cleaning records. So I go out and buy one, and then you recommend the dust-bug in the next issue. I assume your next issue will list the Decca brush, if you agree with your guest writer.

Peter Aldin, M.D.

The Decca record brush is quite effective in removing surface dust from a disc, but it nonetheless does leave substantial amounts of the stuff in the groove after treatment. To check this for yourself, try cleaning the disc with it, remove as much dust from the brush as you can, then apply the

brush to the disc without gliding it outwards, and lift it straight up off the record. You will see that it leaves a radial band of dust that was not scooped off the disc but was merely being shoved around in the grooves.

Incidentally, the Decca brush is often mis-used, and is then even less effective for dust removal. The brush must be applied to the disc at a sharp angle, so that the bristles are directed against the direction of record rotation. Holding the brush with its bristles vertical will remove hardly any of the surface dust.

We still find we get better pre-play cleaning results with the Discwasher, followed by in-play cleaning with the Watts Dust Bug.

AR Turntable Mod

We read with much interest your article about "Replacing the AR Tone Arm" (issue IV-7). We have been doing a similar modification in which we instal the latest JH arm, the Audiolab, by boring out the bearing well and using a set screw to hold the Audiolab arm and to adjust its height. The disadvantage of your system is that it weakens the subchassis and risks increased resonance.

If your readers are interested we can supply the arm and do the modification for \$270. Our service includes a heavy plexiglass hinged lid.

Mrs. Dee Condon
Sound Aids
396 Riverside Dr.
New York, NY 10025

We're not that concerned about weakening the subchassis; after all, it isn't required to support anything but a lightweight platter and arm. We have not encountered any indication that resonance is increased, although our mod does yield slightly less-effective shock isolation than the original AR system had.

Audio Mart

RATES: Private 10¢ a word; Commercial 20¢ a word. Multiple insertions must be paid in advance; we do not bill for Audio Mart.

FOR SALE

NEW FROM STEREOPHILE RECORD SERVICE: All the records reviewed this month except the Peters, the Chalfont and the Varese-Saraband can be ordered from SRS by mail. We also stock English EMI, Crystal Clear, Sheffield, Electrola, Telefunken, Japanese RCA and Philips, Three Blind Mice, many more. Write for free catalogs, prices, and read the item on page 27 of this issue ("SRS Changes"). SRS, P.O. Box 1948, Santa Fe, NM 87501.

AUDIO RESEARCH D-100 amplifier, magnificent performer, perfect condition, very little use. Best offer. (603) 224-6721.

MARANTZ Model 7 and 8, McIntosh MR-55A, with original manuals. Operative but need new tubes. Jeff Bomer, P.O. Box 1668, Austin, TX 78767. (512) 472-6715.

LUXMAN, HAFLER, CARVER, AGI, REVOX, CONRAD-JOHNSON, KEF, SPENDOR, ROGERS, GRADO, MICRO SEIKI, MARCOFF, DENON, DYNAVECTOR, AUDIO PRO, CHARTWELL. All are at UNDERGROUND SOUND, 2125 Central, Memphis, TN 38104.

MAGNEPLANAR TYMPANI 1U speakers, 6 panels total, \$650 for the pair. McBride (516) 423-2465.

RECORD CLEANING through the mail. The Keith Monks Record Cleaner can restore old or dirty but unblemished records to brand-new condition. Only \$1 per disc (2 sides). Safe for vinyl or shel-

lac -- solvent is Discwasher D-4. Send to KMAL, P.O. Box 1948, Santa Fe, NM 87501.

CONRAD-JOHNSON MV-75 power amp, 3 weeks old, \$650 w/ factory warranty. UNDERGROUND SOUND, 2125 Central, Memphis, TN 38104.

AGI 511A preamplifier modification kit priced at \$125 installed and calibrated. Mod involves replacing high-level operational amplifier with a wideband fast-setting FET Op Amp. UNDERGROUND SOUND, 2125 Central, Memphis, TN 38104.

Pair of FMI J-Modular cubes, rosewood, 5 years old, new condition. Any reasonable offer accepted. (415) 493-8973.

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UNDERGROUND SOUND LABS' Glass TT Platter Pads are ready! This makes the difference between a good turntable and an excellent one. PAD, \$27. 8-oz. disc-stabilizing weight, \$6. UNDERGROUND SOUND, 2125 Central, Memphis, TN 38104.

FOR ITS 1981 Season, the Santa Fe Opera's program will include *La Boheme*, the *Barber of Seville*, Stravinsky's *Rake's Progress*, R. Strauss's *Daphne*, and Hindemith's *News of the Day*. For season schedule and ticket-ordering information, write: The Santa Fe Opera, P.O. Box 2408, Santa Fe, NM 87501.

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