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("On Tape," "Baffle Board," "Letters" and the cover
photo are omitted from this issue.)
A Plague Upon Our House

The summer of 1975 will be remembered by us, with no fondness whatsoever, as The Time the Roof Fell In. Or the Murphy Months, or the Period of the Plague Upon Our House.

Ye Editor can recall from the days of WW-II hearing and reading about the depredations of some mischievous sprites called Gremlins, who would cause aircraft hatchcovers to jam and control cables to get hung up at the worst possible moment, but I don't think I ever really did believe in Gremlins. I think I sensed somehow that the mishaps attributed to their malevolent machinations were too capricious to be the work of thinking, calculating little spirits. But I was not clever enough to put my finger on what was going on. That had to wait for a gentleman named something-or-other Murphy, who was (to my knowledge) the first person to put a tag on it, and to formulate a basic law about it. The tag was "the perversity of inanimate objects," and the law was "If anything can possibly go wrong, it will."

There are countless corollaries to Murphy's law, some of which were published in Crown's excellent manual for their IC-150 preamp, and several of which are worth reproducing here in case you never bought an IC-150. To wit: "If a circuit cannot fail, it will." "The probability of failure of a component, assembly, subsystem or system is inversely proportional to ease of repair or replacement." "The probability of a dimension being omitted from a plan or drawing is directly proportional to its importance." "A transistor protected by a fast-blowing fuse will protect the fuse by blowing first." And so on.

We have our own corollary to Murphy's law, which we read off like the Rights of the Accused to every manufacturer who sends us equipment for testing. It goes: "If one sample out of fifty off the production line is to become defective immediately after passing final inspection, that will be the one sent to Stereophile for testing." Well, this summer proved our point.

Actually, we had been doing pretty well for a couple of years. Only about one out of every eight components sent to us shriveled up or had apoplexy when first turned on. We are inclined to believe, in retrospect, that dbx provided our first inkling that this might be a bad summer. The first 119 they sent us was dead in one channel. It was duly replaced with one that worked. Then our trusty Harman-Kardon 1000 cassette machine refused to shut off at the end of the tape. We still thought they were isolated incidents. But when the Epicure One amplifier went dead in one channel three days later, we had a strange feeling of impending doom.

In April, Murphy moved in to stay. Our preproduction prototypes of the Infinity SS-1A speaker system arrived, having been previously tested for only three months. It wasn't enough. Within the first three days, the electronic crossover started cutting off the tweeter in one channel. Obviously a simple case of a defective part on a plug-in circuit board, right? Right.

* Some readers may have noticed another equipment reviewer, writing elsewhere, making the same statement. We should mention that we told him our Murphy corollary at a convention last September. If he came up with it before, it was a case of two independent discoveries of the same Immutable Truth.
Except that when the new, production-type board arrived, it kept popping fuses on the crossover. Seems it was not quite like the pre-production one, and was shorting to a mounting bracket which, in the production crossover, had been moved so as not to short out the new board. We fixed that with insulating tape, but by then the rectifier had been so over-taxed that it let go.

Then the electrostatic speaker power supplies started popping. And so did two replacement circuit boards. Next, we lost two of the Infinity mid-range panels, and somehow in between, our first sample of the switching amplifier pooped out.

Meanwhile, we also lost an Ampzilla whose cooling fan froze up, a Dyna PAT-5 preamp that started making 60-Hz buzzing noises and radiated a weird variety of picture interference into Channel 12 on our TV set, a Dyna FM-5 tuner that faded out and stayed out, an FMI J-Modular whose middle range quit, a Decca pickup one of whose coils came unglued, a RABCO SL-8E arm that started scraping cartridges across the disc at the end of the side, another Infinity panel whose power-transformer insulation broke down, and a Yamaha CT-7000 tuner that just quit receiving. Meanwhile, our air conditioner caught the prevailing mood and went out of commission during the soggiest week of the summer, and every paper cone in the house got waterlogged. Still, we continued valiantly, testing components for all you avid readers out there until we found that, due to the massive power line load, because of local air conditioners fighting the weather, our AC supply was down to 104 volts and all the amp and preamp tests we had done were invalid. By then it was the end of July, so we just said To Hell With It! We started putting this issue together, mumbling apologies for not having more full reports but that's the way the cookie crumbles! We did manage to include a number of Quickies though, based on what listening we were able to get in after things returned to a semblance of normalcy (and we installed a line variac and voltage monitor).

Anyway, that's why we are late and shy of full reports, but we felt it better to do the best we could with what we had on hand than to delay this issue any longer. Meanwhile, does anyone know of an exorcist who specializes in Gremlins?

...and Other Hitches

It may come as a surprise to our subscribers to learn that a certain amount of planning does actually go into each issue of Stereophile. As a matter of fact, each issue is completely laid out on paper about a month before press time, with space scheduled for each advertisement and for our usual editorial features like the equipment reports, "On Tape," record reviews and, of course, "Manufacturers' Comments." Our contributing editors write to specified space requirements, we aim at a certain footage of equipment report copy (footage of column, length, that is), and we have learned by experience how much space to schedule in advance for Manufacturers' Comments. And as more ads come in, we add magazine pages in order to maintain an appropriate ratio of advertise versus editorial space.

Well, this time we got scotched! For no apparent reason, two manufacturers elected to wax eloquent, to the tune of about a page and a half apiece, and we felt obliged to reply to them in kind, and by the time we got it all typed out to column width, it had displaced our "On Tape" and "Baffle board" departments, along with a droll piece about Audio Exposés which expose nothing. All will appear in the next issue, as will an important announcement. And if you are gifted in the art of divination, you can probably guess from a couple of items in this issue what that announcement will be. (We are not folding up, in case you were suspecting that.)

We are also planning to go back to our usual cover format in the next issue although, judging by our correspondence, there are only about six of you out there who notice the covers anyway. (Petulance is a most undignified demeanor, but what the hell! We work at putting our covers together, so if you appreciate, then dammit, tell us about it occasionally.)

Final Note: What would you say if you saw another issue before Christmas?
Dyna PAT-5 Preamp

Solid state, AC-powered, $369 factory wired, $219 kit. Sample #3350287, reported 5-6-75. Dynaco, Inc., P O Box 88, Blackwood, N. J. 08012.

One of the few remaining manufacturers of audio kits (Remember EICO, Knight, Scott and Acoustech?), Dynaco has an unusual design approach too. Instead of obsoleting every model with new ones every year (or every few months), Dyna takes the time to engineer each new product to near-perfection level in terms of the state of the art, then cuts it loose and lets it stand virtually without change for a number of years. After a few years the competition starts to catch up, sonically but rarely in value for dollars spent, and it is the enduring dollar value of Dyna products, plus the customer confidence inspired by the rare (in audio) phenomenon of products with which the manufacturer seems seems sufficiently satisfied to have "finalized," that keeps Dyna products selling from one model to the next despite sonic obsolescence.

It has been 8 years since the PAT-4 came out, ostensibly to replace the PAS-3x which was but a refinement of the PAS-2, which some owners still claim they prefer to the PAT-4.

When word of an upcoming PAT-5 started circulating, our reaction was a combination of skepticism and curiosity. Dyna's claims for it were pretty insistent, but could not be shrugged off because it was common knowledge that Dyna had been comparing their latest preamp with an Audio Research SP-3 -- and while most of us who have watched (and admired) Dyna's accomplishments in the past expected the PAT-5 to be very good, we were confident that it couldn't possibly compete with that persistent paragon of perfectionist preamps.

Then we got ahold of a preproduction prototype and, with a certain amount of malicious glee, fired it up for a direct comparison with the SP-3. We were shocked and incredulous to find that the PAT-5 was better, in every respect. It had deeper, tighter bass, sweeter highs, superior detail, better definition, lower noise. It had two problems: It hummed under certain unpredictable hook-up conditions in a manner suggesting a ground loop, and it produced a brief series of horrendous (15-volt) DC impulses at its output during the 10 seconds or so following turnon or shut-off. The magnitude of these pulses was unaffected by the preamp's volume control, and they were quite powerful enough to wipe out many speakers and some amplifiers. So, despite the glorious sound, we had to flunk the PAT-5 because of its proclivity as a system-buster, and we urged (in our preliminary report) that Dyna not cut loose the PAT-5 until they'd gotten rid of those output pulses.

Some weeks ago (early in April) we obtained our "finalized" version of the PAT-5. The hum was gone, but the pops were not. Instead, Dyna was prepared to play roulette with the problem by sidestepping it. Their solution to the problem was to have the preamp switched on at all times, and let its front-panel AC switch control only the devices plugged into its switched outlets. The preamp, as they pointed out, consumed a bit less power than a night light, and besides, leaving it on all
the time kept it in peak operating shape by keeping the electrolytic capacitors charged and the rest of the circuitry free from moisture condensation. Dyna reasoned that, as long as the power to the preamp was never turned off, the output pulses would never occur, which of course is true. But the potential for disaster remained.

The first time the system was fired up, the preamp could do its thing and, if the amp had the capability and the speakers weren't fused, it would be bye, bye speakers. The power amp would have to remain turned-off for about 10 seconds after the preamp was plugged in to avoid this. But once the initial fire-up had been accomplished safely there would still be the possibility of trouble. If the system were operated during a thunderstorm, a brief power interruption could unleash those output pulses, and there we go again! Then there's the remote possibility of a power-supply failure in the PAT-5...

Anyway, we got on the phone and started bugging Dyna about this problem all over again, and we are now pleased to report that the necessary protective relay will be made available as an optional kit, to sell for "probably less than $35." We recommend it for anyone who is not also using Dyna's Stereo 400 (which has internal protection from DC pulses) and is obliged to power his system from an outlet that can be switched off.

So how does the PAT-5 sound to us, now that we've lived with it for a while. Our sample, supplied by the manufacturer, seems sonically identical to the preproduction prototype we had. It is still better than Audio Research's SP-3, but then the SP-3 has since been bettered by the SP-3A, which was slightly better than the PAT-5 in one respect (definition) but not quite as good in others. Fortunately for ARC, the SP-3A-I followed closely on the heels of the SP-3A, and managed to top the PAT-5 by a small margin in transparency and sweetness, and to equal it in detail, balance, bass range and tautness, and freedom from noise. The only other preamp we know of that can compete sonically with the PAT-5 and SP-3A-1 is the Soundcraftsmen 2217 (for $500, with octave equalizers), and by comparison even that unit sounds a little dry at the top and not quite as lucid. And the Dyna has some control facilities that the ARC lacks, such as the ability to interchange the sequence of two devices plugged into the Tape Monitor receptacles or to insert a third such device (like an equalizer or de-noiser) into the circuit, merely by depressing a button.

We are also pleased to be able to report that Dyna has redesigned their tone controls so that they are now of real value in signal modification. (Those on the PAT-4 were laughable or pathetic, depending on how you react to gross ineptitude.) The bass controls now behave very much like that on the SP-3A-1, which is to say they are of the variable-inflection type which affect only the very lowest bass at slight boost or cut settings, and move the inflection point (the frequency at which boost or cut sets in) upwards in frequency as the controls are advanced towards the extremes of rotation.

