AUDIO VERITY
If four irrepealable screws are dropped, three will be found.
Volume V • Number 8

October 1982

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As We See It

The Truth About High End

The October issue of Stereo Review published what must be hailed (or derided) as the first reasoned assessment of high-end audio ever presented in a mass-circulation hi-fi publication. (If you missed that issue, we suggest you order it from Ziff-Davis Back Issues, P. O. Box 640, Holmes, PA 19043. The cost is $3, total.)

We disagreed with a few of the author's points, but our main gripe about the piece prompted a letter to Stereo Review. This is what we wrote:

I was irked by Alan Lofft's article on perfectionist audio ("High-End Stereo: Sense and Nonsense," October 1982), but probably not for the same reasons some other under-grounders will be.

Actually, I thought the article was excellent, and do not take issue with most of what Mr. Lofft said. It was, sadly, all too true. What I DO resent is Stereophile magazine being tarred with the same brush which blackened the names of some of the more deserving members of our kind.

Among the subscriber-supported "undergrounders," Stereophile is almost alone in having resisted the urge (compulsion?) to be carried away by a preoccupation with trivia. We do NOT rhapsodize over the smallest increment of improved definition, imaging, transient response and subsonics, and for not so doing we have earned the scorn of most of the other "undergrounders".

Most of the minutiae by which the lunatic fringe compares competing products are in fact less significant than differences we often observe from one sample to another of a given product, which is why we are less inclined to pick nits than are some other undergrounders. We have always contended that accuracy through the middle range, encom-
passing 90% of the music, is the FIRST criterion for a music-reproducing system, and that all other considerations are secondary. If a system can't cut the mid-range mustard, we don't much care how well it does anything else.

I am still not convinced, one way or the other, of the audio purist's claim that amplifiers which measure the same can sound different, because the measurements referred to are often too rudimentary to reveal many of the MEASURABLE differences between components. But observation has convinced me that amplifiers which measure identically on simple THD and frequency-response tests do indeed sound different. When we describe the ways in which two competing amplifiers differ in sound, we feel we are performing a much more valuable service for our readers (who are advised to mate components with ones that COMPLEMENT their sound) than we could by merely quoting test results and saying they were "splendid."

Throughout our entire 20 years of publication, we have endeavored to maintain as high a level of technical accuracy as we can, and to eschew any taint of mysticism, occultism or spiritualism. And although we feel that Stereo Review is being too reactionary by denying the validity of subjective testing, we also feel that much of what is reported by the underground press to be audible and significant is in fact nothing more than self-deception (autohype). We are ashamed of what subjective testing has become and what it has done to audio testing, and our frequent potshots at the lunatic fringe is a major reason why our circulation is as small as it is and as sane as it is. But we still insist that subjective testing has its place in audio reporting. Yes, it has yielded some bizarre flights of obfuscatory fancy, but it IS possible to describe reproduced sound in terms understandable to all.

We were the first magazine to attempt to do this, because we felt it made more sense to listen to and try to describe a component's sound than to try to interpret its measurements in terms of their probable effect on the sound.

Thus, a loudspeaker might be described as murky, aggressive, retreating, sizzly or squawky, and 90% of the readers will be able to visualize what is meant. Middle-range colorations can often be likened to human vowel sounds -- oo, ah, ih -- which objective measurements will show to have the same mouth-cavity resonant frequencies as the loudspeaker peaks which cause the colorations. As imperfect as subjectivity may be, we feel it is more meaningful to a prospective buyer than any number of measurements.

Actually, distortion measurements CAN tell us much about a component's sound, if carried beyond the simplest total-harmonic-distortion presentation. Second-harmonic content determines how "alive" and close-up the sound seems, while high-order odd harmonics (5th, 7th, 9th) add harshness and artificial "detail" to the high end. It is the relative distribution of harmonic distortion components which makes tubed components more agreeable to many listeners than solid-state components, despite the higher total-harmonic-content of the tubed equipment. (THD does not show that tubes produce little high-order distortion, transistors a lot more of it.)

These are the kinds of objectively demonstrable differences Stereophile is concerned with, and are why our equipment reports are relevant to music listeners who relate more to live-music sound than to objective measurements. They are also why we resent being classified as a crackpot cultist magazine, along with the ones which obviously are.

J. Gordon Holt
C J Walker CJ-55
Turntable


Now, THIS is the kind of turntable we've been looking for: A real cheapie with perfectionist performance aspirations.

On first glim, it looks like an odd admixture of quality and junk. The platter (supplied without a mat) is made of a dense plastic material called Tufnol, which is supposed to provide a low-impedance interface between it and the disc, to facilitate absorption of stylus-induced shock waves from the disc. Quality. The underlying frame, which fastens the tone-arm board to the platter, is made of wood, which LOOKS junky. And in fact, the underlying principle here is going to offend a lot of perfectionists enough that they won't even bother to consider this turntable, which would be a shame.

Most of the cartridges which audiophiles like these days tend to have low compliance.* The fact that this beats the daylight out of their recordings does not concern them, because few true-blue audiophiles play any disc that is more than a year or so old anyway. Outmoded technology, you know. Because of that low compliance, though, much of the vibrational energy imparted to the stylus tip gets transmitted to the cartridge body and thence to the tone arm.

If the arm is not rigidly clamped to the turntable, through the underlying frame, it will vibrate slightly on its own and, since the turntable and disc are not a party to those vibrations, they will produce spurious stylus motions relative to the cartridge body. The result is a slight but audible smearing of detail. (The same thing occurs as a result of airborne sound waves impinging on the disc surface, but in this case, it is the disc which vibrates independently of the arm and cartridge. This is not however a significant phenomenon at listening levels below virtually ear-shattering.)

The perfectly rigid arm-platter coupling, while a great idea in

* Compliance is the ease with which a cartridge's armature can be deflected from its at-rest position. Low compliance makes the stylus harder to move, and thus puts more stress on the walls of heavily-modulated grooves.
principle, is impractical in actuality. All frame materials flex and ring to some extent, and efforts to clamp a cartridge rigidly to a headshell via two small screws often lead to the stripping of threads or breaking of screws.

Personally, I do not care for low-compliance cartridges because, besides being an audiophile who likes superb sound, I am also a record collector who finds himself listening (for enjoyment) to old recordings more often than to recent recordings. I have always had an abiding concern for record wear, which is why I favor high-compliance low-mass cartridges (and is why most of my record collection, some dating back to the late 1940s, is still in excellent condition). Which brings us peremptorily back to the C J Walker turntable. Designer Colin Walker apparently recognized the futility of striving for a perfectly inert, rigid arm/platter coupling, and went for one whose practical imperfections would SOUND good. Instead of a rigid metal frame, the CJ-55 uses hardwood strips -- an approach distressingly similar in principle to those happily-forgotten loudspeakers that used wooden panels as diaphragms, to "reproduce sound like a violin" or a cello or what have you.** There are two fundamental differences here though. The wood in the CJ-55 is NOT a reproducing element, and this turntable DOES sound good -- if indeed one can detect any sound at all from it.

I used a Shure V-15-V and an Astatic MF-100 for my tests. Installation was easy, thanks to the detachable arm board and a shim that is provided to adjust the height and levelling of the platter/arm assembly. (Hint: Place the shim under the platter next to each screw, turn the screw until the platter rubs on the shim, then back off the screw until the rubbing stops. Rotate the shim and adjust the adjacent screw for several turns around the platter until both height and levelling are correct.)

Running speed was very accurate, with the error estimated at less than 1/4% slow, but platter torque was extremely low. The added drag of heavily-modulated outer grooves dropped the platter speed by another 1/4%, which I defy anyone to hear. (Even listeners with perfect pitch have a hard time distinguishing a sustained pitch error of 1.5%. Wow or flutter, on the other hand, can usually be detected down to 0.2%.) A Dust Bug in the outer grooves dropped the speed by an intolerable 3%, and there was not even enough torque to keep the platter rotating when cleaning with a Decca brush. A Discwasher pad brought it to an almost-instantaneous halt. Fortunately, the suspension was stiff enough to allow one to use a finger on the label without bottoming out the platter. Wow and flutter were extremely low, rumble very but not extremely. A lower-middle range mechanical hum was faintly audible under the disc surface noise at high listening levels.

Acoustical and shock isolation were somewhat better than in any turntable of this price that we have tested since the AR XA, which is still unequalled in those respects for under $1000. When subjected to heavy jouncing, as from a flexible floor, the unit continued to play undisturbed, even though the entire suspended assembly went into a rapid (ca. 50 Hz) rocking mode about an axis from platter spindle to tone-arm base.

Side-to-side shocks had no effect on the unit unless severe, but front-to-rear shocks threw everything into hysteries, bouncing the stylus several times across the disc. This was found to be related to the stiffness of the tone-arm cables which, exiting
through a hole at the rear, tended to shoot down the isolating properties of the suspension system. Since ALL tone arm cables these days are similarly heavy (to the SME), this will be a problem with any tone arm, although not an insoluble one. (The problem is most severe with light-weight systems like this, least with heavy suspended assemblies. The Walker is a light one.)

This is not the first time I've encountered otherwise adequate turntable suspensions that are spoiled by the designer's refusal to acknowledge the realities of tone-arm cabling. And the solution is so simple that there is really no excuse for designers to continue ignoring the problem.

The solution, as we mentioned in connection with our article (many issues ago) on replacing the ARXA tone arm, is to use lightweight wires to span the hop from suspended frame to turntable base. In fact, C J Walker could do worse than to make available (at a small extra cost) an purpose.

While I have no strong convictions about what to do about stylus-induced shock waves in the disc, I do NOT feel the answer to be a hard, bare platter. Like it or not, discs are NOT precisely uniform in shape. Many are more or less warped or dished (Chinese coolie-hat style), and as a result, some will inevitably contact parts of the platter so lightly that any airborne sound waves will cause them to RATTLE against the platter, causing more signal disruption than any imaginable amount of undis sipated shock-wave energy in the disc. A spindle clamp will sometimes help, but will just as often make matters worse by raising the outer edge of the disc farther from the platter surface. So I STRONGLY urge the use of some kind of soft mat between this platter and the disc.

**Tonearm Cable Modification**

Most tone arms these days use the same small 5-pin connector that inserts into the bottom of the tone-arm pillar, and the arm/plug wiring appears to be standardized. A few arms (such as the SME III) have a pair of RCA output receptacles under the base. Thus, two simple adaptors would suffice to cover the vast majority of arms. These are shown below.

The plug or plugs would attach to the arm base, and the bracket mounting the receptacle(s) would screw to the inside of the turntable base, as shown. The rest of the run, from phono unit to preamp (or step-up), would be made by a conventional tone-arm cable or a pair of RCA-tipped audio interconnects.

For those who already own the Walker 'table, or others with a similar problem, the suspension isolation can be improved by cutting and soldering, as shown in the figure.

The bridging cables are lightweight shielded cables, sold by most electronics supply stores for use as replacement in tone arms.
Because the Walker's platter is already rather high, and tone arms are generally more stable when their base is not raised high, I suggest using a skinny mat like the felt one supplied with the Dudley glass mat or with the Linn-Sondek 'table, but since such mats may be hard to find, any not-too-thick soft mat will do.

Now that I have levelled half a dozen complaints at the C J Walker, I am obliged to report that, despite everything, it is an excellent turntable -- notably superior in sonic performance to anything else in its price class that I've encountered. Even without the proper suspension isolation, it produces a more detailed, better focused, and less colored sound from discs than I'm accustomed to hearing from a lot of costlier turntables. At a hair under $400, it is an excellent buy for any audiophile who is not irrevocably committed to low-compliance cartridges. With those, I suspect that the wooden frame would be audible as a certain warmth that many listeners would like while others would condemn as a "euphonic coloration."

There are of course better 'tables, but as of now, I do not know of one priced at less than $800. For $395, this deserves (and hereby gets) my wholehearted recommendation. JGH

Packburn Audio
Noise-Reduction Devices

Transient and continuous noise suppressors. Dimensions: (Both models) 19"W by 6-3/4"H by 11"D, overall. Prices: Model 323 (Stereo/mono), $2450; Model 103 (Stereo only), $1800. MANUFACTURER: Packburn Electronics, PO Box 335, Dewitt, NY 13214.

The KLH TNE-7000A and DNF-1201A (both reviewed in recent issues) are probably, as of now, the Cadillacs of noise-reduction units. The Packburns are the Rolls Royces.

To a listener who is more into audio than music, it is pointless to explain why many record collectors (and music archives) treasure recordings that were made during the Paleozoic age of recording. Purist perfectionists may thus prefer to skip the rest of this report, because that's what it's all about: the gilding of sonic sow's ears. Readers with one foot in each camp -- audio and record collecting -- may skip this report only at the risk of passing up an opportunity of a lifetime: the opportunity to hear old discs the way they could have sounded when brand-new, if not better.

Both of these devices use three kinds of noise reduction, which Packburn calls switching, blanking, and dynamic filtering. Dynamic filtering, used for the reduction of continuous high-frequency noise, employs a signal-controlled high-frequency cutoff to close down the treble range during quiet passages (when noise is most audible) and open it up during loud treble passages, when the signal tends to mask noise.

Packburn's dynamic noise filter differs from most in that it has two preset HF-cutoff controls: one determines the maximum bandwidth the system passes during the loudest passages, the other the minimum bandwidth it closes down to during the quietest passages. Both settings are made with continuously variable controls rather than switches, for precise adjustment. A front-panel switch also offers the option of a fixed high-end cutoff which can be preset to any frequency, from 3 kHz to wide open, by a separate continuous-range control.

And there's an additional feature. A knob marked "Control Dynamics" adjusts the speed with which the noise filter opens up in response to
signal transients, to avoid dulling due to loss of transient attack. A front-panel LED flashes intermittently when that control is set so as to pass the transient information. Since the dynamic noise filter is located AFTER the transient noise suppressor, its transient "gate" cannot be triggered by disc-surface ticks and pops.

The transient noise suppression requires a stereo input signal, even from mono discs, because the click detection process involves evaluation of the ultrasonic-content difference between the left and right groove walls. Nearly all click-producing groove blemishes are on one side or the other of the groove. Thus, a click is likely to be much stronger in one channel than the other. The Packburn distinguishes clicks from program transients by their rise time (a click will produce more ultrasonic energy than any signal modulation). If the rapid rise is in one channel only, the device switches both outputs to the other channel for the extremely short duration of the click. This is the "switching" action.

If the device senses that the rapid rise is in both channels, it momentarily shuts OFF both channels and inserts in the "hole" a split-second's worth of the signal immediately preceding the click. This is the "blanking" function. Separate controls for each function adjust the rise times to which each will respond.

The cartridge must of course provide stereo outputs. (Otherwise, there can be no "difference" between left and right, and no vertical output when reproducing lateral modulation.) A front panel switch reverses the polarity (phase) of one input channel so that the device can be used with old vertically modulated discs.

The transient noise suppression is equally effective on mono or stereo discs. In mono, the two input channels from the cartridge are merely mixed together after the suppressor has done its thing, to further reduce surface noise and to minimize pinch-induced distortion.* In fact, the two Packburn models are essentially identical except that the stereo inputs are permanently combined in the model 103 and fed to a single dynamic-noise filter. The Model 323 has an extra Stereo position on the same switch that provides only lateral and vertical modes on the 103. Both units have three front-panel meters, two to monitor input signal level (which must be preset once and balanced

* Pinch effect was due to a narrowing of the groove whenever it curved sharply to one side or the other. The narrowing "pinched" the stylus tip between the groove walls, forcing it to ride upwards in the groove. This produces audible distortion from a vertically responsive cartridge (such as a stereo cartridge) unless the two channels are mixed (A + B) to eliminate the vertical output.

Pinch effect is of negligible importance with modern discs because of the narrower groove and because cutting styli are now shaped so as to minimize groove narrowing on sharp curves.
between channels), the other continuously indicating the upper frequency limit of the dynamic noise filter.

Since the transient-noise-sensing circuits rely on ultrasonic energy, they are most effective when the input signal has no high-end rolloff. And since the Packburn has no phono preamp (designer Richard Burns feels others can design better phono preamps than he can), this means using a custom-modified preamp with no RIAA high-end rolloff. The requisite rolloff is then provided by the Packburn devices, one of which (the 103, stereo-only, model) has a two-position switch for Flat or RIAA, the other (the 323) having a 6-position switch to match most of the high-end rolloff characteristics that have ever been used.

You can modify your own preamp accordingly (or have someone else do it), or you can buy, through Packburn, a modified PS Audio Model IIA preamp which, besides the flat high end (switchable to RIAA rolloff if desired), also has a seven-position bass equalization switch that can EQ (most of their output above 8 kHz is garbage) that it would be better to use a preamp which rounds-off transients and produces minimal high-order harmonic distortion. This would imply a tubed preamp, and that is what I feel Packburn should have chosen. Nonetheless, the PS does a more-than-creditable job.

So, how does it all work? Astonishingly well! The dynamic noise filter is even more effective (and unobtrusive in its action) than the KLH/Burwen DNF-1201 reviewed here by Bill Sommerwerck (Issue V-6). It removes virtually all hiss except the rushing variety which extends well down into the middle range, and has remarkably little detrimental effect on the signal. Like the KLH, it is most easily confused by material with strong transient attacks such as piano and harpsichord, whose attacks open up the high end and then die away almost instantly, exposing the hiss until such time as the filter clamps down again. This amount of time is perhaps 20 milliseconds; long enough to be noticeable, not long enough to be extremely irritating.

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But it's the Packburn's tick-suppressor that almost defies belief. Not only does it completely erase an estimated 95% of the small to medium sized surface ticks and pops, it also eradicates the most humongous bangs imaginable! As an experiment, we put on a cracked 78-rpm disc, put a book match under the trailing edge of the

The Packburn 323, with 6-position treble rolloff switch (center bottom).
crack, to make it higher than the leading edge so that the stylus would encounter an upward step. We played it "straight," with the Packburn in-circuit but its suppressors switched out. Predictably, it produced the classic cracked-record bang with each revolution. Then we switched in the tick suppression, and the noise was GONE! Every trace of it! Old discs whose surfaces sounded like frying bacon came out sounding like tape -- not particularly quiet tape, but tape nonetheless, rather than bacon. And the dynamic filter reduced even that to a much lower level, as

**Phono Equipment for Old Records**

Because 78-rpm discs are often severely warped, and rotate at high speed (increasing the frequency and intensity of warp signals), they are best played with a low-mass, moderate-compliance cartridge in a low-mass arm. If you care to optimize these parameters -- and you should take the trouble to -- the bass resonance should be set for around 30 Hz. (This is also ideal for mono LPs and most early stereo discs.)

A SMALL amount of tone-arm damping is also a help in preventing groove-hopping from warps. Anti-skate bias should also be available and easily adjustable in the arm, to help cope with those few discs which persist in skipping grooves (usually inwards). Outward skipping (repeating) can often be stopped by removing all bias (which exerts outward pull) and propping up the whole turntable at an angle so as to make the arm swing towards the spindle.

The amount of surface noise from any given old disc is often dramatically effected by the tip radius and shape of the stylus used. Pre-LP’s, for example, were made for all sorts of different stylus sizes, and usually sound best with the proper stylus. Most microgroove discs do well with a 0.7-mil spherical, but worn discs of all speeds frequently benefit from the use of an "off-sized" stylus that may play a part of the groove walls which somehow escaped destruction from early playings.

Because of the likely need for frequent stylus changes, it is recommended that the cartridge have a user-replaceable stylus assembly. It is also wise to avoid audiophile-type cartridges having strong high end response to beyond 20 kHz, as these will aggravate the spurious noise and distortion from old discs, while contributing nothing of value to the sound quality. I recommend a recent-model Shure or Stanton with a specified tracking-force range of from 2 to 5 grams. The old Shure M-44, very popular with collectors, is NOT recommended because its somewhat peaky high end will exaggerates the already-excessive surface noise from old discs.

Both Stanton (see the letter in this issue) and Shure Brothers in the US make 78-rpm styli for several of their cartridges. Shure offers a 0.7-mil, and Stanton a 1-mil and a 2.7-mil (for most latter-day European 78s). If you find the need for other sizes, or wish to use other cartridges, most collectors (and archivists) recommend as the best source for exotic styli an English company called Export Pickups, Ltd., at P.O. Box No. 3, Ashstead, Surrey, England KT21 2QD. Write to Mr. W.D. Hodgson, specify the cartridge you use, and either state your specific stylus-tip needs or, if not certain, ask for his recommendations for the discs you plan to be playing.
with the hiss from actual tapes and noisy FM broadcasts.

Of course, with all that going on, it MUST foul up the sound, right? Nope, it doesn't. It is possible to misadjust some of the Packburn's controls so as to produce some nasty effects, but correct adjustment eliminates this problem. With everything turned off but still in the signal path, there was a very, very slight loss of transparency and a slightly greater loss of depth, but complaining about that is rather like complaining about the scar after you're cured of skin cancer. No one in his right mind is going to use this for audiophile discs in good condition anyway. It's for those older or more brutalized discs whose surface condition makes them irritating or virtually impossible to listen to. It can, literally, give such discs a new lease on listening.

We can understand why this device is so popular with recorded-music archivists. (Packburn will happily supply a list of professional users, for the edification of those who like to buy into esteemed company.) And while its price might seem to mark it as strictly professional, serious private record collectors might do well to ponder the present value of their record collection before dismissing something that will make practically all of those records a lot more enjoyable to listen to (and a lot more rewarding to copy on to tape).

Nothing can make a 1930's 78 sound like a Proprius, but if you're attracted by the idea of making those older recordings sound as good as they possibly can, there is no better choice at any price than a Packburn.

JGH

Orpheus S-505
Speaker System


One of our recurring fantasies is to discover a $250 per pair loudspeaker system that sounds like $2500 worth of speaker system. The Bill Reeds, reviewed here a couple of issues ago, were a step in the right direction, but a rather short step. So are these.

My first reaction to these was "My God, they sound so DISTANT." After having listened to them for several hours, it is STILL my reaction. A solo voice recording miked from a distance of one foot sounded about five feet away. An orchestra miked from 15 feet sounded about 30 feet away. And so on. The effect was not at all unpleasant, and did in fact give large-scale recordings a lovely sense of spaciousness and ambience, but I found that the remoteness with most program material, plus a certain murkiness in the sound, diluted the emotional impact of the music. But then, I have made no secret of the fact that I am tired of withdrawn-sounding loudspeakers.