The treble control, unlike the variable-inflection one in the ARC preamp, is more like a cross between a variable-inflection and variable-slope control. As a result, it is more useful than ARC's for adjusting overall treble balance but of less value for correcting asperities in extreme-high-end response of speakers and/or
program material. The Dyna does however also include a "scratch" filter which does a nice job of erasing background hiss and a substantial amount of disc-mistacking distortion along with more than a modicum of signal crispeness. The filter starts in at around 5 kHz and is plummeting by 8 kHz. There is also a "Lo Filter" that is just as drastic in its action, cutting in at around 90 Hz and dropping the signal to almost half level by 50 Hz. Both struck us as being rather overly effective, but if your associated components are of a quality befitting a reader of Stereophile you should have little or no need for the ministrations of these devices.*

We did observe one oddity in the behavior of the PAT-5's tone controls: Their "flat" setting does not occur at the rotational mid-point, but at an angle of about 30° to the left of center. Thus, in order for them to produce flat response at their center settings, the knobs must be attached so that their extreme counterclockwise rotation is at 6 o'clock and their extreme clockwise rotation is 4 o'clock. This has, we are told, been done with all factory-wired PAT-5s, but the first of the instruction manuals gave incorrect instructions for the kit builder. If you own a kit purchased prior to May 1975, your tone controls are probably incorrectly positioned and should be repositioned as described above.

We should also draw attention to the fact that, since the tone controls are not precision types (they are probably ±20% units), mechanical positioning of the knobs will not ensure absolutely flat response at the "Flat" settings. The only way to be certain is to feed square waves through the preamp (into high-level inputs and out to a 'scope), set the bass controls for the most perfect square wave at 100 Hz and the treble control at 5000 Hz, and then position and fasten the knobs pointing straight up.

Parenthetically, it was mispositioning of the knobs that caused the PAT-4's tone controls to color the sound when in their "flat" settings. The circuit modification which by-passes the controls does nothing more than flatten the frequency response. The PAT-5 has a tone-control bypass switch, which can be used to check for proper knob orientation. If there is any change in sound when the switch is depressed (with the tone controls at Flat), it is due to knob misalignment.

Several useful options are offered to those who build the PAT-5 from a kit (or to anyone handy with a soldering iron). One is the ability to modify the gain (or sensitivity) of the phono preamp inputs over a range of -3 dB to +6 dB, to accommodate high-output cartridges or the very-low-output moving coil types. We tried the +6-dB modification with a Supex SD-900E and found the sound to be shade cleaner and better defined than with either Supex's own transformer or with the latest Mark Levinson booster, but with slightly higher hiss. (Hum, incidentally, was found to be extremely low, while hiss with "normal" cartridges was far below the noise level of any disc.) There's a hitch to Dyna's gain modification, though. If you have the two phono inputs set up for different gains, operating the phono selector switch causes a CRACK through the system, and the greater the gain difference, the louder the noise. There was also a noise of much smaller amplitude -- a modest "thup" -- when operating the Hi Cut filter, but the nature of that one suggested that a small amount of leakage in some internal capacitor just might cause the switch to become very noisy. Our inclination, as we mentioned previously, would be to ignore the presence of the filters and think of them as front-panel dressing

* Dynaco personnel refer to their high-frequency filter as a "CU filter," because it was added to the PAS-2 preamp in response to CU's criticism about the lack of a "scratch filter" on the previous PAM-1.
to impress the gadget-minded.

Since there are two separate phono inputs (but one preamp) per channel, there is also the option of hanging different capacitors across each phono input to provide the optimal capacitive loading for any cartridge used. But Dyna has taken this option a step further by publishing lists of the loading requirements of most cartridges and the total capacitances of most tone arms.

All in all, then, this is really a very good preamp, and one that -- at least in the case of our sample -- is sonically comparable to (although not quite the equal of) the very best preamp available: the SP-3A-1. Unfortunately, if we can believe some of our subscribers who have made side-by-side comparisons, some samples of the PAT-5 do not sound quite as good as did ours. These have been described as sounding somewhat brittle and not as lucid, yet no one we have talked to has been able to measure anything amiss. All of the "off" units seemed within manufacturer's specs, and there was no way of telling which samples were which without listening to them.*

This does not change the fact that average PAT-5's are a close second in sonic quality to average SP-3A-1's, and when we consider that the PAT-5's list price is less than half that of the ARC, and that Dyna's products are often heavily discounted (whereas ARC is price-controlled), the PAT-5 must certainly be judged by far the best value in a preamplifier today. Dyna done did it again!

(Manufacturer's Comment on Page 41.)

**To keep things in perspective, it must be pointed out that all makes and models of preamps (and most power amps, too, for that matter) vary somewhat in sound from sample to sample. Thus, an "off" sample of the ARC SP-3A-1 might be comparable in accuracy of reproduction to a typical PAT-5, while an "off" PAT-5 may be comparable to a typical Soundcraftsmen, and so on.

of professional tape-noise-reduction system, $600. Sample # 1834. MODEL 122 - Audiophile noise-reduction device for slow-speed tape recorders and for decoding of dbxed discs, $259. Sample # 1238. Reported 5-20-75. dbx, Inc., 296 Newton St., Waltham, Ma. 02154.

Sidle up to any audiophile and whisper "noise reduction" in his ear and his eyes will light up and he'll say "Dolby."* If he doesn't also say "dbx," he hasn't been keeping up with the state of the art, for the dbx system is the most innovative and successful answer to the tape noise problem since the Dolby appeared on the map. The Dolby B, which is the version in audiophile use these days, can give an apparent reduction in tape hiss of up to 10 dB, which is substantial. The most sophisticated of the dbx devices can add 40 dB to the s/n ratio of a tape recorder, which is phenomenal!

In case you're still not entirely familiar with how the Dolby works, a bit of background may be useful here in helping to understand how the dbx works.

A tape recorder's hiss is always a **So-called dynamic noise suppressors such as the Burwen denoisers are intended for use only after the fact -- for removing hiss from conventional recordings that have not been previously encoded for noise reduction. All such devices require careful adjustment of the denoising threshold for each individual recording, they often tend to dull the high end in the recording, and their efficacy in reducing noise varies from marginal to fairly dramatic.

The 119 has adjustable function ratios.

*dbx Devices

MODEL 119 - Universal volume expander/compressor, $198. Sample # 1891.
MODEL 157 - Semiprofessional version
certain number of decibels below the maximum level that the tape will accept without overload (typically 50 to 55 for audiophile recorders), and hiss is primarily high-frequency energy. The Dolby B reduces tape hiss by boosting the volume of quiet high-frequency passages in the program by as much as 10 dB while recording, and then pushing them down again by the same amounts in playback. The treble balance is restored to its original proportion, but the tape hiss is reduced by the same amount that the treble is reduced in playback. The result: original balance but reduced hiss. The Dolby has no effect whatsoever on loud signals, either when recording or playing back. Only during quiet passages does the treble boost set in while recording (and become treble cut in playback), and the quieter the program, the more the treble response is varied.

The Dolby has no way of telling however whether a strong input signal represents a loud musical passage at a moderate volume control setting or a soft passage at a high volume control setting. If it happens to be the latter, the Dolby will say "loud passage," and will not supply the treble cut that is necessary to restore the original sonic balance to the sound. So in order for the Dolby to operate properly, the level of the playback signal must be precisely matched to that of the original input signal.

These levels are already fairly accurately set in Dolby-equipped tape machines, but with Dolby add-ons the input and output levels must be carefully calibrated by the user, and failure to do so will cause the Dolby to dull or to exaggerate highs in playback. All of which brings us to the dbx. (At last!)

The dbx tape-noise-reduction devices resemble the Dolby in that they, too, compress the dynamic range of the signal while recording, and then expand it back again in playback. But the differences are that (1) The dbx compresses and expands the entire audio spectrum while the Dolby varies only the treble range, and (2) the dbx compresses and expands loud as well as soft musical passages instead of affecting only soft ones. With the dbx, the frequency response of the signal does not change in response to volume changes, and there is no "ceiling" above which the device ceases to affect the signal level. Thus, it is not necessary to match playback levels with the dbx in order for it to decode the recording properly.

There are, as we mentioned, three basic dbx models, in several variations. The simplest but most versatile are the models 117 and 119. Both of these are full-range, flat-response* devices which can expand or compress an input signal by up to a factor of 2. (That is, they can halve or double the dynamic range of the signal.) Both have continuously-variable expand or compress ratios (via a front-panel knob) and another front-panel control for "gain matching." This is not for setting levels, as in the case of the Dolby, but merely to adjust the dbx so that there is not a drastic change in level when it is switched in or out of circuit. The 117 and 119 also differ in that one (the 117) has a switch to select fast or slow onset (of expansion or compression) while the other uses the switch to select either "linear" compress or expand through the whole volume range, or limiting (or expansion) only above a certain volume "threshold."

The 117 and 119 are intended for use with existing -- i.e., un-encoded -- program material which is felt to have inadequate or excessive dynamic range. Typical commercial recordings are a good example of material which can often use some expansion, while the compression mode can be used (if you care to) to squeeze wide-dynamic-

*Other dbx devices use complementary treble pre-emphasis/de-emphasis as part of the noise-reduction process.
range material down to a range suitable for listening as "background" music without losing the quiet passages.

We did not try a 117, but we did test the 119 and found it to do an extremely good job on most program material that needed it, as long as the expansion or compression was set at a reasonable ratio. For expansion of restricted-dynamic-range material, we found that the 119 did best at expand ratio settings at or below 1.3. At that point, some program material caused an audible "pumping" of volume, and the solution was simple: Cut back on the ratio. With the control below the point where audible disturbances occurred, the expansion seemed almost too subtle at times except when the music became very loud or very soft, when the action of the device was both definite and definitely satisfying to the emotions. It was in fact truly remarkable how much such an apparently small increase in dynamic range could enhance the dramatic impact of recordings. Even old 78-rpm discs, with little intrinsic dynamic range, could be turned into electrifying performances via the 119, with the added benefit of reduced surface noise (because of the volume reduction at very low signal levels.) At excessively high ratio settings, the 119 added a perceptible amount of muddiness to the sound (along with the excessive pumping), but it seemed to have virtually no effect on the sound (except for the dynamic range enhancement) at reasonable ratios. It did not, as far as we could detect, put a "veil" over the sound but it did add a very subtle -- barely perceptible -- roughness to the high end.

As a noise-reduction device for tape recording, the 119 can be used at higher ratio settings than when expanding existing material, for any "pumping" that takes place during the record mode is automatically and perfectly "unpumped" in playback. A compression and expand ratio of 1.4 can be used to add about 20 dB to the s/n of any tape recorder, thus converting a 50-dB s/n to 70 dB -- 10 dB more noise reduction than is possible with the Dolby. Again, there seem to be no ill effects at all; just a remarkable reduction of tape noise, including hum and print-through (neither of which is affected by the Dolby B).

Other applications for the 119 (or 117) will suggest themselves as the need for them arises. We found the 119's above-threshold compression very useful in live-recording poorly-trained sopranos whose high registers tend to be excessively piercing, and as a means for controlling the volume of public-address systems where the speakers or singers are forever changing their distance from the mike. (Linear compression should not be used for PA work, as it will bring up the gain enough during quiet passages to induce acoustic feedback.)