Overall spectral balance was quite remarkable! These little things have the weight and richness of very large systems, but they sure don't have the large system's power handling capability. Despite their 100-watt power rating, they will not reproduce wide-range material at levels of much over 83 dB without bottoming out on heavy bass material, and bass overloading (muddiness) was fre-
quently audible at levels substantially below the bottom-out point. (83 dB is the level audiophiles play their systems when conversing. It ain’t very loud.) Low-end capacity was in fact the Orpheus’s only significant shortcoming.

Higher output levels could be obtained with tubed amplifiers, causing these to deliver less power at really low frequencies. But in view of the cost of tubed amps these days, I think it unlikely that they would be selected for use with $250-a-pair loudspeakers. I suspect that that 100-watt figure may approximate the driver burnout point; cause other square-cornered systems of this size have NOT exhibited that problem.

The manufacturer claims a low-end 3-dB-down point (cutoff) of 65 dB. This was conservative. Our measurements, and our subjective reaction to the low end, indicated effectively flat low end to a bit below 60 (5 Hz makes a difference at the low end) and usable bottom to around 45, which is impressive performance for such diminutive speakers.

Highs were a little bright and sibilant, extreme highs were virtually...
absent, and the middle range had several small but audible colorations, the most notable being what sounded like (and measured as) a large hole at the woofer/tweeter crossover point. This suggested that the drivers may be mis-phased through that range, which (if true) would explain both the remoteness and the slight turgidity.

These have some nice things going for them, but they're not among my favorite $250 systems. JGH

**Dynavector 17D Cartridge**


The 17D is the nominal replacement for the 100D (which was the first diamond-cantilever pickup, and still remains in Dynavector's product line). The cantilever has now been reduced from an already short 2.5 mm to an incredible 1.7 mm! This 32% reduction makes possible the use of an industrial rather than gem-quality diamond, substantially lowering the cost ($650 versus $1000).

The shorter cantilever should mean lower moving mass, with a consequent improvement in high-frequency tracking ability. And in a few cases I did hear cleaner tracking from the 17D in comparison with Dynavector's Ruby. But the designers have traded off some of the reduced length for greater armature thickness, further reducing any tendency for the cantilever's motion to break up into lateral vibration modes. Therefore the mass reduction may not be as great as the length reduction would suggest.

The reduction of cantilever length is in fact a mixed blessing, as all Decca owners know. The cartridge body now sits so close to the disc that it becomes especially susceptible to banging on small, sharp warps.

This proclivity cannot be eliminated except by immobilizing the cantilever, which would eliminate all cartridge output! But the problem can be substantially alleviated by either reducing the compliance or using a lower-mass arm. Dynavector went for reduced compliance, so the 17D requires a higher tracking force (2 grams) than the 100-series cartridges.

My current reference cartridge is Dynavector's latest Karat Ruby. In addition to the slightly better high-frequency tracking alluded to earlier, the 17D was superior to the Karat Ruby in the following areas: IMAGING. The 17D showed a noticeably wider and somewhat deeper sound field. There was less of a tendency for instruments to bunch up near the center, and a smoother and more convincing spread of sounds from side to side. Direct sound never appeared beyond the lateral limits of the speakers, but with the 17D, the ambience "opened up" so as to sometimes seem to extend beyond the speakers.

There was also a subtle im-
improvement in the way the ambience "related" to the direct sounds. Overall, imaging was slightly more stable, precise, and focused with the 17D. DETAILS. The 17D had greater high-frequency detail and aliveness than the Ruby. This was audible even on mono Toscanini recordings. (Franklin Mint ones, NOT Victrola.) Note that the 17D has slightly LESS output in the top octave than the Ruby, which is inconsistent with the belief that MC enthusiasts are merely being seduced by a rising high end. In my review of the Sony XL-88D, I noted that it revealed less detail than the almost any record, regardless of recording quality or vintage, the "mechanical" or "electronic" character of the sound was noticeably reduced. It sounded as if one stage in the signal-processing chain had been removed. (This became more noticeable on extended listening, but was still plainly audible in the first comparisons.)

The degree of improvement with this cartridge is such that records which once sounded slightly artificial now sound slightly realistic. It was a pleasant surprise to find just how natural so many different recordings could sound. The difference is not gross, just noticeable and rewarding. The best thing I can say about the 17D is that some commercial, high-tech records now sound comparable to my own analog tape recordings. It is the kind of cartridge that makes me think the phonograph record JUST MIGHT be a decent recording medium. Gordon, with a pickup of this quality, HOW can you resist moving-coil cartridges?

Our DV-17D, which arrived shortly after Bill's report, fell somewhat short of his sample. Both Larry and I felt that the cartridge did certain things very well, along the lines of the virtues referred to in Bill's article. Unfortunately the sample we received had mid-range tracking problems which showed up on even moderately cut records. Use of

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AudioTracer response curve of the DV-17D is the flattest ever measured. The upper curve spans the range of 20 Hz. to 20kHz; the lower 500 Hz. to 50kHz.
tracking test records revealed worse tracking in the right than the left channel, as well as uneven separation figures for the two channels; these kinds of results are just what you would expect from a defective sample. We returned ours, and are awaiting a replacement from Dyna-

vector. In the meantime, we advise readers considering purchase of this cartridge to pay careful attention to potential tracking problems their sample might have; or alternatively to hold off their purchase until a followup report. JGH

KLH Models 150 and 160 Speaker Systems


Further implementing our pledge to report on more "affordable" equipment, here are two systems priced near the bottom of what we consider to be minimal-fi level. The Model 150 costs $380 a pair, the Model 160 costs $250 a pair.

Saving the spinach 'til last, I auditioned the 150's first. My initial reaction was "Pneuhhh!" These are not your average audiophile loudspeaker. By comparison with, say, the cheaper Bill Reed 6-02's, the KLH 150's are aggressive, up front, boomy, sizzly, and as sharp as tacks. The first evening they were set up, Larry came over for a brief listen and solemnly proclaimed them to be excremental. "An outright pander to the hard-rock set" was the way I was prepared to dismiss them when I got around to writing this report.

However, I had some other work to do before getting to the 150 report, so I played some old tapes and several discs, and suddenly realized at one point that I had goosebumps on my arm. I sat down for another long, undistracted listen.
to these little horrors.

Yes, their mid-bass WAS thumpy and hung-over, deep bass was absent, extreme highs were absent, imaging was vague (but remarkably stable), and the high end tended to turn to gleaming steel at high listening levels. But I was hearing other things in the sound that I hadn't heard from any below-$1000/pair audiophile speakers for quite a long time. Brass instruments sounded like brass instruments, cellos and violas and bass piano strings had a gutsy authority that I rarely hear outside a concert hall any more, and the sound as a whole had an emotional impact, even at moderate listening levels (ca. 90 dB), that is rarely achieved from multi-thousand dollar systems unless the volume tops the 100-dB mark.

"Watch it!," I admonished myself. "You're getting carried away. You like what it does well so much that you're going to overlook what it does crumlimly and make a complete ass of yourself in print. If you give a good report to a product from an old, established (establishment!) company, all audiophiles will heap scorn and derision upon your head. Enid Lumley will write you an incredulous but sympathetic letter, HP will report that excessive maturity has rotted your frontal lobes, and Stereophile's standing on every 'Rating-the-Undergrounders' list will drop three places." I decided to knock off for the day.

Next day it rained, the basement flooded, both children threw supersnits before school, and I sat down at the word processor in just the mood to demolish some promising but fallible product. The writing came easily, it was a devastatingly witty report, and only the thought of a libel suit prompted me to turn to another pair of speakers for the rest of the day's testing. Tomorrow was better.

First, I must say that I very much wanted to give these a good report. Their price is certainly attractive, I still like a lot of what they do in the middle range, and I consider middle-range performance to be the first criterion of any loudspeaker. But a not too extended listen showed that these simply have too much of a good thing. Those middles that sounded so great a couple of days ago soon began to obtrude, along with the intrusive boominess and the obtrusive high-end sizzle. I also began to notice an occasional buzz, which sounded like a dirty stylus but wasn't (it happened with tape too), from certain mid-bass sounds. (We also heard it from the sweep tones used to run the frequency-response curves.) In short, the 150's negative attributes are so significant they cannot outweigh that one positive. With the exception of their outstand-
ing image stability (and unusually low-resistance input-cable connectors), there is NOTHING a critical listener values that they do well. Thus, we come full circle -- from speakers with fine middle range and not much else, through speakers with fine everything else but rotten mid range, and back to square 1.

![Frequency-response curve of the KLH 150 does not reveal mid-range hump.](image)

Interestingly, the frequency response measurements did NOT tell the whole story about the 150's sound. The high end sizzle and absence of extreme highs are reflected in a narrow, rather severe peak at 12 kHz followed by a rapid rolloff, but the boomy bass and forward middle range do not show, which leads me to suspect they are related to low system Q (damping) rather than to response anomalies.

These might make very nice little rock speakers, but I wouldn't know because I'm not into the kind of aberrations rock listeners like. They are NOT the kind of speakers most of our readers will like. I'm sorry. I hoped they would be . . .

What, then, about the Model 160's, priced even lower than the Bill Reeds? At about $150 less than the 150's, these just HAD to be really terrible. Surprise! They're BETTER! The high end is the same: sizzly at
all volume levels above moderate, and totally devoid of extreme top (what little there is is masked by that infernal tizz). But the middles are in better control, there is less bass boom, and they actually seem to go LOWER than the larger 150s. They don't, of course, but it's that masking phenomenon again. Without the mid-bass boom, the lower bass is more audible. Nonetheless, the general impression from this speaker too is of heaviness and lack of "snap." Of the two, the 160 is the best buy for the money, but it is not as accurate a reproducer as the slightly more expensive Bill Reeds. So, the Reeds are still my first choice in this price class. JGH

Loudspeaker Response

We have been improving the accuracy and repeatability of our frequency-response measuring techniques during recent months and, for this reason, the curves we publish now and will publish in future are not directly comparable with those published in previous issues.

All curves are now composites, comprising data gleaned from several curves. In order to eliminate a lower-middle-range response dip caused by the proximity to nearby surfaces, the range from 100 Hz upwards is measured with the speakers equidistant from three room walls and halfway between floor and ceiling. Response below 100 Hz is measured nearfield (with the probe mike near the woofer) or, in the case of vented speakers or ones which radiate bass from a very large area (electrostatics, for instance), by means of a group of measurements taken with the speakers and the probe mike in several different locations in the room. The range from 200 Hz upwards is measured with the microphone several different distance from and heights in front of the speaker. All of the curves for each part of the audio range are then averaged to produce the published response curve. Only one speaker is measured. Low-frequency response in actual use can thus be expected to be slightly better than we show.
ABX Switcher

In our recent report on the ABX comparator, we complained because the manufacturer did not make available a relay module that would (1) switch both inputs and outputs and (2) handle adequate amounts of loudspeaker-switching power. Since then, we received the following Comment:

At the time the system was furnished to you, the only relay available was the line-level RM-1. The development of a relay module that would switch cartridge, line and speaker levels without introducing grounding problems, distortion or clicks proved to be a herculean task. Indeed, more engineering time has been spent on our new RM-2 Relay Module than on the Comparator "brains box" and RM-1 module combined.

The cartridge and line-level sections of the new relay module use the same type of relays you reviewed. In the RM-2 however, they switch inputs and outputs of both high and low sides. Thus, a preamp can be totally switched out of the circuit and a new one switched in. Separate 30-amp-rated ultra-low-contact-resistance speaker relays switch both sides of high-powered signals. All relays are driven by a six-phase sequencer to open and close them with the proper timing for a click-free changeover. Internally, wiring capacitance is minimized and no crimped or mechanical connections are used. Now it is possible to perform unusual tests such as a comparison of passive versus electronic crossovers on the same pair of speakers. The RM-2 is available for $495.

As you have pointed out over the years, listening is the ultimate test of any component. Instrument measurements are only relevant to the extent that they correlate with what we hear. Better audio equipment will in the final analysis be a result of better listening, not better tests.

David Clark, Director
ABX Company
Troy, NY

That clears up one of our two main criticisms of the ABX system. The other one -- inability to match the gains of two power amplifiers -- is best solved, not by another addition to the ABX equipment, but by the insertion of hang-on input level-set controls right at the inputs of the highest-gain amplifier. (Adding these to ABX's switcher would necessitate coupling the pots to the amplifier through shielded cables, whose capacitance would tend to roll off the extreme high end.) JGH

SOLID STATE

Santa Fe
Albuquerque
Cul bore

"SOLID STATE"
Nakamichi T-100
Audio Analyzer

A self-contained audio analysis system. 13½"W x 3"H x 9½"D. 9½ lbs. Price: $990. MANUFACTURER: Nakamichi USA, 1101 Colorado Ave., Santa Monica, CA, 90401.

The T-100 was supposedly designed by Nakamichi as a piece of production-line test equipment, so that each factory technician could have everything needed to test and align a tape deck, in one compact instrument. It didn't take long for Nakamichi to realize that there were plenty of service shops, recording studios and even amateur recordists who would find the T-100 a very convenient tool indeed. So the device "went public" in 1978. This review coincides with its reintroduction after being out of production for a year.

The T-100 will measure frequency response with better than 1/3-dB resolution, A-weighted noise down to 100 dB below 1 volt, speed accuracy from -3 to +3%, wow and flutter or harmonic distortion from 0.1 to 3%, and peak or average signal level in watts or volts. Clearly, the T-100 was designed for tape-recorder service. There isn't a single thing on it that CAN'T be used for testing or aligning a deck, and since these cover the "audio basics," the T-100 has a wide range of applications.

Half the T-100's front panel is taken up by two neon bar-graph displays. There are two inputs, each with its own display, so both stereo channels can be observed and adjusted without switching cables. The displays span -20 to +10 dB, in 1/3-dB steps. (Since the display segments can glow with less than full brilliance, it is possible to estimate smaller increments.) An Input Level switch sets the Zero-dB point to 10, 1 or 0.1 volts. The Meter Range switch increases the sensitivity by another 20 dB, allowing the display to give usable readings over a 90-dB range.

Besides the dB scales, the upper display is calibrated in speed error from +3 to -3%, in 0.1% steps. The lower display has an extra scale for harmonic distortion and wow/flutter, running from 0.1% to 3.0%, logarithmically. With the Meter Range switch in the 0.1% position, it reads from 0.01 to 0.3%. There is an oscillator with 21 switch-selectable frequencies, and although the frequencies start at 20 Hz, they cluster at the upper end of the audio range where a tape deck's bias and EQ adjustments are most critical. The frequencies offered are an odd mixture of ISO 1/3-octave standards and "whatever Nakamichi likes." This leads, at two points, to the well-known musical G-G-C ascension. (If you don't know that one, pick it out on a piano.)

I'll grant that Nakamichi's choice of frequencies and their spacing is probably the best possible compromise, in view of the fact that there is no room for a large switch and that the unit was designed principally as a tape recorder analyzer. Still, its usefulness for measuring the frequency response of other devices is reduced. I would have preferred a full range of frequencies with 1/3-octave spacings.

The oscillator feeds two RCA output jacks, so that both channels of the device under test (DUT) may be driven simultaneously. A front-panel knob allows for a 40-dB variation in output level. Except at the very bottom of this range, its action is smooth and un-fussy. The oscillator switch also has a position
that produces pink noise, handy for setting bias "by ear," or for such mundane matters as adjusting your speakers' position and driver levels for flattest response and best imaging. The device also has two Monitor output jacks, which allow you to feed the flutter waveform or residual harmonic distortion to an oscilloscope or wave analyzer -- a very useful feature for analyzing the NATURE of a problem in addition to its magnitude.

Testing any piece of equipment simply requires connecting one or both output jacks to the DUT's inputs, and ITS output(s) to the T-100's input jacks. The Function switch then selects which does what to which, and how the results are displayed. Generally, there is no need to fuss with adjustments, since the T-100 is designed as an integrated unit. When special measuring techniques are needed, the manual clearly explains what is required and why.

The principle use of the T-100 will be for measurement of frequency response or output level. This is done with the function switch set to Level. When turned to the -20 dB position, the meter sensitivity is increased by 20 dB AND the output of the oscillator DROPS by 20 dB. This makes it a snap to measure the response of a tape deck at the 0 and -20 dB record levels without having to fuss with readjustments or figure out how to interpret the display.

There is also provision for reading Peak Level, which is not properly calibrated. A 20%-duty-cycle pulse read 4 dB LOW on the T-100. Furthermore, there was less than 1 dB of change from 1 Hz to 100 kHz, indicating that this is a calibration problem, not a frequency-response-related one. Re-calibration is simple.*

* It's stuff like that that gives reviewers swelled heads. You can't imagine the delight and self-satisfaction that comes from catching a mistake that no one else caught in the four years the T-100 has been around. The service manual for the T-100 indicates that both the average and peak modes are to be calibrated at 0-dB with a 1 volt sine wave. Since the peak level of a sine wave is almost 4 dB greater than its average level, this specification would make all peak level readings almost 4 dB low, which is precisely what I found.

Harmonic distortion is measured only at 400 Hz. The function switch selects left or right test, with the signal level shown on the upper display and distortion on the lower one. Measurements are completely automatic, not requiring the nulling procedures of conventional analyzers. The original production version of the T-100 measured harmonic distortion down to .03%, whereas the current version goes down to .01%.

Play-only flutter measurements require a 3000-Hz tape or disc signal. The upper display shows speed error and the lower one shows cyclical speed fluctuations. Or, using the T-100's own 3-kHz output, you can measure a recorder's over-all record/play flutter characteristics.

The instruction book (praise Allah!) is excellent! Obviously aimed at the novice, it is written in clear, colloquial English, covers almost everything one could do with the T-100, and explains when and why some readings may be invalid. Would that all instruction manuals were written like this!

The manual implies that just about anyone can use the T-100 to adjust just about everything in their system that needs adjusting. Even if this WERE true, the T-100 is really for those who feel comfortable with record CBS STR-151. There is, however, no provision for using one display to read peak and the other average, nor is there a peak "hold."

* It's stuff like that that gives reviewers swelled heads. You can't imagine the delight and self-satisfaction that comes from catching a mistake that no one else caught in the four years the T-100 has been around. The service manual for the T-100 indicates that both the average and peak modes are to be calibrated at 0-dB with a 1 volt sine wave. Since the peak level of a sine wave is almost 4 dB greater than its average level, this specification would make all peak level readings almost 4 dB low, which is precisely what I found.
the technical side of sound reproduction and have a good grasp of how audio equipment works. It does not require a degree in electrical engineering, but the rank amateur should avoid doing his own alignment or repairs, as such attempts can lead to damaged or badly misadjusted equipment, enormous repair bills, and agonizing self-recrimination.

Nakamichi also includes 10 blank frequency-response graphs, with their test frequencies clearly marked. (At this price, why not 100?) Which brings us to the $990 question: Should you buy one? Well, if $990 is all you ever plan to spend on test equipment, the answer is No. For that price, you could buy an oscilloscope, a digital VTVM, a sine/square generator, and an AC voltmeter. These can't measure flutter and distortion, but they can do a heck of a lot of other things the T-100 can't. But if you're more flush, give the T-100 a long, hard look. Particularly if you're an amateur recordist.

If you are more than casual about recording (that is, if you care whether or not your equipment is properly set up for the tape), you probably already have a signal generator and AC voltmeter. The T-100 will add flutter and distortion to your measurement capabilities. These are useful for determining if you are making the deck's mechanical and electrical adjustments correctly, and may spot a minor problem before it becomes serious enough to spoil some tapes. Carried on-location, the T-100 lets you troubleshoot in the field, possibly saving a recording.

But the ultimate appeal of the T-100 is its simplicity. A lot of useful measurements are combined in one compact instrument. I no longer use my conventional generator and voltmeter. It's too much trouble to pull them out, find a space on the table, and make all the power and signal connections. Remember too that "separates" can only measure one channel at a time. The convenience ALMOST outweighs the price. Therefore, if you REALLY need a T-100, and the only problem is that you'll have to wear cloth coats for five years, then by all means buy one. I don't think you'll regret it.

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Reprints and Back Issues

We still have on hand a limited number of the softbound reprints of our first and second 12 issues. If you're curious about how and why this whole business of perfectionist audio got started (It was all our fault!), these two reprints are a not-too-compact history of the whole sordid affair.

Volume 1 contains 240 pages and covers the years 1962 to 1966, and Volume 2 has 290 pages and covers up to Spring of 1971. Both are 8-1/2 by 11 size (That's the way we were then!), and the price is $25 each.

Also available in rapidly-dwindling quantities, for the princely sum of $4 each, are original, unsullied copies of the following back issues (Volume and Number): 3-3, 3-4, 3-5, 3-6, 3-7, 3-9, 3-11, 3-12, 4-1, 4-5, 4-6, 4-8, 4-10, 5-1 and 5-2. Good Xerox copies of out-of-print issues can be obtained at varying prices, depending on number of pages. Inquire about specific issues.
THE PULSES OF TIME. Denis Smalley. (University of East Anglia) UEA 81063.

This is pure "electro-acoustical" music which is not everyone's cuppa. I personally find a little of it goes a long way. Despite the extensive notes by Denis Smalley explaining the stretching of notes and progressions as well as words, I still consider this sort of music an exploration of time rather than sonority. It helps to have studied meditation or Zen to listen to this music, which fragments time and silence in various ways.

I do feel that, despite my lack of enthusiasm for this form of music, it must be taken seriously. In fact, I am not so sure that it IS music, but rather a new art form which deserves a better name than electro-acoustical. Perhaps Dimensional Sound. Can anyone else think of something better?

The record comprises three pieces: side one is occupied by the title work, The Pulses of Time, side two by Pentes and Chanson de Gestes. These are interesting works, and the leaflet which comes with the recording has notes on the organization of the music by Smalley which are most helpful to the listener.

I cannot rate the recording because of the source material, but it is probably excellent. The quiet surfaces are typical of all the UEA records I have heard, but parts of the actual program sound just like disc ticks and pops.

If you are interested in this kind of music, or if you just enjoy hearing a variety of other-wordly sounds, you will enjoy this record. I cannot recommend it for everyone, however. It takes a specialized interest to really justify spending one's money for a disc like this. MG


What, a recording of rock backup tracks? Who could care less? Me, is who. Quibble over the program if you will (actually, it isn't all that dull, and two of the numbers are fun to listen to), but this wasn't released for the program material. You might call it a tantalizing sample of where a lot of rock sound begins, before it is fuzzed, reverbed, and cross-dubbed. God knows how many times before the final mess is released for the edification of the peons. This has to be one of the most astonishing rock recordings ever issued! Absolute Sound's HP (who obviously got his before we got ours, as you are reading this 9 weeks after our copy arrived) is quoted on the jacket as declaring this to be "Absolutely the best-sounding rock record ever made." He's right.