But while 20 dB of increase in tape s/n seems like quite an accomplishment, it is nothing to what the other dbx units can do. Actually, the 119 or 117 can do better than that by the simple expedient of using higher compression/expansion ratios, but the tape medium isn't up to it. Reducing steady-state no-signal background tape hiss beyond a certain point reveals another imperfection of tape that is not usually noticeable: modulation hiss. This is hiss which appears only in the pres-
material increases the likelihood of tape saturation and self-erasure at high frequencies. Dbx got around this by adding treble boost to the control signal (which senses the signal level and controls the amount of expansion or compression accordingly). Thus, the degree of compression in record is greater when there is strong treble content in the signal. Correct decoding is ensured by using the same control-signal treble boost in playback, for greater expansion during treble-rich passages. Again, there is a passing resemblance here to the Dolby B design, but again the difference here is that the dbx does not change the frequency response of the signal in accordance with volume changes, but rather in fixed amounts which are subsequently compensated out in playback.

As a result of these ministrations, the dbx 157 can almost double the s/n ratio of any tape recorder without introducing any other ill effects to offset this astonishing improvement. And what this does to the reproduced sound is something that must be heard to be believed. We tried the 157 with a 2-track high-speed Revox A-77, which is normally very quiet but not phenomenally so, and tends (as do all non-Dolby A-77s) to have a subtly "gray" (rather than lucid) sound. With the dbx 157 working, there was absolutely no audible hum or hiss from the recorder at what we consider to be very high listening levels of around 105 dB, and the signal had the same crystalline clarity that we have appreciated in Dolby B playbacks. We have not been using our Dolby for some time, though, because of an increasing awareness of its tendency to dull highs. (About which more later.) Now that we were hearing the same lucidity, with no other perceptible change in the signal quality, we started to become increasingly aware of the modulation hiss on our old tapes, and have now promised ourselves that we will never again do any serious taping without the 157. Note however that the dbx devices don't include either microphone preamplifiers or gain controls. For live recording, they must be fed from an input mixer or from signals drawn out of the tape recorder (via a modification) at a point following its record volume controls. And it should hardly be necessary to point out too that, in order to take full advantage of any noise-reduction unit like a dbx, both your mikes and your preamps should be extremely quiet. The dbx, like the Dolby, has no effect on noise that is already in the signal fed into it.

Incidentally, while the 119 and the 122 have only two channels, and thus can either encode or decode but not both at once, the 157 has facilities for doing both at once so you can listen (at the output of the device) to the decoded playback from the tape while you record. The headphone or loudspeaker outputs from the tape recorder will deliver encoded signals only, so if you need decoded playbacks on location you will probably have to lug along a small power amplifier equipped with input level-sets, to drive your headphones or monitor speakers.

The 157's simultaneous encode/decode feature suggested to us a very nasty little experiment. Just out of curiosity, we disconnected the tape recorder from the 157 and inserted in its place a couple of short shielded cables. With the total gain through the device set exactly at unity, we were able (via the Tape Monitor switch on our main preamp) to either bypass the 157 entirely or to feed a signal through it, to ascertain whether or not it added anything at all to the sound. There was every reason to expect that it would, because 40 dB of volume change is a substantial amount. (A phono preamp, typically, has 20 dB of it.) We were amazed to find that the only audible (to us) difference between the direct signal and that going through the 157 was a very slight volume difference at low levels. There was no perceptible roughening, veiling or change in frequency response, although there did seem at times to be a slight reduction in the depth of the sound passing through the 157. We never did ascertain whether this was actually happening or whether we were imagining it, as the effect seemed to be there on occasion and was absent the rest of the time. There was definitely no trace of pumping, breathing or any other irregularity in dynamics that might suggest that a very large
amount of expansion and compression was taking place. In other words, the dbx buys all that noise reduction without any apparent degradation in other aspects of the sound. We keep asking ourselves how it is that transistorized devices like this can have so little effect on the quality of sound going through them, while transistorized preamps and power amps seem to have so much. Perhaps it is related to the gain of the unit. The dbx devices and another example we can think of -- the Soundcraftsmen equalizer -- function at around unity gain (that is, the same level out as in), while preamps and power amps must have substantial amounts of gain. We will welcome any other theories on the matter.

In comparison with one of the best audiophile Dolbys we know of -- the Advent 100A, we found that the dbx 157 produced substantially greater noise reduction -- total silence versus extremely low hiss -- and slightly smoother-sounding high end. In fact, all of the Dolby Bs we have tried seem to have a tendency to dull the high end, even though no measurements we have made have ever revealed a reason for this. We are not sure we can accept Dolby's explanation for it, though: That the apparent dulling is a delusion, due to our association of freedom from hiss with high-frequency attenuation. We have proven, by mixing interstation FM hiss with a quiet signal, that removal of the hiss does not change the apparent high-end response.

The 157 is a semiprofessional version of the dbx units made for use in recording studios. The 122, like the 117 and 119, is a consumer unit with something added: noise reduction for dbx discs!

We mentioned some time ago having heard a very impressive demonstration of the dbx discs at a press confab in New York. We have now had an opportunity to try the 122 and some dbx-encoded discs at home, and while this confirmed our original impression of virtually total noise reduction (nothing at all, even with the volume control full-up between disc bands), we found the actual sound of the decoded discs to be unacceptably hard and steely. Visual inspection of the dbx-encoded side of one demo disc (with the naked eye, under reflected light) revealed that it may have been drastically overcut at high frequencies, which is ridiculous. One of the advantages of the dbxed disc is that its 50-dB of noise reduction allows a disc to be cut at 10 dB lower level while still gaining 40 dB s/n over-all, thus (supposedly) avoiding tracking problems. As far as we are concerned at this point, though, it would seem that the dbxed disc is still, let us say, in the experimental stage.

It is also more than possible that at least some of the hardness we heard from the discs was the fault of the 122, for we observed the same thing, only to a much lesser extent, when using it for tape noise reduction. We do not recommend the 122, at least in its present form.

Finally, a few caveats. The three basic dbx units we tested are not mutually compatible. Tapes dbx-encoded on the 117 are decodable (via the same ratio) on the 119 or vice versa, but ones made on the 157 are compatible only with ones made on the professional dbx units or on other 150-series models. The 122's tape encoding is compatible only with other 120-series models, and the dbxed discs are decodable only on 120-series units. Improper decoding causes loused-up frequency response, audible pumping, or both.

These devices should be used with some care with cassette tape recorders, because full-range volume compression puts rather stringent demands on the frequency-response range and linearity of the recorder, and many cassette decks are poor in these respects. If the recorder boosts or chops bass or treble, the playback decoding may not "track" the signal, and pumping or improper dynamics will result. The 122 contains circuitry to minimize the effects of these recorder anomalies, but as we noted previously, it is the least successful dbx device in terms of over-all sound.

In our opinion, then, the dbx 157 is the best tape-noise reduction system available for home use, and except for one drawback which may bother professional users (it will exaggerate differences in oxide sensitivity from batch to batch of tape), probably also
the best for the professional. (After all, pros now have to match levels for the Dolby A; it shouldn't bother them to have to do the same for the dbx.) It is rather horrendously priced, but that $600 price tag doesn't seem to be all that much out of line in view of the fact that no amount of money can buy a tape recorder that's as quiet as this can make practically any $400 machine. Considering the price, though, it would seem that dbx could do something about those pushbuttons look okay when they're on straight but, when one is crooked (as is often the case), give a more-than-passing impression of snaggly teeth. A small quibble, but it's something we don't expect to see in a product from a manufacturer of professional recording equipment.

The 119 (or the 117 in its "fast" attack mode) is also, we feel, well worth the money in that it combines a very effective tape-noise-reduction facility with the means for breathing new life into many commercial recordings, particularly older ones. But we feel that more work needs to be done on the 122 and the discs that go with it. Noiseless discs are an exciting idea, but they're going to have to sound a lot better than the few samples we heard before they get off the ground.

(Manufacturer's Comment on Page 41.)

Quickies

Polk Model 9 Speaker System

Remarkably spacious sound with a somewhat distant perspective, these produce stable but somewhat vague stereo imaging and a nice sense of the original ambience in recordings. Extreme highs are very soft -- almost dull, middle highs are slightly wiry, middles are moderately smooth but with an audible "papery" coloration, and the low end (in our main listening room with an amplifier which underdamps many speakers) rolls off very rapidly below about 70 Hz. Over-all sound was judged to be thin and rather pinched, despite the spaciousness.

In short, we were not very much impressed, and would in fact prefer to listen to some speakers costing substantially less (such as the EPI 100s or FMI 80s, despite their other imperfections).

(Manufacturer's Comment on Page 46.)

Yamaha CT-7000 Tuner

One of the most beautiful-looking pieces of audio gear we have laid our eyes on, this also turns out to be as good a performer as anything on the market today. We compared it with the highest-priced tuner available -- the Sequerra 1, generally acknowledged to be the Rolls Royce of tuners, and were a little shocked to find that the Yamaha equalled it in every respect except sound, and was a shade more lucid in that department. It lacks the glamor of the sequerra -- the built-in oscilloscope, and the $20 price tag, but for people who would rather listen than look, and can justify the price of something this good -- because of receiving location or a thirst for the very best -- we feel we must recommend this over the Sequerra.

We had only one fault to find with it, and this was by prediction rather than by experience: The undefeatable AFC, which comes into action when you take your hand off the tuning knob, could very well pull a desired weak station off to lock in to an unwanted strong one close to it on the dial. This did not happen to any of the stations we pulled in in our exurban location, but we could well see how it might affect someone near a metropolitan area who wanted to pull in some distant stations. The CT-7000 has the pulling power, but the AFC could under some circumstances defeat the advantages of this.

REVIEWER'S ADDENDUM:

Several days after the foregoing was written, the CT-7000 caught the prevailing spirit of disaster on the premises and gave up the ghost during an evening's listening. (See "As We

SPEAKER CURVES

Subjective frequency response curves for all the speaker systems reported here appear on page 39 of this issue.
See It”) We have been promised a replacement, which will become our new standard by which future tuners received for review will be judged, if it too doesn’t succumb to the Plague Upon Our House.

(No Manufacturer's Comment.)

PMI J-Modular Speaker System

We finally received our finally finalized versions of the Js, just before press deadline. (We do have deadlines, believe it or not; they just get moved around from time to time.)

The efficiency is now about 10 dB higher than previously, making these a shade less efficient than a typical good bookshelf system. (The first Js were hopelessly inefficient.) But our first reaction was disappointment. Over-all sound was extremely smooth, with incredible low- and high-end range, but with somewhat closed-in sound. Not quite there. We were prepared to relegate them to our Class B Recommended group until we heard another pair of them in another room. On the basis of that rather disconcerting experience, we are now obliged to rate them Class A, along with the Infinity SS-1A, with the following reservations for both: The Js are at their best in an acoustically bright room, the Infinitys in a softer acoustical environment. Both require careful placement for best results, but while the Infinitys are harder to locate for best results, their very sensitivity to room placement makes them more flexible and better able to cope with a variety of acoustical environments.

At their best, the Js are extraordinarily musical, in a way that classical listeners with highly trained ears for high fidelity will appreciate. They are neither forward nor remote (ideally, that is), they are rich without being heavy, and they reproduce musical timbres with unbelievable accuracy. We would venture to say in fact that we heard, through the Js from a master tape of a small combo, the most astonishingly realistic sound we have ever heard.