The sound is beyond belief! Incredible gut-shaking impacts, wall-flapping drum beats, and some awesomely stentorian synthesizer grunts, with some of the most unstrained, crystalline clarity and openness I have heard from ANY recording. (Although I'm not sure I agree with Sheffield's claim that this has more peak transient energy and more dynamic range than can be recorded by any other method, "be it analog or digital." If Sheffield had sent us our copy a week before, we could have used it to challenge the Sony PCM-F1, but one went out before the other came in. Actually, it hardly matters.) If you thought Sheffield's Drum Record was a system buster, wait until you try this one! It's the first time I have ever
heard the Acoustat TNT-2000 power amplifier gasping for breath, and I wasn't even listening that loudly. (I clocked 100 dB on peaks with the IVIE IE-10 Analyzer. The amplifier strain sounded like a tiny signal compression immediately following each loud "whack!"

If you like this recording though, you'd better buy several copies; it has such high recorded velocities on it that you can safely assume it will wear out rapidly, whether you LAST it or not. I was inclined to suggest making a taped copy of it for repeated listening but, unless you own a PCM-F1 (Ahem!), you can expect to lose a lot of signal quality when you try to put this on tape. The Track Record will never go down in the annals of recorded music, but as a sheer sonic tour-de-force I doubt that it will be surpassed for a long time. But then I seem to remember saying that about the Drum Record. ..


This recording must have been made for the Japanese market. It certainly left me cold.

The Beatles' music has become so entrenched in the contemporary music scene that it seems to be subjected annually to at least one permutation or another. This arrangement for Kotos does not succeed. In the first place, the typical Koto has the range of a mezzo-soprano. Although this group is augmented with a "soprano" koto and a seventeen string koto, there is not enough variety to the harmonies and melodic lines to sustain one's interest throughout two sides of a disc. In fact, the arrangements themselves seem to suffer from strange distortions of the music; "Girl" ends up sounding like an Italian gondolier's ballad. After a while, listening to this record became an exercise in patience.

The miking seems very close. Imaging is good although somewhat dramatic in the excessive "steereeo" placement of the kotos. There are two between the speakers and one which is solely left, another solely right in sound. This is not a natural sound. The surfaces are quiet, and the pressing good.

**CHORAL MUSIC BY HOLST AND BRITTEN.** Aldeburgh Festival Singers, and the English Symphony Orchestra with Graham Barker, Helen Charnock, Penelope Davis, and Henry Herford. Conducted by Peter Aston. UEA 82015.

Oh, how I wish this record had been recorded at a higher level. What could have been Top-of-The-Pile, as well as a candidate for definitive disc, is marred by too low a recording level. When one turns up the volume to where it belongs, one hears a background of hiss and burbling. What a shame!

The performances and selections are perfection personified, each work more delightful than the last. I am not going to go on with a blow-by-blow discussion, but I must single out Holst's "Ode on A Grecian Urn" (from his Choral Symphony based on works by Keats), "A Hymn to the Virgin," written by Benjamin Britten at age 16, "A Dream of Christmas" by Holst, and the "Scene of the Drunken Poet" from The Fairy Queen by Purcell (and edited by Britten and Imogen Holst). These are all special performances, but also don't miss the brief work "May", by Britten, which contains some of the most wonderful Fa-La-La's I have ever heard.

Holst contributed arrangements to The Anglican Hymnal (See the Episcopal Hymnal, 1934 edition) and The Oxford Book of Carols. Any serious student of choral works should try to
get hold of copies of these two books. They are both worth studying for the simple yet exquisite four-part harmonies. Both men apparently used the same source book, "A Mediaeval Anthology," edited by Mary Segar, for lyrics for some of their religious songs.

If it were not for the low level of the recording, this disc would be stunning. The balances are perfect, the mike perspective excellent, faithfully capturing the ambiance of Snape Maltings concert hall. The surfaces are as quiet as can be expected under the circumstances, and imaging is excellent. In short, everything an audiophile looks for in a disc with the exception of the one fatal flaw. My advice is to go out and buy this anyway. The music is so good that it could stand far worse treatment at the hands of an Audio Engineer before it would cease to be enjoyable.


What a surprise this composer turned out to be, and what a shame that there are so few recordings of his work. More! Give us more!

There is a small biographical discrepancy here. Krommer is listed in bold numerals in the title as having been born in 1860. Other references date him as 1859. He not only succeeded in enjoying a long life -- a difficult achievement in the late 18th Century -- but he managed to live that life through a very exciting musical period. In fact, he probably knew Haydn, Mozart, and Beethoven, if not personally, at least through their music.*

The latest of his works represented here, the Concerto for Oboe in F Major, has proven to me that, had Ludwig van Beethoven been a cabinet maker instead of a composer, music probably would have taken the same course. (!) The similarities to Beethoven in Krommer's use of modulations and harmonies, as well as the use of a pulsating bass in the Adagio movement, are striking. As this work was produced in 1805, one can only surmise that Beethoven may have not been quite so unique in his utter genius as one had thought. If you have any interest at all in the historical development of music, you owe it to yourself to listen to this record.

The performances are excellent. Both soloists meet the demands of the music. The Concerto for Flute in G Major requires the flutist to show his technical brilliance, and Mr. Graf does this effortlessly.

The Concerto for Flute and Oboe is simpler. Despite its later opus date, it is a reworking of an early quartet and is reminiscent of the Haydn tradition. The previously mentioned Concerto for Oboe represents quite a dramatic change in Krommer's approach, both to the orchestra and the integration of the solo instrument. The recording is excellent. The balances are good, the solos clear without being overly spotlighted. It is difficult to fault this disc. Definitely another Top of the Pile. MG

ANTHEMS FROM SALISBURY CATHEDRAL. Salisbury Choir directed and accompanied by Richard Seal, organist; Colin Walsh assistant organist.

Recorded in 1980 to celebrate the Golden Anniversary of the Friends of Salisbury Cathedral, this was taped in the 700-year-old structure under a 404-foot spire. There are eight short choral works with organ accompaniment, pieces written in the 17th

* As do we all, it should be pointed out.
through 19th centuries by composers such as Bach, Mendelssohn, Byrd, etc. They are exquisitely performed by a sweet-sounding, finely disciplined choir.

The organ and chorus are finely balanced, with the organ behind the chorus and never overpowering it. The space of the cathedral is readily evident and the bass is stupendous, especially on the last cut, side 1.

I enjoyed this record very much, and find myself going back to it when I just want to relax and do some light but not trivial listening. AE

Meridian Records

In spite of the fact that we are getting fewer substantial recordings from the major producers, there seem fortunately to be more and more small companies producing marvellous recordings. Proprius, BIS and Sound Storage are a few that come to mind. To this expanding group, we can now add another label, Meridian, imported from England by Reference Monitor International, the Rogers Speaker people.

Almost all of the Meridian recordings are done by John Shuttleworth, on a Nagra IV-S portable tape recorder using two carefully located mikes. Nothing is done to the signal during the mastering or the disc transfer except, on an occasional disc, some limiting in the deep bass when this is necessary to keep groove swings within sane limits. Neither Dolby nor any other kind of noise reduction is used, as Mr. Shuttleworth contends that such sonic doctoring audibly alters the signal as well as quieting the noise. I might add that, on my two test pressings, I did not hear any need for noise reduction. There are also some 45-rpm Meridians available and, while I didn't have a chance to audition any of them, English reviewers have claimed that they are noticeably better than the 33s.

In general, the sound on these is beautifully integrated and natural, while still maintaining the sense of the separate instruments that were playing. The octave-to-octave balance is very good, although on bright systems one may find the upper end a bit too forward. This is definitely NOT a peak but a balance condition and, when desired, can be easily alleviated with a little treble cut. Depth is excellent and natural, not the larger-than-life super-3D feeling I get from some recordings. Bandwidth is wide and smooth, dynamic range very wide and natural. Bass is very tight and clean, and it goes very deep on those instruments able to produce deep bass. The critical middle range is clean, open, lucid and uncolored. And I am happy to report that the performances too are very good.

There are at present about 50 titles in the Meridian catalog. Fortunately, most are not rehashes of works that are already represented in Schwann by 20 other versions. This is a catalog to look into. Meridian records will be available at many high-end audio dealers (and maybe even some record stores) at a relatively reasonable cost of $12 per. The firm's address in the US is 6074 Corte del Cedro, Carlsbad, CA 92008.

* What about those of us who don't have a tone control (or an equalizer) in the house? Damp cotton in the ears maybe? I continue to wonder why, whenever a recording errs slightly at the high end, that error is always a rise rather than a rolloff. AE

JGH
VIRTUOSO MUSIC IN 18TH-CENTURY FRANCE. The Taskin Trio: Priscilla Palmer, baroque violin; Christopher Herrick, harpsichord, Roger Doe, viola da gamba.

I find this music a nice change of pace. It is elegantly performed, with perfect tempos and dynamics. The tunes tend to be very pretty, and the Taskin Trio makes the most of this. This is an example of two-microphone recording at its best, which shows to advantage in typical American living rooms because these are often large enough to imagine the pieces actually being performed live in them. This recording actually sounds even sweeter than the Salisbury Cathedral one, perhaps because Mr. Shuttleworth used AKG tube mikes here.

This is a recording for mellow moments, perhaps with a fine '66 Bordeaux. Try it. I think you'll like this record. AE

THE LANDINI CONSORT. Songs and Dances of Fourteenth-Century Italy. UEA 78001.

Fourteenth Century music is dreary to many people. There is a certain sameness about the arrangements which can lead to ennui. For me, the bare-bones austerity of medieval arrangements seems to evoke dust and dimly illuminated rooms with rich, barely visible tapestries hanging on the walls.

The Landini Consort, named after a major Italian composer of the Fourteenth Century (a blind organist), performs these selections admirably. The arrangements are sparsely instrumented, as befits music of that period, and the instruments played here are replicas of the period. Note especially the sound of the fiddle and compare it with that of the modern violin. The other instruments of the consort include the Rebec, the Lute, the psaltery, the organetto (a portative organ), a cittern, and several nakers (an early kettledrum derived from an Arabic instrument).

Percussion is featured in only one work, a dance entitled "Istampitta Isabella." The extensive notes mention that the Consort has tried using percussion in other works, but finds that it overwhelms the melodic line. I for one think that a bit of variety in tempo and/or instrumentation would lead to a more appealing recording.*

A study of the lyrics is interesting, as they demonstrate that earthy reality which pervaded the Middle Ages. But I question at least one translation. In "Per un verde boschetto," why is "Con voce quasi humana" (literally, "with an almost-human voice") translated as "barking"?

The recording is of excellent quality. Imaging is good, balances are good, and the surfaces are impeccable. All in all, if you enjoy early music or have an extensive collection of vocal music, you will want to own this disc. MG

*Oh come on, admit it. It's deadly DULL. JGH

TOMAS ORNBERG'S BLUE FIVE. Featuring Kenny Davern. Opus Three 8003.

Sweden must be one of the, if not THE, strongest citadels of jazz from classical to progressive and on, as witness this delightful recording of New Orleans style. The arrangements are modern but capture faithfully the feeling of the 20's in their entire approach. One might consider this an historical tribute.

The ten players combine and recombine in smaller groups to play the various selections, which are a good sampling of jazz classics. The high quality of the performances is unquestionable, despite the fact that only three members of the group are
professional musicians. The other seven range from a medical doctor to a woodworking expert. Truly this record must be considered a labor of love.

I am not going to list all the selections which Mr. Davern and his friends (whom I assume meet frequently for their own enjoyment) have chosen. I especially enjoyed "Black Beauty," "Too Busy" (both takes), and "Tain't Nobody's Bize-

ness If I Do." All bands are delightful however.

The recording is up to the usual Opus Three standards. (And I've discussed their approach often enough that I am not going to do it again now.) This disc is more closely miked than Opus 3's usual, but this kind of music needs more intimacy than a church choir. I cannot fault the balances or reproduction. This must be considered a Top of the Pile.

MG

These recordings are selected on the basis of fine performance as well as excellence of recording. We are no longer subdividing this list into Classical and Pop. Instead we are listing the records by manufacturer.

ANGEL
ARTEMUS
AUDIOPHON
CLAVES
DENON
VIVALDI: The Four Seasons. Festival Strings Lucerne conducted by Rudolph Baumgartner. OX-7174-ND.
EMI (England)

HARMONIA MUNDI (France)
RAVEL: Scheherazade, Melodies Hebraiques, Daphnis and Chloe (2nd Suite), Pavane pour une Infante Defunte. Orchestre Philharmonique de Lille, Jean-Claude Casadesus. HM 10.664.
LONDON
HEROLD/LANCHBERRY. La Fille Mal Garde. CS-6252.
STRAVINSKY: The Rite of Spring. Dorati conducting the Detroit Symphony. LDR-71048.
M&K REAL-TIME RECORDS
JOE MARINO PLAYS 28 ALL-TIME GREATEST HITS. RealTime RT-302.
FOR DUKE. Bill Berry and His Ellington All-Stars. RT-101.
MERLIN
BACH: Orchestral Suites 3 & 4. MRF-78901.
MOBILE FIDELITY
BERNIE KRAUSE: Citadels of Mystery. MFSL 1-505.
OPUS THREE
BOFORS MUSIKKAR. Lofgren, Shostakovich, Bolzoni, Lindberg,
A Christmas List

Herewith a list of records which you may present to yourself or others as you see fit. Any of these would be a pleasant Noel-morn surprise. You may also want to scan the Top-of-The-Pile listing for some other ideas, as I am not duplicating that list here for reasons of space.

J. S. BACH. A Smithsonian Treasury. (Some excellent recordings on ancient instruments.) Order from Smithsonian Recordings, P. O. Box 102030, Des Moines, Iowa, 50336.


CHRISTMAS IN CAMBRIDGE. Clare College Singers and Orchestra. Capitol International SP-10567.

DEBUSSY: La Damoselle Elue; CHAUSSON: Poeme de l'Amour et de la Mer. Peters International PLE-021.


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(516) 585-4746

30 SNOWFLAKE ROAD
HUNTINGDON VALLEY, P.A. 19006
(215) 357-7858
Two interesting but completely different audio-related books came to our attention during the past few weeks.


This is a slightly paranoid but generally excellent primer on how to avoid being taken to the cleaners by your friendly hi-fi salon.

The author, an ex-hi-fi salesman, gives us a good enough insight into the economics and ethics of audio-store operation to allow the prospective buyer to go forewarned of what a conniving dealer (if that's who he's up against) is trying to do to him, and how. Contents include discussions of audio selling practices, checking a store's integrity and competence, mail order or no, and choosing equipment in that rare establishment, "the good shop." There's yet another glossary of audio lingo (every generation of audiophiles has to be glossaried, I suppose), and even a rundown on the underground audio magazines in which Stereophile is rather grudgingly listed as being "useful as a buying guide" (which is what we're supposed to be anyway).

My only real criticism of this book, aside from the persistent tone of righteous indignation, which becomes a bit tiresome after a while, is that Mr. Feingold seems uncertain as to whether his reader is a sophisticated audiophile (who already knows much of what is contained herein) or a tyro who is just getting into audio or just wants a genuwine component stereo to listen to records on.

No comments about the production of this one. Our review sample was "part of a small (preliminary) run printed from paper plates." It looks like lithography -- from sandstone. I assume the production run will be better.


This is a magnificently printed little (7-1/2 by 8-1/8) coffee-table volume of nostalgic art, chronicling and illustrating (with superb laser-printed color photos) the music machines of the '40s. It covers the biggies (including the 100-selection Seeberg), the table models, and their equally ornate remote loudspeaker units.

The designs reached never-to-be-surpassed heights of garish vulgarity, the architecture was as period-dated as a Charles Addams mansion, but they celebrated the coming-of-age of the phonograph record as THE mass-music medium. The text is brief but entertaining, informative, and very well researched. The book is so well done it is not likely to be done again, so it is probably the definitive book on the subject. Well worth owning if you're over 50 and still remember Tony Bennet.

"Digital Amplifier"
The Audiophile Murder Case
by D. B. Von Din*

The following is the first of several installments of what may well be the only audiophile murder-mystery story ever written. Those of you who have read the Philo Vance mysteries by S. S. Van Dine will recognize the style.

We are serializing it in small segments because our issues are still slim and we wish to keep a reasonable balance between this and our other editorial content. You may read each installment as it comes along, and suffer until the next, or you may elect to use some self-control and wait until the last is in before curling up in bed with some aged Boursin, water crackers, dry white wine, and all five issues in a neat little pile.

The heavy oaken door that gave access to the room had been removed from its hinges, and leaned against the wall in the hallway. Inside the high-ceilinged, ornamentally-raftered room, shelves containing high fidelity equipment took up most of the right hand wall. It was a quiescent cornucopia of amplifiers, preamplifiers, turntables, tape decks, tuners, and various accessories.

At waist level, another shelf extended forward beyond those above. Beneath it, cabinets brimmed with record albums and tapes. On the shelf crouched a Crystalcord tape deck, its ten-inch aluminum reels gleaming lustrously in the indirect lighting. This was cabled to a Sonic Chastity Mk. III preamplifier, as was a Precision Trace turntable fitted with two Isaki tone arms. Gold tipped SRS interconnects fed the preamplifier to a pair of Minotaur power amplifiers, their tubes still glowing orange through their metal mesh covers.

The amplifiers were connected through two fat wires that had been run, like mole trails, under the heavy oriental rug to an enormous pair of Belchfire Supreme Reference Monitor speakers which dominated the far end of the room. The middle was occupied by a small group of chairs, fronted by a coffee table that faced the speakers -- seven-foot high walnut-sided rectangles.

Winderley Manner, his mottled face a garish picture of agonized distortion, dangled motionlessly a yard off the floor between the speakers. A gag, still wet with froth, covered his mouth. His wrists, discolored in death by the wrenching of his final torturous throes, had been bound with what appeared to be a heavy bundle of braided copper wires that passed over one of the rafters above. A set of Aural Vista headphones, slightly askew, sheathed his ears, linked by several lengths of extension cable to the preamplifier.


"That's one way of putting it," said the medical examiner, as two detectives helped him untie the cable and lower the rigid corpse to the floor.

"What killed him, Doc?" Manhattan Homicide's Sergeant Plinth asked. "You'll have to wait for a complete report, but initial examination shows he was struck from behind. He may have been unconscious or just dazed. Whichever, the killer had time to string him up."

"I checked that tape recording at
The CC-3 basic power amplifier is a new design, in the tradition of our highly acclaimed and successful CC-2 amplifier. Improvements in circuit topology, power supply current delivery and selection of component parts, provide a new standard of performance in an affordable, medium power audiophile amplifier.

These improvements, based upon years of experience in amplifier design and manufacture, enable the CC-3 to deliver effortless sonic performance. The CC-3 works effortlessly with low impedance loudspeakers including electrostatic designs which present a complex load.

At moderate levels, the CC-3 operates in the Pure Class A mode. As in the previous CC-2 design, the CC-3 utilizes negative feedback sparingly and also incorporates a feed-forward circuit for improved dynamic performance. Slew Rate Limit of 50 volts/microsecond in the stereo mode; 100 volts/microsecond in the mono bridged mode.

The circuit design features a dual-differential current sourced input stage with an intermediate and driver stage incorporating complementary transistors with a bandwidth of 100 megahertz. The devices in the driver stage are especially designed to match the transfer characteristics of the output transistors.

FUNCTIONS/FEATURES
Standard EIA 19" x 3 1/4" rack mount
Generous heatsinking for thermal stability
Fused AC Mains Input and Loudspeaker Outputs
Front panel power switch
True Peak Clipping indicators
Mono operation capability

SPECIFICATIONS

Frequency Response:
5Hz to 70kHz + 0, – 3dB

THD & IM Distortion
Less then 0.1%, typically 0.05%, from 20Hz to 20kHz, both channels driven @ 8 ohms, at 70 watts per channel, FTC method.

Power Output:
70 watts per channel @ 8 ohms, 120 watts per channel @ 4 ohms, stable into 2 ohms (forced air cooling may be required under some use conditions with low impedance loads)
225 watts @ 8 ohms, 20Hz to 20kHz, with less than 0.2% THD & IM distortion in mono bridged mode. 250 watts @ 1kHz, mono bridged @ 8 ohms. Stable into four ohm loads mono bridged

The original CC-2, because of it’s excellent sonic performance and reliability, became a quiet favorite of professional users. There are hundreds of CC-2 amplifiers in use today in radio and television studios, discos, motion picture theaters and other professional applications. The new CC-3, with it’s improved heatsinking and mechanical design, offers long-term reliability to meet the needs of audiophiles and professional users alike.

275-A STEREO/MONO POWER AMPLIFIER
The 275-A amplifier is a lower cost version of the CC-3 amplifier. The 275-A is especially designed for the audiophile or professional user that may not require rack mounting capability or peak reading LED indicator circuitry.

The electrical performance specifications of the 275-A are identical to the CC-3.
low volume. It opens with music, then becomes a hodgepodge of noise. I'd say the victim's nervous system was completely disrupted by exposure to a combination of infrasonic and ultrasonic frequencies at an extreme volume level, from those speakers and headphones.

District Attorney Thurgood R. M. S. Wotsper, a tall, peremptory figure, had listened to this solemnly. His face twisted suddenly into a mask of impatient inquisition. "But how the devil did the murderer get out of the room? The windows in these high-rises can't be opened, all were locked, none were broken, and the only door to the room was locked from the inside too, by a drop-latch which has to be lowered into its catch AFTER the door is shut." He regarded the Manhattan night, sparkling through the drapery-flanked windows opposite the doorway. "And why would anyone want to kill Winderley Manner?" he asked pettishly of no one in particular.

But Rance answered: "You've three deuced good contenders for that honor in the living room, old thing."

Wotsper was still wrapped in his own thoughts. "We're on the penthouse floor of a high-rise apartment, a man's been killed in the most bizarre way I've ever seen, and there's no way his killer could have gotten out of the apartment and then dropped that latch from the outside."

"And there's another odd thing," he continued, turning to Rance. "We found some particles of a white powder on top of those amplifier things, and signs of scorching on one of the top covers. That doesn't seem to have a bearing on anything, but it looks a little odd, so we took some of the powder for lab checks. Maybe it'll mean something when we know what it is."

His voice trailed off, then he shook his head in bewilderment. "This thing's got me infinitely baffled. Most cases are straightforward and transparent, but this one is muddy and murky. There MUST be a clear answer somewhere, but right now, everything seems veiled by a grain structure that blurs the facts."