The Infinitys are very slightly forward, with somewhat better focus but a little less warmth. They do not go quite as deep in most rooms as do the Fultons, but the bass is somewhat tighter and, in most rooms, smoother. (Because the separate woofer can be located for smoothest response, without regard for upper-range driver placement.) They will, we feel, appeal more to the listener with rather catholic musical tastes, as they handle non-classical material in a manner that non-classical listeners find more satisfying than what the Js do. In a suitable room, though, the Infinitys too produced some astonishingly realistic sound from original tapes, although the tapes themselves were of material -- orchestra and large chorus -- that is far more difficult to reproduce credibly than is a small instrumental group.

Both of these are obviously Class-A systems, although one (the J-Modular) is far less costly than the other, and can if desired be driven by a single power amplifier. The Infinitys have to be biamplified, but are adaptable to a wider variety of acoustical situations. Under ideal conditions, either can provide more natural and accurate sound reproduction than any other speaker system that has ever been made commercially available. But whichever you get, don't for God's sake try to drive it with anything less than the very best electronics. Use Paolis or Audio Research amps (or, perhaps, the Infinity Class-D switching amp, which we have yet to test at the time of this writing). Anything less is a waste of the fantastic potential of these speaker systems.

(No Manufacturer's Comment.)

Epicure 100 Speaker System

Subtly boxy sound and a little hard at the top, these are nonetheless among the most natural-sounding systems we have heard in their price range ($99). The competition is Dyna's A-25, which sounds slightly distant and doesn't have quite the low-end detail, and the FMI 80 which has a shade less low end and low-end detail, a softer top, some upper-bass drumminess and a somewhat more musically natural over-all sound. Balancing all considerations, we would rate the FMI and EPI as being equally good but with different strengths and weaknesses, and the Dyna as slightly
below them. The EPI will, we believe, be preferred over the FMI by listeners whose interests embrace both classics and rock (and other pop material), the FMI by the listener whose tastes are predominantly classical. But they are both very, very good performers for the price.

(No Manufacturer's Comment.)

IAD Dynamic Volume Expander

Unlike the dbx 119 reported elsewhere in this issue, the IAD DVE is a volume expander only, for use in enhancing typical un-encoded program material which has had its dynamic range compressed. It also differs from the dbx in that, while its attack (onset-of-expansion) time is very rapid, its expand-decay (relaxation) time is very slow -- in the vicinity of 30 seconds -- and it is this slow decay which, in our opinion, disqualifies the DVE, despite its very liquid over-all sound. It expands crescendos and sudden loud sounds (cymbals, castanets) very well, but when a loud passage is followed suddenly by a quiet one, the decrescendo doesn't. It remains expanded for a painfully long time, which destroys musical sense as well as grossly exaggerating surface noise, be it tape hiss or ticks and pops.

We still prefer the dbx, despite its extremely subtle tendency to add dryness to the sound. And we mean "extremely."

(Manufacturer's Comment on Page 44.)

Yamaha NS-1000 Speaker System

Don't be prejudiced by the fact that these speakers have metal-dome mid- and high-range drivers; they do not sound metallic. To the contrary, they are very smooth, with an almost-electrostatic-like high end and remarkable focus, depth, and stereo imaging. They are rather forward-sounding and somewhat bright, and thus should not be used in a bright acoustical environment. Neither should they be used with your typical solid-state amplifiers; they are as revealing of high-end hardness as our Class-A recommended systems.

The woofer is not as good as the upper-range speakers. It is slightly up in the mid-bass region and gradually tapering below and, although still strong at 35 Hz, does not sound that hefty down there on musical material. A potent rival for the Dahlquist, although quite dissimilar in sound. But a bookshelf system weighing 65 lbs? Come on, now!

The price: $1000 per pair.

(No Manufacturer's Comment.)

ESS AMT-1 Speaker System

Much smoother at the high end than the sizzly-sounding earlier versions, but still (in our opinion) a markedly colored and rather unnatural-sounding system. Highs are razor sharp, hard, and slightly tizzy, bass is on the dry side (even with tube-type amplifiers) yet not very taut nor detailed, the middle range is flavored by a somewhat nasal quality, and the woofers and tweeters still sound unrelated to one another. Over-all sound is rather brassy, and several jazz buffs we know of are crazy about the AMT-1. But it ain't our cuppa tea.

(No Manufacturer's Comment.)

Denon 103 & 1035 Cartridges

These are low-output moving-coil cartridges fitted with different styli. The 103 has a 0.5-mil spherical tip, the 103S a Shibata tip. The 103S is being imported by American Audioport, Inc., in Columbia, Mo., the 103 is being brought in directly from Japan by a few dealers. Our 103 was loaned by Music & Sound of California, the 103S came from Audioport.

They are not too similar in sound. The 103S is incredibly clean-tracking, with a light, airy high end, a subtle zip on string tone, and a very slightly withdrawn quality similar to the sound of the Supex 900E, but not as overly rich-sounding as the Supex.

The 103 is a hair less clean on very loud high-frequency modulations but is noticeably more "alive," sounding somewhat like a very good Decca with extraordinary tracking ability. Extreme highs are somewhat sweeter than from the Shibata version, making for a more master-tape-like sound. We preferred it to the Shibata.

Although these are moving-coil pick-ups, they have higher output than most
moving coils, and thus can, if used with a head amp, overdrive the input stage of many preamps. Fortunately, their output is high enough to work properly, at a somewhat higher-than-normal volume control setting, directly into many conventional preamps (such as the Audio Research SP-3 and Dyna Pat-5, the latter especially with its high-gain modification).

We would rank both Denons as equal over-all to the Decca Mark V, insofar as their tracking ability is notably better but they do not have the right-there aliveness nor detail of the Decca.

(Manufacturer's Comment on Page 50.)

Audioanalyst A-100X Speaker System

One of the more aggressive-sounding systems we've tested recently, these are somewhat snarly, a bit wiry farther up, and very dull at the extreme top. Perspective is however rather on the distant side, apparently because of a substantial, broad response dip right in the middle of the range (around 1000 Hz), and the midbass tends towards heaviness. The low end, in our listen- ing room, rolled off very rapidly below about 60 Hz. Over-all definition was judged to be fairly poor, and the system seemed to exaggerate dynamic range in that the sound at high volume levels tended to become rough and shattery, making crescendos sound louder than they actually were. We were not impressed.

(Manufacturer's Comment on Page 50.)

Infinity SS-1A Speaker System

The full report on the Infinity SS-1A scheduled for this issue has been postponed because of an incredible epidemic of failures, not only in the pre-production SS-1As that we received, but in many of the other components we had in the house. (See "As We See It.") For the nonce, though, we can report the following:

Unquestionably, the SS-1A's weakest point is its stereo imaging. This is very good, but is not outstanding. Nonetheless, the system is one of the two most accurate reproducers that it has been our good fortune to hear. Like other dipole radiators, it is very critical of room placement. Improper positioning can cause mid-range colorations (nasality, honkiness, etc.) and imperfect "meshing" of the lower-range response of the panels with the upper range of the single-box woofer. Similarly, improper positioning of the woofer can cause excessive, inadequate, or irregular bass response. But the advantage of having the woofer separate from the upper-range speakers is that all of them can be located for optimal, no-compromise performance if you have the patience (and know-how) to do so.

Balance settings on the electronic crossover are critical, too. The tendency is for most dealers to set both the bass and treble too high, causing heaviness and hardness. Finally, these speakers absolutely must be driven by the best available electronics, and that implies either top-notch tube stuff or Infinity's switching amplifier. The preamp should be an Audio Research SP-3A-1, but a good Dyna PAT-5 does a very passable job.

More particulars in the next issue. Meanwhile, this has become our standard by which other reproducers (and the original tapes that we make) will be judged for the foreseeable future.

Infinity's first Servo-Static system, the SS-1, gained a reputation (justified or not) for undependability, and our experience with our pre-pro- duction SS-1A did little to undermine that reputation. One tweeter channel in the crossover was intermittent, then the crossover started popping fuses and had to be replaced. The other has worked fine ever since. Two power supply boards in one electrostatic unit broke down, due to a set of filter capacitors that were inadequate for the task despite conservative voltage ratings. The replacements, with twice the rating, are working fine. One power transformer in the other electrostatic developed a short through its output wire insulation to the end bell. The replacement transformer -- current production -- had a grommet in the end bell to prevent that from happening.
again. Finally, two of the mid-range electrostatic panels split, and these had to be replaced. Our SS-1A now seems to be doing fine — nothing has failed for over 2 months — but only time will tell how other samples fare in the field. (Electrostatics have to be less dependable than dynamic speakers, by virtue of their powering circuitry. But that's a risk we will gladly swap for the quality of sound that can come from electrostatics.)

**REVIEWER'S ADDENDUM:**

Several weeks after our SS-1A arrived, we received our finalized FMI J-Modular speakers, and although we are still very much impressed with the SS-1A, we must now report that the FMI is in the same league as the Infinity. The Infinity is rather more versatile in that it can be made to operate optimally in a wider variety of acoustic environments, and it has noticeably better middle-range focus and "snap," but it no longer has the Class-A group to itself. This must now be shared with the FMIs, which are reported elsewhere in this issue.

There is, incidentally, a way you can determine whether your listening room is bright, soft, or neutral. Read our "Recommended Components" Notes for some of the loudspeakers you have owned, and compare the description of their sound with your own reaction to them. If you have found that the speakers in question sound brighter or shriller than our Notes would indicate, yours is probably a bright room. If the opposite is the case, you probably have an acoustically dull room, and will thus probably prefer the Infinity to the J-Mods. In a middle-of-the-road case, the Js tend to be a little polite, the SS-1A a little more forward and alive.

(No manufacturer's comment.)

**Otari MX-5050 Tape Deck**

We were introduced to the MX-5050 at the 1974 Audio Engineering Society convention in New York, and it was love at first sight. It seemed to have everything the serious recordist could ask for — professional editing facilities (including an Edi-Tall-type splicing block on the head cover), ease of threading, superb tape handling, and the look and feel of ruggedness and durability. It even had a built-in 1-kHz oscillator for bias adjustment, and professional-type XLR input and output receptacles. We requested one for testing, with the full expectation that it would never go back.

When we finally got a sample for testing, the transport was everything we had hoped for. A dream to use! But the sound was something else again. It was, in fact, so disappointing that we suspect a malfunction of some sort, and are reserving final judgement on the machine until we receive from the manufacturer either a verification that what we have is normal, or a replacement unit for retesting.

(No manufacturer's comment.)

**Ampzilla vs the Dyna Stereo 400**

Until (or if) the Infinity switching amplifier proves to be as good as some (including us) suspect, the two abovellistited amplifiers appear to be the sole contenders for title of Best Solid-State Amp. Here's how they compare:

Sonically, the two are obviously in the same league. Ampzilla has a very slightly sweeter high end, but both have that unmistakable solid-state crispness that some listeners hear as detail, others as a subtle hardness. The two are virtually indistinguishable through the middle range, although Ampzilla seems a hair better at reproducing depth and perspective. Neither, however, does this as well as the Audio Research Dual 76.

The Dyna has a tighter, drier low end than Ampzilla, and seems (to us) to provide more satisfying lows from most dynamic speaker systems. Ampzilla, on the other hand, produces a somewhat warmer, richer, but slightly looser low end, and the result is a somewhat woolly bottom from many large systems.

The Stereo 400 has, unquestionably, the most comprehensive and effective lineup of protective devices for both amplifier and speakers of any amplifier on the market. Both are, electrically, very quiet, but mechanical noise from Ampzilla's cooling fan is faintly (and annoyingly) audible during quiet musical passages under certain conditions related to the surface the amp rests on and its proximity to the listening area. (The same would
probably be the case were you to equip the Dyna with its optional cooling fan.)