"I know whatcha mean, sir," Sergeant Plinth commiserated. "It's like there's this thick curtain between us and the truth."

"The third dimension which imparts the elusive air of reality DOES seem to be missin'," Rance concurred, scrutinizing the components on the lower shelf with a connoisseur's eye.

Two white-jacketed ambulance attendants entered the room and, at a signal from the medical examiner, lifted Manner's body onto a stretcher, covered it with a sheet, and wheeled it out of the room. Wotsper bid the medical examiner goodnight with a perfunctory nod, and then turned irritably to Plinth.

"We've got to start somewhere, Sergeant."

"I know, sir -- but where?"

"Perhaps our periodic aide Mr. Rance is right. With the three men in the living room." His eyes flicked toward Rance, but the other was examining the floor between the shelves and the left-channel Belchfire. "Well, Rance, what do you think?"

Rance looked up for a moment. "I'm not quite certain what I think as yet." He had moved behind the speaker, and began muttering to himself.

"Is something the matter over there?" asked Wotsper.

"I say," said Rance. "This IS a bit puzzling." He held up a small red button between the folds of his handkerchief. "The tweeter fuse cap was loose, and there's no fuse in it."

"I'm not surprised, with all the noise that equipment must have been making."

"No, old dear. I mean there was no fuse in it at all. Not even a blown one. Just some more of your white powder. Manner was a perfectionist. He would never have listened to his system with one tweeter out. That fuse must have been removed by the
murderer. But the question which I put to you is Why?" Wotsper said nothing, but raised an eyebrow quizzically.

"I suggest," Rance continued, placing the fuse holder on top of the speaker, "that you not allow ANYONE to disturb this equipment. I begin to suspect that it may hold the answer to the murderer's escape route." He strode over to the detached door and used his gold-plated Cross pen to lift the drop latch and let it go. It swung loosely like a pendulum several times.

"Notice, dear Wotsper, that the latch is too loose to have stayed poised until the door closes. It could not have been maneuvered into place and allowed to drop from vibration when the door was shut. You were right of course; it MUST have been lowered from inside. But since we are not dealing with a ghost, the murderer MUST have contrived a way of holding the latch up until he exited through this doorway."

He examined two small holes next to the latch, and a sudden, fleeting smile passed over his face. He straightened and, with a sweeping gesture towards the living room, said: "On to our rogues' gallery, old dear. If we can't test our aural faculties tonight, perhaps we can test our deductive skills and see if, by some providence, we can delineate a clear and coherent image of Mr. Manner's killer. Let's see what those three in the other room have to say for themselves."
(To be continued)

**Miscellany**

### Speaker Placement for Stereo Imaging

Stereo imaging is one of the best audio examples of cake. You can't eat it and have it too. The kind of razor-sharp, almost holographic imaging where every instrument exists as a round body out there in your frontal space, can be heard only from a very narrow listening space, typically only an inch or two wide. Shift your head either way, and it's gone. As for anyone hearing stereo from the seat next to you, forget it. He'll hear either channel, rarely both. And if the speakers happen to radiate from several horizontally displaced points, as from most electrostatics, this pinpoint imaging in the listening "sweet spot" is also likely to produce the worst case of vertical-venetian-blinding when you move laterally.

The more you adjust speaker placement to widen the area in which one can hear good stereo, the vaguer and flatter the imaging becomes from that previously perfect stereo seat, but (usually) the less vertical-venetian-blinding you get when you move. Knowing this, and acknowledging the fact that you can't win 'em all, it is up to you to choose the compromise which appeals most to you. Here's how:

Generally, if you want the best possible image from one "sweet spot", and don't give a damn what people sitting next to you hear (this is called aural machismo), both speakers should be aimed in cross-eyed fashion, with their visual axes crossing at the precise spot where your ears will be when you sit down and lean back to relax, or slightly in front of there if you never relax while listening. (The visual axis of a loudspeaker is an imaginary line from the speaker to the listening area, at right angles to the front of the speaker enclosure. If the enclosure is curved, the line is an imaginary radius from the center of the curve, bisecting the arc of the curve.)

If you're willing to sacrifice some imaging specificity in exchange for a much more even distribution of the sound across a wider listening area, the best way to accomplish this (in most cases -- room acoustics can raise hod) is to aim the visual axes of the speakers so they cross at a
point about 1 to 2 feet IN FRONT OF the ear location of a listener located exactly symmetrical to the speakers. Then, when you move to the left (for instance) of center, thus getting closer to the left speaker, you will move slightly more into the beam of the right speaker and more out of the beam of the left one. With the speakers optimally aimed, the net result will be virtually no change in balance as you move, and the image will stay put.

These dicta apply to most speakers of all varieties, electrostatic or dynamic. Exceptions are dynamics in which the drivers in each speaker are laterally displaced from one another (instead of being in vertical alignment). This arrangement tends to shape the dispersion pattern, causing the frequencies spanning the driver crossovers to favor the area in front of the speakers toward the side to which the upper-range drivers are displaced from the woofer. Thus, most such systems are best used aimed parallel or only slightly toed-in, with the upper drivers toward the middle.

Criteria for Undergrounders

The following was a response to an article entitled "Underground Press Survey," (we were "rated" 5th out of 10) which appeared in a recent issue of "The Audio Monitor," the newsletter of the Northern California Audio Society. Because this item is so adroitly written and so deliciously on-target, we are shamelessly plagiarizing it.

"I devised my own set of objective criteria for judging periodicals and, what do you know: The magazines finished in exactly the same order. Obviously, facts are facts. I hope that NCAS will accept my results as solid, corroborating proof of their own findings. The criteria:

EXPERTISE: The ability of a magazine to convince its readers that its conclusions are truth because their writers are touched by God.

VERBOSITY: The dexterity with which a magazine phrases tiny ideas in grandiloquent, circumlocutory, redundant and repetitious style, thereby persuading the reader to believe that anyone who sounds so impressive must be right.

SNOBBERY: The proficiency with which a magazine promotes the idea that higher price and/or scarcity of a product equals better sound.

GULLIBILITY: The ability of a magazine to so manipulate readers' minds that they will accept anything the magazine says.

CONTROVERSY: The effectiveness with which a magazine gulls its readers into thinking it is being totally honest and up-front by being rude and insulting. Since much of this abuse is heaped upon the reader himself, a sub-category of this criterion -- masochism -- is also taken into account.

JARGON: The facility with which a magazine invents colorful, often confusing and usually meaningless expressions to cloud the fact that they really don't know what they're talking about themselves."

The writer was John Puccio, a contributor of "Sensible Sound."

Anyone interested in joining the NCAS (Northern California, etc etc), if only for their newsy newsletter, can write to them at P.O. Box 14156, San Francisco, CA 94114 and ask for the going rate. ("Sensible Sound" is at 403 Darvin Drive, Snyder, NY 14226.)

Petering Out

We are beginning to wonder if two more so-called underground audio publications are on the way out too. No one has seen a copy of Peter Aczel's Audio Critic for many moons, the magazine does not reply to
subscriber inquiries, and we have been unsuccessful in contacting Mr. Aczel by phone. His loudspeaker-company address answers their phone, but Mr. Aczel has been out when we called and has not as yet returned our call.

International Audio Review too seems to have gone underground. There has been nothing from that quarter for over 6 months*, letters to publisher Peter Moncrieff go unanswered, and leaving messages with his telephone answerer has become an exercise in frustration.

Publishing is supposed to be a communications business.

* Since the above was written, Hotline # 22 has arrived from IAR, albeit after a four month hiatus; we are pleased that Peter is still pumping them out and also able to take a well-deserved vacation. We look forward to our own!

Any records listed in Top of the Pile and Christmas which your dealer cannot obtain may be ordered from Recherche Records, 1008 Paseo de la Cuma, Santa Fe, NM 87501. Any records not back ordered will be shipped by December 15th.

The Death of SME?

Several issues back, we reported that English tone-arm manufacturer SME was going under. This was gleaned from several, usually reliable, sources at Chicago CES. We did not bother to check out the report at the source because long experience has shown that, if a company is in trouble, it will be the last one to admit it.

Shortly after that issue appeared, we got a phone call from Ortofon in New York (who has been importing SME arms) to tell us that it was all a dastardly lie, and that in fact SME was doing just fine. It seems they had only closed their doors for a while and let a sizable proportion of their employees go "because of an inventory situation." That does not sound to us like "doing just fine."

We requested a letter of confirmation, for publication. We are still waiting.

Puzzler

Answer to Puzzler

The problem: Victor R.'s audio system had been losing gain for several days until he was starting to hear background hiss and hum at normal listening levels. His preamp and power amp both met gain specs, and his loudspeakers were okay. He had just recently replaced the plug-in stylus on his cartridge and, he reasoned correctly, it was extremely unlikely that both of the sensing coils in the cartridge could have developed the same kind of partial short that would cause the output in both channels to diminish by the same amount. What, then, was the cause of the loss of gain?

The answer: Victor overlooked the only remaining thing that was common to both channels: The stylus assembly.

It turned out that the replaceable plug-in stylus assembly in his cartridge was too loose a fit, and had been gradually coming unplugged, moving its induced-magnetic armature farther and farther from its pole pieces and, consequently, reducing the effect of its motion on both sensing coils simultaneously. Victor, with all his expertise, did not solve his problem until he went to clean the stylus and it fell out on the motorboard.

Puzzler Winner

The first reader who supplied the correct answer to our Audio Puzzler (cont'd on page 45)
Van Alstine Again

The exchange between you and Frank Van Alstine (Letters, Issue V-1) prompts this account of my experiences with him.

A few months ago I sent him $12 for a subscription to his monthly newsletter. For a dollar a month there was a lot of Jensen Stereo Shop hype, a lot of patting himself on the back for all his accomplishments, and maybe a page of material on gluing things to cartridges and putting putty all over turntable and arm parts. After a couple of issues I asked politely for a refund on the balance of my sub. His response was much like that in his letter to you -- as if anyone who doesn't think his ideas are the greatest is making a personal attack on him.

As for his claims about the modifications, a lot of that is hype too. I performed his original mod on my Dyna PAS-3x, and while the modified preamp WAS better, it was not as much so as claimed.

Paul F. Becker

Mr. Van Alstine replies:

Mr. Becker was kind enough to send me a copy of his letter to you. The data in it is not very accurate.

I am enclosing a copy of my latest newsletter, Audio Basics. I charge only $12 a year for this and it is published each month ON SCHEDULE.* Mr. Becker claims my advice is worthless. What does he want?

Consider also that I DID refund Mr. Becker the balance of his subscription when he asked for it. His investment with jensen's Stereo was a grand total of $5!

His complaints about my PAS mod plans are a bit strange too, as these were given away FREE OF CHARGE.

* A claim like this no longer embarrasses me. JGH

Those mod plans were discontinued in mid-1979, so Mr. Becker is irate about something he got FREE over three years ago.

To bring you up to date, I have had a full-time electrical engineer working for me since early 1979. Everything we do now is documented and engineered. My engineer has shown me that some of the modifications that I used to do "by ear" were not very valid. I am capable of learning, and the products we have offered for the past several years reflect that.

I hope you will examine the "Audio Basics" that I sent, as I think you will find it to contain an accurate analysis of tube amplifier behavior, and that our "do-it-yourself" suggestions are valid and worth the cost of the newsletter.