In our opinion, neither is clearly superior, and we cannot really recommend one over the other. The choice must be the buyer's, based on sound (high or low end?), safety (protection) and price. Both, remember, are available in kit form, and upcoming legislation may kill discounting prohibitions.

(Manufacturer's Comment on Page 46.)

Russound QT-1 Recorder Switcher/Patch Box

It is a very rare pleasure in this business to come across a device which we can recommend to serious audiophiles with absolutely no reservations. This is one such.

It comprises switching for four tape recorders, allowing any one or ones to copy from any of the others or combinations thereof. It includes full patching facilities for processing devices like dbxs, Dolbys or equalizers. And it allows you to interconnect any auxiliary component in your system to any others, in any order, without pulling your preamp (or the QT-1) away from the wall and pulling plugs from the rear panel. All patch connections are made at the front of the device, by means of foot-long patch cords. It connects to the Tape receptacles on your main preamp, and all accessories connect permanently to the rear of the QT-1. You can even insert external devices into your signal circuits through the front of the QT-1 via mini-phone-jack adaptors, so that borrowed components may be tested without plugging them into the back of anything.

It is a purely passive device, in that it has no tubes or transistors to add distortion to the signal passing through it. And it has low enough circuit capacitance to prevent any deterioration of high-frequency response, no matter how it is used. High-end losses can occur only as a result of hanging too many feet of shielded cable across a single circuit -- something that can be done if you use the thing carelessly.

The cost is a not-insubstantial $249, and we will admit that it takes a while to figure out the logic of some of the hookups you'll come up with, but we found it a joy to use and a boon to the experimenter. If you've ever fumbled around behind your preamp with a mirror and a flashlight, cursing your inability to decipher *and* and *or*, you'll appreciate what we mean.

A very well thought-out and versatile device that every advanced hobbyist ought to own.

(Manufacturer's Comment on Page 41.)

Sony TC-161SD Cassette Recorder

More proof of the inherent superiority of dual-capstan drive, this has very nearly the speed regulation and stability (in the presence of cassette-feed irregularities) of the Nakamichi decks, and our sample was delivered in a state of adjustment surpassing that of any recorder we have tested for some time. (Could it have been specially trimmed up for us?) Anyway, we did find out what it could do when really carefully set up, and what we found was that it was sonically comparable to a good (but not to the best) open-reel tape machine, but with perceptibly grainier over-all sound, even when using chromium-dioxide tape. It is in fact the TC-161SD's...
EDITOR'S PREAMBLE:
No sooner did we sign up "free-lance design engineer" Walter Key as a contributor, he opted to go commercial by joining the Dahlquist Company as their chief engineer.

Our first reaction was to say Bye Bye, Walter. Then we started thinking along more practical lines and told him that we would be happy to let him continue as a contributor as long as he can stay away from topics that might put his views in a questionable light, considering his affiliation. That's called old-fashioned American pragmatism!

I will go a step further and add that the opinions and ideas in these columns will be mine alone, and will not necessarily represent the views of the Dahlquist Company. The Dahlquist Company has agreed to extend to me complete freedom as far as the column is concerned. No representative of the Company will review or affect the contents of the columns prior to publication.*

MISSING LINKS
Have you ever felt that your audio system sounds better when you listen to it late at night? Well, maybe you are just right. Have you ever disassembled your system and tried it in another location and found that its sound improved? Of course, this may undoubtedly have something to do with room acoustics, but are they the only things that might have changed? How many of the subtle changes that improved the sound could have been duplicated at the original site had you only known what to do?

I'm not going to try and answer all the foregoing questions here, but what

I am going to try and do is underscore the point that reproduced sound is affected by a number of parameters which are either little known or relatively unheralded.

Let's begin with the question of night listening. Since it would appear that the lack of sunlight or the relatively cooler outside temperatures could not affect audio systems,* we must probe a bit deeper for the probable cause. Two possibilities present themselves as likely candidates. First, many of us do not become psychologically unwound until shortly before the evening is over, so one cause of the "improved" late-evening sound could be, and probably is, psycho-acoustic. It sounds better because, when we are relaxed, we are less irritated by its imperfections. The second possibility is related to the fact that the environment late at night is usually quieter and less distracting. Traffic noise is less, air conditioners come on less often, the children are in bed, and so on.

In effect, your audio system, which is typically peak-limited in volume output (either because of equipment limitations or your own personal judgement), is now producing sound that has a greater dynamic range at your ears. The maximum level may be the same as, or even less than, during the day, but the lower extreme -- usually determined by ambient noise -- may be 10 or 20 dB less. True dynamic range is not dictated solely by equipment specifications. Furthermore, even if

* Or could they? Sunlight and high temperatures both contribute to the use of air conditioners, which can pull AC line voltage down substantially during the afternoon and early evening. This can have a profound, and deleterious effect on the sound of many amplifiers and preamps. JGH

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the upper volume level were increased in proportion to any increase in ambient noise level, in order to retain a constant dynamic range, the ear is not going to respond linearly with respect to absolute level. Also sprach Messrs. Fletcher and Munson.

More, much more should be said about the importance of dynamic range as a factor contributing to realism.* How many of you have noted that seeming effortlessness with which high-efficiency horn speaker systems reproduce orchestral crescendos or even the blast of a single trumpet? Or what about the acoustical effect of the proverbial "hushed silence" at a live performance of a great artist? In short, may I suggest that if you want to experiment with this phenomenon of dynamic range but are reluctant to raise the upper limit of your system by tripping Phase Linear 700s, you might experiment with the more mundane approach of trying to reduce the ambient noise level in your listening environment.

Here are some things you might consider trying:

- Hang heavy sound-absorbing drapes over windows and/or thin-walled surfaces.
- Move your listening room to a quieter part of the house. A basement is often ideal, for several reasons. One is because the rigidity of its walls and floor prevent the loss of bass pressure.
- Replace light, hollow doors with solid wood ones, or add a couple more hinges and fill the hollow door with dry sand.
- Add storm windows if you don't already have them. There's a reason why recording studio control rooms use double-layer glass in their windows.
- Attempt to reduce the noise produced by air vents.
- Locate the major noise-producing appliances in your home or apartment and begin a noise-reduction campaign on each one. Such appliances include fans, aquarium pumps, fluorescent lamps, etc.*

Now to the question of the subtle changes that may inadvertently occur when a music system is transferred from one spot to another. Clearly a number of changes might occur -- loose connections are tightened, poor leads may be replaced, phono arms are readjusted, and, of course, room acoustics are different. But for this very brief discussion, we will consider but one comparatively abstract parameter -- namely, phase shift vs. frequency at the listener's ears.

An active discussion has continued for years in audio circles about the detectability of phase shift vs. frequency. Unfortunately, the Aristotelian approach has often been used and as a result quantitative data is hard to come by. The question under discussion is: If I reproduce all the frequencies of the original sound, preserving all their original relative amplitude relationships at all frequencies, can the human ear detect arbitrary differences of phase (arrival time) in these frequencies?

The effect of phase shift in a group of frequencies is easily seen on an oscilloscope display, as below. But is it audible?

Some light has been shed on the subject recently by Villy Hansen and Erik

![A square wave and (right) the effect of shifting all of its frequency components by 90 degrees in phase. (From the AES Journal)](image)

Madsen of B&O in Denmark, who reported their findings in the 1974 issues of the Journal of the Audio Engineering Society for January/Febru-

* Igor Stravinsky said much more about it. In fact, he said that the dynamic-range compression that is considered necessary to produce a "commercial" recording of, say, the Rites of Spring "emasculates" the music. Also sprach Igor. — JGH

* Mr. Key has flung the gauntlet here, and I am going to ask him for his next column to suggest some specific ways of quieting air vents, fans, aquarium pumps, fluorescent lamps, etc. — JGH
ary and December in an article en-
titled "On Aural Phase Detection." The authors performed quantitative and qualitative tests using a panel of listeners and, although the results were inconclusive, they were very interesting.

The listening test data indicated that when the reproduced sound frequencies were carefully restored to the original (true) phase relationship, the improvement was detectable, particularly when the frequencies were below 1000 Hz and were being reproduced on a wideband system (i.e., flat to 20 kHz). Also, the subjects were asked "whether they received the impression that the pitch increased as a result of the change, or whether they felt that it decreased. ... The majority of listeners stated that the pitch goes down when the frequency spectrum contains low frequencies." In other words, restoring the correct phase relationship in the lower midrange and upper bass region produces the subjective impression of intensifying the fundamental frequency components in this region. (I should point out that virtually all musical sounds have their fundamental tones in the region below 1000 Hz.) Finally, one other very interesting conclusion was discussed in this article: The ear evidently judges the quality of transient attacks more on the basis of the negative sound-pressure phase than the positive pressure phase.

The ramifications of these findings are substantial, but let's get back to our system that has been moved and see if the above results could explain any of the sonic differences. Here's a list of three things that we might consider in view of Hansen's and Madsen's observations:

1) Since all musical sounds have an asymmetrical waveform -- that is, the top (pressure) phase of their waveform differs from the bottom (rarefaction), and since the ear seems able to distinguish between positive and negative pressure, the connection polarity to both stereo speakers should have an effect on the perceived fidelity of the sound. I suggest interchanging (+ for -) the connections to both speakers and observing what happens to the sound.

2) If the component parts of a sound (the fundamental and its many overtones) emanate, in a multi-way speaker system, from two different drivers, their phase relationship at your ears will depend on the relative distance of those drivers from your ears. In other words, moving a tweeter forward or backwards, relative to the woofer, will change the phase pattern of any complex sound whose components are being reproduced through both drivers.

3) The amplitudes and time delays of room reflections reaching your ears will vary from room to room and according to the placements of the speakers in any room, causing effects similar to those described in 2) above.

By now, you should be saying to yourself "Why do I need to pack up my system and move it to another room when I can bring about many of these changes in my present listening room?" Right you are! So get up and start experimenting. It will cost you nothing more than some time and a few beads of sweat. Naturally, it helps if you have a square wave generator, high-quality microphone and a 'scope, but in fact you already have the finest instrument for these tests: Your ears.

BRIEFS
The Audio Research SP-3 and its progeny is (are?) one of the few preamplifiers that are properly equalized in the phono stage down into the subsonic audio range. This produces prodigiously deep bass when fed such material from discs, but it can also cause problems under certain conditions. You have these problems if:

1) Your woofer cones flutter or bounce while playing discs,
2) Your low end from discs is substantially muddier than from other input sources, or
3) Your solid-state amplifier heats up or shuts down at listening levels which should not normally tax it.

Subsonic interference is more common than most audiophiles realize, and has become epidemic with the rising popularity of extremely compliant pickups like the ADC XLM, which requires (but is rarely used in) a tone arm of extremely low vertical mass. Being subsonic, the spurious signals are not heard, but their effects are, because

(To page 38)
Recommended Components

FEATURING ANOTHER STEREOPHILE FIRST: DO-IT-YOURSELF QUICKIES.

An entirely new approach to component recommendations, the listings which follow are followed by series of numbers, each corresponding to one of the numbered NOTES on the following pages. If you're only interested in knowing what is recommended, use the listings as you did our previous listings; just ignore the numbers. If you're interested enough in a component to consider buying it, take pencil and paper and jot down each of the numbered Notes pertaining to the component in question. The result will be a capsule "Quickie" report on that component.

Components listed here are ones which we feel to be the best available in each of four quality classes, based on all of the information available to us at time of publication.

Components are selected for listing on the basis of our own tests as well as reports in other magazines and from users. The ratings are predicated entirely on performance -- i.e., accuracy of reproduction -- and are based to an extent by our feeling that things 'added' to reproduced sound (flutter, distortion, various forms of coloration) are of more concern to the musically-oriented listener than things subtracted from the sound, such as some deep-bass or extreme-treble range. On the other hand, components which are markedly deficient in one or more respects are down-rated to the extent to which their deficiencies interfere with the full realization of the program material that is likely be fed to them.

Some of the items listed hereunder are discontinued models, but are listed because their performance and design distinguishes them as "classics," and because they are sometimes available used, at substantial reductions below their original cost.

Component classes are as follows:
CLASS A: Best attainable sound: "state of the art." CLASS B: The next best thing to the very best sound reproduction. CLASS C: Somewhat lower-fi sound but far more musically natural than average home component high fidelity. CLASS D: Satisfyingly musical sound but significantly lower fidelity than the best available.

The order in which components are listed in each class has nothing whatsoever to do with their quality, relative to that of others listed in the same class.

Components which are judged to rank near the bottom of one class and the top of a lower class are listed in both classes.

Some component categories have no D-class listings. This is because we have yet to find one of that class which is that much better than the competition to warrant singling out.

The following changes in the list have been made since the last issue:
• Stax FM pickup, despite problems & ridiculous price ($690) supersedes all others in Class A.
• Decca Mark V drops from A to B.
• Micro Seiki pickup dropped temporarily pending investigation of reports about substantial variability.
• Denon DL-103 (spherical) added in Class B.
• Shure V-15-III dropped to Class C to reflect improved state of the art.
• Stanton 681A dropped to Class D to reflect improved state of the art.
• Yamaha CT-7000 tuner supersedes

(To page 26)
Pickups
(A) Stax FM (2, 4, 6, 14, 15, 88, 157, 158, 165, 196)
(B) Denon DL-103 (1, 13, 126, 156, 157, 180)
   Decca Mark V or Import (3, 5, 12, 14, 15, 17, 88, 119, 157, 158, 165, 188, 192, 194)
(C) Shure V-15-III (8, 9, 11, 13, 18, 120, 161, 164, 177, 184, 186, 179)
   ADC XLM (3, 7, 10, 14, 119, 157, 195)
(D) Stanton 681A (8, 9, 10, 12, 15, 156, 184, 186)

Tone Arms
(A) Decca International* (16, 20, 136, 192)
   KMAL (19, 20, 22, 23, 136)
(B) Shure/SME 3099-II Improved (21)
   Modified RABCO SL-8E* (25, 24)
(C) Transcriptors "Vestigal" (18, 26, 27)
   Unmodified RABCO SL-8E* (26, 27, 25, 24)

Turntables
(A) Thorens TD-125B-II (28, 31, 30)
   Linn-Sondek (20)
(B) Technics SL-110A (20)
   Panasonic SP-1200 (20, 29)
   Philips GA-209 (29)
(C) Thorens TD-165C (29, 28, 30)
   Philips GA-212 (29)
(D) Acoustic Research XB (30, 29, 27)
   Dual 601 (29)

Tape Recorders
(A) Revox A-77-III 1102HS (32, 33, 34, 44, 45, 49, 184, 138, 157, 46, 192)
   Magra TV-SL (62, 35, 39, 40, 161, 80, 185, 46, 189, 190)
   Stellavox SP-7 (46, 39, 40, 189, 185, 62, 43, 190)
(B) Revox A-77-III-1104/1104HS (32, 33, 34, 38, 44, 45, 46, 49, 184, 157)
   Revox A-77-III Dolby (34, 38, 39, 40, 42, 44, 46, 49, 138, 185, 157, 190)
   Nakamichi 700 cassette (35, 39, 40, 42, 46, 47, 80, 139, 184, 189)
   Sony TC-756 (32, 33, 34, 46, 138, 160, 184, 137)
   Harman-Kardon 1000 cassette (39, 34, 40, 137, 183, 196)
   Sony TC-280 (34, 37, 183, 137)

Microphones
(A) Sony C-500 (55, 56, 57, 138, 157, 166, 181, 189, 192)
(B) Sony C-37 (55, 56, 157, 138, 166, 180, 181, 80)
   Neumann KM-83 (56, 158, 165, 166, 80, 136, 138, 191)
   FMI/Gp-128 1400 (55, 181, 157, 138, 195, 196, 60)
   Beyer M-500 (56, 135, 163, 80, 58)
   PML (Pearl) TC-4USV (55, 56, 57, 181, 157, 138, 59, 166)
(C) PML (Pearl) DC-20 (56) or DC-21 (55) (62, 138, 160, 61, 163)
   Beyer M-260 (56, 80, 137, 139, 162, 184, 178)
   Advent MDC-1 (135, 139, 158, 164, 139, 195, 55)
   Beyer M-550 (135, 55, 139, 163, 164, 183, 80)

Tuners
(A) Yamaha CT-7000 (69, 136, 138, 157, 161, 165, 189, 192)
   Sequerra I (69, 136, 138, 157, 161, 165, 186, 189, 190)
(B) Kenwood 700T (69, 136, 184, 161)
   Harman-Kardon Citation 15 (68, 136, 185, 166)
(C) Dyna FM-5, AF-6 (68, 135, 161, 185, 195, 77)
(D) Dyna FM-3x* (67, 181, 156, 178)
   Quad FM-3 (67, 157, 181, 185)

Receivers
(B) Kenwood KR-7400 (69, 70, 138, 162, 184, 179)
   Heath AR-1500A (69, 70, 136, 96, 186, 134, 179, 77)

Preamps
(A) Audio Research SP-3A-1 (189, 192, 136, 138, 157, 166, 181, 190, 88, 75)
(B) Audio Research SP-3A* (156,178, 181,138,136,181)
Soundcraftsmen PE2217 (86,136,195, 157,189)

(C) Dyna PAT-4 (83,135,139,184,186,77)
Dyna PAS-3* (83,137,138,184,156, 84)
Quad 33 (79,86,136,139,157,158, 161,181,193)
Ace Audio Z-D (77,78,136,79,162, 181,185)

Amplifiers
(A) Audio Research Dual 76 (80,88,91, 92,157,178,181,190)
Paoli 60M (88,92,157,163,195)
(B) Dyna Stereo 400 (77,94,125,136, 157,163,186)
Ampzilla (77,94,95,137,138,157, 163,186)
Epicure I (94,137,138,157,186)
(C) Quad 303 (95,97,137,139,161)
Harman-Kardon Citation 12 (94, 136,163,186)
Crown D-60 (80,95,138,186,195)

Speaker Systems


Magneplanar Tymanpi IIIA (103,105, 115,118,119,120,121,124,127, 136,139,159,165,88,110,190,191)

(C) Yamaha 1000 (104,105,108,118,119, 123,128,129,135,139,157,158, 165)
M&K add-on woofer (103,131,138, 140,195)
Quad ESL (103,115,116,120,122,127, 135,136,156,158,159,165,194)

IMF Studio IIIA (105,106,113,119, 124,127,130,132,140,137,156, 158,178,194)
Dahlquist DQ-10 (102,118,119,123, 134,158,159)

(D) FMI 100 (103,113,118,119,122,126, 137,139,156,157,181,195)
FMI 80 (88,103,113,119,122,127, 133,136,139,141,157,158,195)
EPI 100 (88,103,113,119,127,136, 139,141,158,162)
Dyna A-25,A-35 (103,113,119,122, 126,130,135,139,141,156,161, 177,178,185)
Dyna A-10 (103,113,119,122,126, 130,135,139,141,156,161,177, 178,185)

Headphones
(B) Koss ESP-9 (126,137,138,146,149, 150,151,154,161,165,166)
(C) Beyer DT-48 (104,105,136,149,152, 158,162,165)
(D) Beyer DT-480 (137,148,155,156,178, 180,193)

Miscellaneous Devices
(A) Soundcraftsmen RP-2212 octave equalizer (86,181,185,189)
dbx 119 device (81)
dbx 157 device (82)
Gately SPM-6 mixer (161,185,190)
Russound QT-1 patch box/recorder switcher (189)

(B) Gately SM-6A mixer (36,161,184, 192)
Advent 100A Dolby B device (39,48, 182,186,193)
Schilling MAS-1 preamplifier (42,76,161)
Supex SDT-77 transformer (76,181)

(C) Sony MX-14 mixer(34,184)
Advent 101 Dolby B device (39,48, 182,186,193)