If you so desire, I will furnish you with a schematic of any of our new circuits that we are building into Dynaco chasses. And if you have an old Dyna unit lying around, I would be happy to rebuild it for you free of charge. We are justly proud of the work we do and are eager to show you why.

Frank Van Alstine
Jensen's Stereo Shop
Burnsville, MN

Okay, Mr. Becker, I think you overreacted a bit.

You got your money back, and your free MOD did improve your preamp. How MUCH it improved the preamp is a judgment so subjective that not even I would care to hazard an opinion. One man's small improvement is another's "dramatic" one.

And since Mr. Van Alstine seemed to be inviting comment on his "Audio Basics," here goes:

First of all, it is misnamed. The information therein is far from basic. I found only one technical error, and
A New High in Piano Sound!

Audiofon 2002
David Bar-Illan
Web: Sonata No. 2; Liszt: Ballade #2, Mephisto Waltz

Audiofon 2006
David Bar-Illan
Moszkowski: Piano Concerto (with Bavarian Radio Orch./Antonini)
Recorded at 15 ips

Audiofon 2004
Ivan Davis
Schumann: Faschingsschwank aus Wien, Liszt: Norma Paraphrase

Audiofon 2001-2
Leonard Shure
Beethoven: Diabelli Variations, Sonata No. 31, Opus 110
(2-record set)

Audiofon 2001-2
Ivor Wild
Franck: Prelude, Chorale and Fugue
Ravel: Gaspard de la Nuit

Audiofon 2007
Ivor Wild
The Art of the Transcription
Live from Carnegie Hall
(2-record set)

From Stereophile Volume 5, Numbers 6 & 7:

Audiofon 2002
"His interpretations and pianistic ability make this music a joy to hear."

Audiofon 2006
"... a superior recording of a superior performance... Mr. Bar-Illan's technique proves to be formidable."

Audiofon 2004
"... a gorgeous piano recording. Mr. Davis demonstrates his ability to perform the Romantic composers properly, with all the sweep and fire necessary..."

Audiofon 2001-2
"Another stunning piano recording from Audiofon. Leonard Shure gives this lengthy work a superb performance."

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that one is perhaps subject to interpretation. (The claim that a power amplifier is "DC coupled" if it has a straight-wire connection from input to first stage is true only if the preamp feeding it is ALSO DC-coupled. Most preamps have an output-coupling capacitor which blocks the passage of DC.)

My only disagreement with the newsletter is that it takes certain tube amplifier limitations, which may or may not be significant in a given design, and presents them as worst-case examples. All of V-A's criticisms of tubed amplifiers are valid, but there is a tendency to treat them as all-or-nothings. In truth, there have been tubed power amps in which few of those limitations were evident at all in their sonic performance. (The Audio Research D-79 is an outstanding example.)

The end of the article describes how to install a bandwidth-limiting filter at the input to a Dyna Stereo 70 (or a similar low-powered tube amp) and how to improve the ST-70's power supply. Well worth more than a dollar to anyone who can use the information.

All in all, I'd say that the newsletters are worth the money -- if they're all as informative as this one. But it's necessary for any reader to bear in mind that some of what these bulletins present as Fundamental Truths may not in fact be any more than one man's opinion -- astute as that opinion may be. JGH

The Reed Speakers

I recently received a letter from Dick Olsher which prompted me to respond to the review of my speakers in a recent issue.

I must say the review was more than fair. I don't even regard these speakers as anything more than "a good deal for the price." I find the frequency response is quite good, but the real problem is that there is something about the sound -- possibly the tweeter -- that is a little too "harsh" for my liking. I have since measured the large hump in the 15-17-kHz region which you found, and have redesigned the crossover to take care of that defect. It is a modification that could be made to existing speakers.

In talking to Dick Olsher, I was more concerned with another problem. Dick claimed that he assembled his speakers (including the ones he loaned you) with the tweeter polarity reversed from the way the instructions directed. The middle range of the units you tested would have had a dip of about 4 dB at crossover (3.5 kHz) if they were indeed out of phase. Since I did not see such a dip on your response curve I am at a loss to explain the situation.

All in all, the review was an accurate analysis of what the kit builder may expect upon completion (although even I didn't know that manufacturer Just Speakers was shipping edge sealant with the kits). As for the bass response, your testing room is the most ideal I have ever seen!

Dick also asked me to explain my design philosophy and asked if I have plans for future products. As for design philosophy: Low cost, limited production, high-quality audio components. No plastic wood, no bullshit claims or advertising hype. I can't compete with the mass-market speaker companies that produce in the under-$1000 class, because at least 80% of their retail price goes towards things other than components.

The $250 kit contains $175 worth of parts. If I were to attempt to retail such a kit on a high-volume basis, it would end up costing the consumer almost $800. I don't care if the speakers are worth that price or not, I see no point in entering a market where there are many other manufacturers who do exactly the same thing.

As for future products, Yes there are plans. The 6-02 kit will probably
remain just as it is, except that the crossover will be made easier to assemble by the use of a drop-in module. If sales increase, we can order larger enclosures to improve the low end. We are not sure we want to go to "better-sounding" drivers because, while there are possibilities of getting better drivers at slightly higher cost, our experience with them has shown wide quality control variations. They also do not have the feature of the user-replaceable voice coils which the Audax offers. A major reason for using the Audax drivers is their tight quality-control, perfect match between LF and HF drivers, and the user-replaceable voice coils (at all of $2 each). Be assured, though, that the 6-02 will continue to have the best sound for the money that we can offer.

There is a new speaker about to hit the streets: the 6-02/B. Although the model designation is similar, about the only thing this has in common with the 6-02 is that I designed both of them. The cabinet is new, about 0.8 cubic feet and measuring 19H by 12W by 10D. The edges are rounded, the grilles are attached by plastic snaps, and the finish is real walnut or oak. It has new HF drivers to improve the overall sound quality, and the larger enclosure firms up the bass a bit and extends it flat down to 40 (and about 5 dB down at 32 Hz). The speaker connectors are heavy enough to accept some of the "Godzilla cables" now on the market.

We don't feel we will offer these as kits, but plan to distribute on a limited basis to reputable dealers at what will probably be $500 retail, depending on dealer markup. The 6-02/B will be out by the time your next issue is out.

The other upcoming system is a satellite/subwoofer combination. The satellites are now ready and are being locally tested. Their quality is slightly better than that of the Rogers LS-3/5A. Basically, what I

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did was to make a "second-pass" redesign of the Rogers to fix up that popular speaker's little problems, such as lack of lower-middle range, their elevated high end, their boomy, underdamped bass and their limited power-handling ability. The cabinets are the same style as those of the 6-02, Oak or Walnut finish, but with rounded corners. These will retail for about half the price of the Rogers, and I hope to give the Rogers a real run for their money.

The subwoofer will be available in a choice of matching-style enclosures. One is a squat cube about 18 inches on a side, the other is a mini-tower about 2 feet tall. Their performance is the same, but the two are offered to suit customer taste and space requirements. The user has a choice of one or two subwoofers, either "quasi-biamped" or fully bi-amplified. In the "quasi-" mode, the user connects his speaker leads to the subwoofer for the crossover.

A small, active equalization network tailors the bass response to be flat down to around 20 Hz. The equalizer can be inserted into a tape monitor loop or any similar signal-interrupt path between the preamp and power amp. The only control on the crossover is a shelf level control on the subwoofer to match different satellites. This system is designed for the average Joe Blow who doesn't want the expense of a fully biamped system.

For those who run biamped, an active crossover/equalizer has been designed. This equalizes the woofers to 20 Hz, provides sharp subsonic rolloff below that, and allows a shelf adjustment of the woofer level to match any satellite system. Switches are provided to allow stereo or mixed (common) bass, bypass, or biamp. The woofer box and crossover are now ready, but I am looking for a fabrication shop to build quantities of the "black boxes."

I am also working on an extremely low-cost satellite system, to retail at about $150 to $200 a pair. The sound quality is almost as good as

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Speaker Builder can save up to two thirds of the cost of the speakers—which translates to almost one third of your outlay for your stereo system. Over 110,000 Americans will build their own enclosures this year—and you can too! Your dream speaker is probably well within reach if you build it yourself. There's a lot of help around already and now, Speaker Builder brings it all together in an assortment of articles that are comprehensive and a mix of both simple and advanced projects to help you choose and build the best type for your listening room.

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There will be reports on building the many kit speakers and enclosures now available, and a roundup of suppliers for drivers, parts, and kits. Articles range from the ultimate (650 lbs. each) to tiny plastic pipe extension speakers. From time delayed multi-satellites to horn loaded subwoofers, as well as modifications of many stock designs.
that of the higher-priced satellites and the enclosures are the same. These are aimed at the very tight budget, and pretty much require the use of one passive subwoofer. The total price for this system would be a little less than that of the 6-02/B, but the bass response and power handling would be much better. We plan to ship you samples of the first units for evaluation.

W. B. Reed

Although our published response curve for the 6-02 was not "diddled" to eliminate embarrassments (as is known to happen in some other magazines), it WAS an average of about 6 response runs taken from different microphone locations relative to the speaker. Either the crossover dip was not present in our samples, or it was averaged out when we correlated the group of curves. (We don't have the original curves on hand to check that out.)

Likewise, there was no judging of the low end. What we published was what we measured, and included one near-field (closeup) measurement of the woofer alone. (Unless an enclosure is vented or has another opening of some kind, such as a passive radiator, a near-field measurement gives an accurate indication of what a speaker's low end is capable of when optimally placed in a good listening room.)

JGH

Old-Record Styli

I enjoyed reading your bold and honest opinion about twicky-ear voodoo science in Vol. 5 No. 5. We too are upset about the amount of garbage thrown into the minds of innocent consumers under the guise of information, and feel that a consumer should be able to benefit from the information given him.

We have noticed from your answers to some subscribers that you do not seem to be aware that Pickering and Stanton Magnetics have been supplying both 1-mil and 2.5-mil styli for their cartridges for over 25 years. While that may not mean much to some people, it may be a blessing for those diehards who still want to listen to old LPs and 78s. Pickering & Co. is located at 101 Sunnyside Blvd., Plainview, NY 11803. Our phone number is (516) 349-0200.

George Alexandrovich
Vice President
Stanton Magnetics, Inc.

Readers who are now a little confused should understand that Pickering and Stanton cartridges are both made by the same firm. We are unsure as to whether it is called Pickering or Stanton. Judging from the letter, neither is Mr. Alexandrovich. JGH

(contd. from page 39)

in issue V-5 was Don Scott, who gets a pat on the back and a year's subscription to Stereophile. (No cigar, though.)

Mr. Scott reasoned that the woofer and the tweeter were positioned so that their signals at the crossover region arrived at the listening location 90 degrees out of phase. Reversing the polarity of either driver (shifting its phase by 180 degrees) would put them 270 degrees out of phase in one direction and 90 in the other, so their RELATIVE phase would remain unchanged regardless of their relative polarity. This is why no difference was observed when tweeter polarity was reversed. (Moving the tweeter backwards or forwards by a quarter wavelength would have remedied the situation.)

Other readers who answered correctly but whose letters were postmarked later, were George Boghosian, Fritz Mills, John Farris, Neil Shattles, E. A. Erikson, Henry Yee, Tom Tutay, David Thompson, Chuck DiGiorgio, Doug Constable, and Peter Miccols. It would seem we have a lot of sharp readers out there in audioland!
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