(For explanations of parenthetical numbers, see the following pages.)
NOTES

1. Unusually low output; may need booster preamp or transformer with many preamplifiers. With booster, see Note 61.
2. Must be used with own tone arm.
3. Substantial sample-to-sample variability; should be individually selected.
4. Outstanding tracking ability.
5. Best used in Decca International arm.
6. Drifts during prolonged warmup; oscillator requires frequent realignment.
7. Use in Transcriptors "Vestigial", arm.
8. Do not exceed manufacturer's recommended maximum cable capacitance.
9. May interact poorly with some preamps.
10. Stylus damping often deteriorates in a few months.
11. Excellent 78-rpmstylus available.
12. Some mistracking of very loud modulations.
13. Mistracking inconspicuous when it occurs.
14. Mistracking unpleasant when it occurs.
15. Spherical tip, requires over 2 grams tracking force.
16. Requires 5¾-inch depth below top of platter.
17.
18. Use only with extremely compliant cartridges.
19. Use only with cartridges tracking at 1½ grams or less.
20. Outstanding immunity to acoustic feedback.
21. Use non-detachable-headshell model if possible.
22. Mercury contacts have too much resistance for use with moving-coil cartridges.
23. Poor arm-lift device. Discard and use damped add-on lifter (Ortofon, Supex).
25. Some mid-range rumble audible at very high listening levels; whirring noises audible from close proximity to arm.
26. Often delivered in need of some adjustment.
27. Excessive tone-arm-pivot friction in some samples.
28. Some acoustic feedback tendency at very high listening levels.
29. Integrated arm/turntable. Performance can be improved by replacing tone arm.
30. Excellent external-shock isolation.
31. Remove red-painted shipping screws from underside before installing.
32. High-speed (7½ & 15 ips) model.
33. Available in 2-track version.
34. Unbalanced microphone inputs may cause hum.
35. Setup adjustments accessible without removing cabinet.
36. Non-illuminated meters difficult to read in low-light situations.
37. Edit cueing not possible.
38. Rising low end in some samples.
39. Built-in test oscillator:
40. 1000 Hz.
41. 10,000 Hz.
42. Unusually good s/n ratio.
43. 10½-inch reel adaptors available at extra cost.
44. Awkward to thread.
45. Does not meter output signal.
46. Separate play head facilitates adjustment for specific recording tape.
47. Instructions describe user setup for specific recording tape.
49. Human engineering poor; controls not in logical locations.
50. Omnidirectional.
51. Cardioid.
52. Bidirectional (figure-8).
53. Emphasized presence range, rolled-off low end; ideal for speech or pop vocal.
54. Signal dropout if polar pattern is changed rapidly.
55. Somewhat awkward to handle.
56. High output may overload some preamps.
57. Choice of AC or battery-powered supply.
58. Fairly low sensitivity.
59. Moderate sensitivity & selectivity.
60. Very highly sensitive & selective; ideal fringe-area tuner.
61. Tuner section better than audio section.
62. Much-needed instructions not supplied.
63. Low phono to high-level phono (booster).
64. Available in kit form.
65. No tone controls.
66. Low output voltage; will not drive most US-made power amplifiers to full output.
80. Outstanding record for dependability.
81. Volume compressor/expander can be used as tape-record noise-reduction system as well as for existing recordings.
82. Professional tape-noise-reduction system.
83. Poor tone-control action.
84. Use only with tube-type power amplifiers.
85. Equalizer judged less useful than conventional variable-inflection tone controls.
86. Flexible and effective control lineup.
87. Some hiss audible through high-efficiency speakers; use power amp with input level-set controls.
88. Unsurpassed reproduction of inner detail and depth perspective.
89. Integrated preamp/amplifier.
90. Very low input impedance; not for use with tube-type preamplifiers except Audio Research SP-3/3a.
91. Floating 0-ohm output terminals; may not be usable with common-ground headphones or speaker-switching devices.
92. Best with electrostatic tweeters or tweeters with comparable transient performance.
93. Some samples may oscillate at full-up volume-control setting.
94. Best with typical dynamic tweeters.
95. Under-damps low end of many dynamic woofers.
96. Over-damps low end of many dynamic woofers.
97. Very high gain. Will produce audible hiss from most US-made preamplifiers. Use with matching preamplifier or with input attenuators.
102. Very low efficiency.
103. Fairly low efficiency.
104. Fairly high efficiency.
105. Will produce very high listening levels with adequate power. Watch for hearing damage.
106. Does better with good solid-state amplifiers than with tube amplifiers.
107. Difficult load for most amplifiers.
108. Best driven by top-notch tube amplifiers.
109. Cross over above 2,500 Hz unless modified. (See "Keywords" in this issue.)
110. Must be biamped.
112. Best in very large listening rooms.
113. Ideal for small listening rooms.
114. May be biamped for considerably higher efficiency and better control of driver balance.
115. Unusually critical of room placement.
116. Use Quad 303 power amp or one of similar power rating.
117. Beamy high end.
118. Unusually spacious sound.
119. Excellent stereo imaging.
120. Moderately good stereo imaging.
121. Very large apparent sound source.
122. Excellent driver blending.
123. Woofer does not blend well with upper range of system.
124. Some audible discontinuity between upper-range drivers.
125. Very comprehensive protection circuitry.
126. Slightly distant perspective ("Row M").
127. Neutral perspective ("Row H").
128. Rather forward perspective ("Row A").
129. Very "gutsy" and authoritarian sound.
130. Some vowel-like coloration.
131. Passive crossovers, available for use with Magneplanar and Quad systems, allow for common-bass (single-woofer) operation.
132. Tendency toward boominess.
133. Some upper-bass drumminess.
134. Somewhat loose low end; needs high-power ed amplifier with very high damping factor.
135. Lean, dry low end.
136. Extremely tight, well-defined bass.
137. Rich, fat low end.
138. Very deep bass range.
139. Somewhat limited deep-bass range.
140. Low end may be underdamped by some amplifiers, producing flaccid heaviness.
141. Low end may be overdamped by some amplifiers, producing excessively lean, dry bass.
142. Must be driven by power amplifier.
147. 2000 ohms (Hi-Z).
148. 200-600 ohms.
149. 4 ohms.
150. Electrostatic.
151. High rejection of outside sounds.
152. Moderate rejection of outside sounds.
153. Designed for minimal rejection of outside sounds.
154. Heavy weight.
155. Very lightweight.
156. Extreme highs slightly soft, sweet.
157. Airy, open high end.
158. Bright, very "alive" sound.
159. Slightly mizzly high end.
160. Somewhat hard over-all sound.
161. Slightly dry high end.
162. Slightly hard high end.
163. Crisp high end.
164. Wiry high end.
165. Extraordinary focus & "snap."
166. Unsurpassed high-end transient response.
167. Rather diffuse sound.
168. Somewhat deficient in snap and sheen.
169. Somewhat 2-dimensional sound; deficient in depth perspective.
170. Somewhat over-ripe, richer-than-life sound.
171. Liquidly transparent, lucid.
172. Slightly dark, heavy.
173. Slightly grainy over-all sound.
174. Slightly veiled.
175. Very subtly veiled.
176. Slightly dry sound.
177. Best used in a moderately bright acoustical environment.
178. Despite any deficiencies, this is one of the most accurate sound reproducers in its component category.
179. Fantastic!
180. But is it worth the money to you?
181. We don't really like this but a lot of people whose judgement we respect do.
182. Our personal favorite, as of now.
183. We feel rather so-so about this. Better audition it before deciding.
184. A mixed bag. We like it but you may not.
185. Best sound for the money.
186. Failure rate not yet established.

SOURCES of Items Not Generally Available.

Schilling (preamp): See ad in this issue.
McK (Woofers) 8719 Wilshire Blvd., Beverly Hills, Ca. 90211.
Paoli (amplifiers) P.O. Box 876, Paoli, Pa. 19301.
PML (mikes) Ercona Corp., 2492 Merrick Rd., Bellmore, N.Y. 11710.
Stax, Zerostat: American Audioport, 909 University Ave., Columbia, Mo. 65201.
Decca (pickups) Paoli (see above)
RABCO (modifications) DKL Labs, P.O. Box 683, Severna Park, Md. 21146.
Linn-Sondek (turntable) Paoli (see above) or Audiophile Systems, 851 W 44th St., Indianapolis, Ind. 46208.
KMAL (tone arm) Audiophile Systems (see above for Linn-Sondek)
Nagra (recorder) 19 W 44th St, Rm 715, New York, NY, 10036.
Stellavox (recorder) Hervic Electronics, 1508 Cotner Ave., Los Angeles, Ca. 90025.
Beyer (DT-48 phones) Gotham Audio (see above).
Beyer (other products) Revox Corp., 155 Michael Dr., Syosset, NY 11791.
Denon (pickups): Audioport (See Stax), Music & Sound, or Schilling (See ads in this issue.)
Gately (mixer) 57 Hillcrest Ave., Havertown, Pa. 19083.

CHANGES (from page 14)

Marantz 10-B in Class A for superior performance at comparable price.
- Infinity SS-1A and FMI J-Modular speaker systems supersede all others in Class A. Those are dropped to Class B to reflect improved state of the art.
- The Advent speaker system has been superseded in the listings by several superior performers of comparable cost.
- The Harman-Kardon Citation 11 preamp has been superseded by the Dyna PAT-5 in Class B.
- Schilling MAS-1 booster preamplifier supersedes Mark Levinson JC-1 in Class B.
Record Reviews


If you're building a collection of staples or are replacing your 15-year-old mono warhorses, this is the Beethoven Violin concerto to get! Grumiaux's playing these days on Philips releases is a joy, and with superb orchestral support from Colin Davis and the Concertgebouw, plus radiant sound, what more could we want? From the first, one senses a rhythmic tightness, firmly controlled. The violin is recorded somewhat forward of the orchestra, but without gross spot-lighting. The balance is commendable, and the overall sound is eminently natural, the bass being particularly clean and taut. Grumiaux opts for the Kreisler cadenza in the first movement, and the superb control of his performance is shown to best advantage by Philips' stunning recording. Davis shapes the largoetto sensitively, and all leads into the familiar rondo logically and without the frantic dash that characterizes some performances. The end elicits an almost irresistible urge to applaud. WM


Ambiphon is the new company that developed a tape-recording system which is claimed to achieve 90 dB of signal/noise ratio without the use of any signal-processing devices like the Dolby or dbx. Ambiphon's first commercial releases were on discrete quadraphonic tapes, and although Stereophile never heard any of the tapes, we did hear reports from people who had, and who said they were indeed extraordinarily quiet. We are sorry to have to report that this is not the case with this disc. Even at only moderately high listening levels, tape hiss is clearly audible, at a level suggesting a s/n ratio of more like 55 dB. And it doesn't sound like disc hiss, either. We have in fact many discs on hand which are far quieter than this one -- all of them made from Dolbyed masters. But few of them have sound on them like this!

This is in fact one of most natural-sounding recordings of a grand piano that we have ever heard, with what is quite probably the widest dynamic range with which piano has others. The musical mainstream here is represented by Artie Matthews, Eubie Blake, Jelly Roll Morton and many more.

In all cases, the performances and the sound could hardly be bettered. These "compatible" SQ discs were not auditioned in quad, but they sound fine in stereo, with no peculiar reverb or distorted balances. It's impossible to single out individual pieces for special mention, but we might say that the pianistic ones often get the most sympathetic treatment. This whole collection, plus Joshua Rifkin's Nonesuch recordings might be considered a basic library of rags if you're trying to sort your way through the plethora of Jopliana, etc. But always take your dessert in small doses -- no more than a side at a time for best digestion! WM

THE ROAD FROM RAGS TO JAZZ. New England Conservatory Ragtime Ensemble, Gunther Schuller. GOLDEN CREST CRS-31042 - 2 discs, SQ Quad. ($13.96 from Golden Crest Records, 220 Broadway, Huntington Station, New York NY 11746 or from local dealers.)

Here's another late entry in the rags grab-bag, and it's a winner! Schuller himself arranged or edited most of the compositions, and he also provides detailed program notes on the inner two pages of the jacket. The compositions are grouped by period, and include an entire side devoted to "the classical influence" -- works by Gottschalk, Ives, Satie, Stravinsky and
ever been recorded. Even more remarkable is the fact that it was taped, not in a hall, but in a largish living room -- an accomplishment that can only be appreciated by anyone who can recall his own fruitless efforts to capture a true piano sound in a room that small, with its standing waves and eigentones scattered throughout the entire musical mid range. This recording sounds like exactly what it is: a fine, darkly rich-sounding piano in a large, opulently-furnished room.

Miss Ryshna -- whose name is, to quote William Marsh, hardly a household one -- is an excellent technician with an uncommon understanding of the wide range of musical styles that she tackles here. She is best with the impressionists; her Prokofiev seems a little lacking in incisiveness although she copes admirably with the complex rhythms. On the other hand, this may just be a case of a piano that is ideal for one kind of music being less than ideal for another. Oddly, the Chopin is done least well; it seems formless and directionless, like notes in search of a purpose.

But as a piano recording, this is going to be hard to beat! It is, however, a crying shame that people with the capability of producing such superbly natural recordings as this must be content to record pianos, pipe organs and small chamber ensembles while ones with the wherewithal to record symphony orchestras (like the Fisher disc reviewed in this issue) must somehow manage to botch the job. Is there no justice?

JGH


The Korngold Trio is a remarkable work completed when the composer was but 12 years old, yet it is no child's piece, but a work of the genius we've heard about. A mature, Romantic work on any count, the Trio here receives a performance of unusual richness. The Pacific Art Trio distinguishes itself with a secure reading made all the more enthralling by a superb recording. Delos has expressed their intention of producing recordings as good as Europe's best, and damned if they haven't succeeded here! I have not heard finer piano sound through the entire range of the instrument, and the whole is simply gorgeously balanced. The "Mastered by Capitol" stamped on the disc may tend to put most of us off, since we have all heard what that means on most Angel discs, but fear not. I'll play this disc again and again, for the music and the sound.*

And as if that weren't enough, the Ives Trio on the flip side, written at about the same time on this side of the Atlantic, receives its finest recording to date, too. All the inner voices, the songs, the hymn tunes, stand out with perfect clarity in a performance of great warmth. In short, this must count as one of the best records of the year. It's a magnificent production, abetted by the jacket with its clever art work and superb notes by Harold Truscott. Bravo Amelia Haygood (the producer) and the Delos team! WM


Nonesuch again presents individualistic Horenstein readings of two staples from the 20th century repertory. These are particularly significant in that the 1970 Strauss and the 1972 Hindemith were the last studio recordings Horenstein made. Both were done at Walthamstow for the Unicorn label, and appeared originally on Unicorn RHS 312. The Nonesuch mastering sounds fine, although I do not have the Unicorn version for comparison. The re-

*This makes the sound of typical Angels all the more irritating, for it would seem to be conclusive proof that Capitol does have the equipment and the competence to turn out superb recordings when they feel so inclined.
cording has spaciousness and depth, without the close-up two-dimension-
ality that, say, an Ormandy recording of these works would get on RCA or
Columbia. Horenstein shapes his per-
formance of the Strauss with an e-
egance that is enhanced by luminous
strings, clean brass and superb dy-
namics. The finale is particularly
effective, and the solo harp notes
stand out in proper perspective with-
out sounding like an electric guitar.
A most satisfying performance, and
probably the best available these days.

The Hindemith too is a revelation! Per-
haps the most accessible work from
this composer's prodigious output,
the symphonic version of Mathis der
Maler (it was originally an opera)
stands or falls on how well the con-
ductor can tie the three sections to-
gether as a cohesive statement. If
the title of the opening Engelkonzert
is to be taken literally, then per-
haps the high-voltage Ormandy or
Steinberg performances are a little too
driven; Horenstein manages to
get across a reading that glows from
within. The expansive slow movement
gives way to a powerful close with
glorious brass sounds. Throughout
there is tremendous dynamic range and
depth to the sound, yet there were no
tracking problems, and only a tick or
two marred the pressing. Bouquets to
Nonesuch for making these performances
widely available in the US. I am anxi-
ously awaiting Horenstein's Mahler
Sixth, to be released shortly. WM

THE FISHER FIDELITY STANDARD
A low-distortion musical pro-
gram source for evaluating
high-fidelity equipment. Former-
ly available for $1 from Fisher
equipment dealers.

This was brought to our attention by
reader (and orchestra concertmaster)
Leo Ahramjian because, although no
longer available, it should not be
allowed to pass without comment.

Touted as a disc "to tax the capa-
bilities of any system to the limit,
making good systems sound good ... and
great systems sound great," this
is in fact an example of what is
wrong with modern recordings.
The pops side is pretty good, but
then pops don't have anything to do
with the real world of live sound.
But the classical side typifies what
has driven musically-oriented lis-
teners away from Angels and Columbias
to Philips and EMI's. Some selections
have bellowing ersatz reverb, most
are lacking in any vestige of depth,
all have a snarly edge, and massed
violins screech like un-oiled bear-
ings. In addition, everything is
overlaid with a thick, velvet fog
that rounds-off transients and dulls
detail. All in all, this is a veri-
able primer on how not to make class-
ical recordings.

Now that the disc has been dis-
continued, it is pointless to be-
labor further its shortcomings.
What is so unfortunate about some-
thing like this is that it serves,
ot to promote truly higher stand-
ards of musical sound reproduction,
but to sanctify a state of the audio
art that was surpassed 10 years ago.
Faced with a production like this,
we are obliged to raise the question
of whether the people responsible
for it simply didn't know any better
or whether, like the producers of
most other domestic recordings, they
were intentionally screwing up the
sound to heighten the apparent fi-
delity when the disc was played
through "average" reproducers. The
fact that much of what ails this
disc is obviously the result of tam-
pering with the original sound seems
to suggest the answer. We are just
sorry that Mr. Fisher, who has done
so much to perpetuate the cause of
good music, saw fit to dignify this
mess with his name.       JGH

BRAHMS: Complete Piano Quartets.
Beaux Arts Trio; Walter Trampler,
viola. PHILIPS 6747 068.

(Guest Review by Jerry Moore)

Brahms, at Detmold, entered what can
be considered his second creative peri-
od, initiated by the composition of
his String Sextet in B flat major. The
G minor Piano Quartet, Op. 25, and the
A major Piano Quartet, Op. 26, both on
this recording, were composed during
the same period when Brahms was in his
mid-twenties. The third Piano Quartet
in C minor, Op. 60, originated from
two different creative periods. The first movement (originally in C sharp minor) and the E major Andante were composed in 1885, but Brahms was dissatisfied with the work and shelved it until 1873-74 when, after extensive revision and the addition of the scherzo, he completed the C minor Quartet as we know it. This Philips disc features the superb talents of Menahem Pressler, piano, Isidore Cohen, violin, and Bernard Greenhouse, cello, with the comparable musicianship of Walter Trampler, viola. These works make particular demands on the players, both technically and musically, but this ensemble meets the challenge quite successfully. Walter Trampler's technique is better here than on some other recent releases, and the group's sense of ensemble and period romanticism has produced a welcome addition to the catalog of Brahms' chamber works -- an outstanding recording, but certainly not a replacement for the old Rubinstein-Guarneri collaboration (still available on RCA 6188).

The recording has a refreshingly lifelike concert-hall sound, with no trace of electronic tampering. It is my hope that this group will continue with Philips and record, perhaps, the Mozart, Faure, or Mendelssohn quartets with the same musical consistency, technical mastery, and fidelity of recording.

(Jerry Moore, former violist with the Syracuse Symphony, has done some newspaper reviewing and is an avid record collector. He is now a free-lance violist in Philadelphia.)


Nonesuch seems to be the leading record company for sensing when the time is ripe to wow 'em with rags, Ives, or other Americana. This disc is one of the delights I turn to as a respite from Buxtehude or Berio. Only an old sourpuss could fail to be turned on by the superb artistry of Miss Morris, who can sound like a brassy music-hall broad ("I've Got Rings on My Fingers") or a Sunday-school soprano ("On the Banks of the Wabash, Far Away"). Mr. Bolcom contributes accompaniments that couldn't be bettered -- his best work to date for Nonesuch! All the songs are treated as true art songs of their period, and not smugly whipped off in high camp style. Excellent notes by Miss Morris and the complete texts to the 14 songs (all verses are sung, too!) round out another beautifully produced Nonesuch album. The sound is excellent, and the Baldwin SD-10 that Bolcom uses sounds positively lifelike! Live performances of this pair are few, but catch them if they hit your town. Meanwhile, treat yourself to a gift, and stock up on more for next Christmas.


MHS gives us another Lyrita recording featuring the London Symphony and the London Philharmonic in the only existing recordings of four lesser-known English works. Holst, always fascinated with Eastern culture, rewards us with a colorful score based mostly on thematic material supplied by the Japanese dancer Michio Ito, and Sir Adrian conducts a performance that illuminates all the exotic instrumentation. MHS has transferred the Lyrita sound successfully, with superb balances between the orchestral choirs and the percussion. The Bliss piece dates from 1921, apparently revised since, and was premiered at a Sir Henry Wood Prom concert. The composer wished "to convey the rhythmic verve and Bakst-like colour of many of Lovat Fraser's paintings," and the score is in his memory. Sir Arthur, recently deceased, adds to his recorded legacy an expan-
sive reading characterized by lovely pastoral strings, telling brass and spiky percussión. The sound is excellent. Walton's music is an orchestrated version of a set of piano duets, and here, unfortunately, the titles of the short sections are not given, which detracts from their enjoyment. And while these are good in this orchestrated form, I'd like to hear the original piano version. The real sleeper on this disc is a peculiar suite of Catalan dances, Mont Juic, composed jointly (before World War II) by Berkeley and Britten. (Who did what and how much?) The sound of the orchestra here is gorgeously balanced. Anglophiles take note and add this potpourri to your collection. Isn't it nice to have a disc that duplicates nothing else you're likely to have already? WM


Zarathustras continue to come at us almost monthly, but this one is the most satisfying in some time -- even more so than the Karajan performance reviewed in the last issue. If Karajan's mannerisms are not your cup of tea, then I think Haitink's approach will please you. The opening is magnificent; after a particularly long and well-defined organ pedal there is a burst of excitement culminating in a thrilling blast on the organ at the end of the opening statement. One of the best yet! Over-all, Haitink's control is marvellous, and Philips provides gorgeous string sound and brilliant brass. Bernard Krebbers' violin solos fit nicely within the dynamic framework and the beautiful hall sound. The pressing was flawless, as is usual with Philips. A recording to return to again and again. WM


The MRS has been revived after a move from Philadelphia, and features certain performances taped live at Marlboro festival performances. These are in no way connected with the Music from Marlboro series released on Columbia, but are more or less "underground" recordings now legitimized. Sometimes the players are just the students (all

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Angel's Americana, besides myself, it refers to the Eastman Rochester Archives, the Institute of American Music of the University of Rochester which has reissued five Mercury discs of Americana, all under Howard Hanson's direction. Liner notes and covers are identical to those of the original Mercurys, and the sound is about the same as before, too. No "Golden Import" treatment. Phonogram tells me the pressings are by FRC in Richmond, Indiana -- the old Mercury plant. American BASPs are also made there, which may explain the wretched pressings of some of them. Remember "domestic Philips"? No such problem with the ERAs however, although I wonder how the 1953 "Americana for Solo Winds and String Orchestra" (formerly MG 50076, now ERA-1001) can be labeled "stereo" when it was originally available in mono only. The other 4 releases were originally in stereo, although ERA identifies 1002 as the old MG-50114 which was a mono number. Each disc is $5.98 or $20 for all 5, from Carl Fischer, Inc., 62 Cooper Square, New York, NY 10003. • Michael Smythe of Vista Productions, 64a Lansdowne Rd., London W11 2LR England, informs us that his Vista discs now retail for $5. • RCA (British) suddenly deleted much of its Victrola catalog, including the majority of Smythe's RCA recordings of British organs. The new RCA Pickwick label may or may not reissue these (any bets?), but all the remaining inventory was bought by The Organ Record Centre, 89 High St., Eton, Berks, SL4 6AF. Send for their price list. Imagine, a store that sells only organ records! And a few of those British organ recordings have stuff on them below 30 Hz! • Another source of imports and all records at discount prices: Berkshire Record Outlet, Inc., 910 South St., Pittsfield, Ma. 01201. Ask for price lists and catalogs. They're a good source for discs distributed by NYC's German News Co., Inc. • David Booth, sometime reviewer in these pages, was the violinist at the Delius concert discussed in the last issue ("Operation Fenby"). The Mandell Theater, by the way, seats 473, not 300. • The British CBS version of Bernstein's Mahler 2nd is being pressed and packaged in Germany. Unicorn has the same arrangement. Could this indicate a trend? • The reissued and remastered Schoenberg Gurrelieder conducted by Kubelik on DG has appeared in the US on DG's Privilege label. That's a budget label in Europe, but import costs prohibit it being marketed as such here. • The Percy Grainger Library Society, 7 Cromwell Pl., White Plains, NY 10601, offers members interesting noncommercial recordings of Grainger's music. Stewart Manville will supply details. • Delos Records has signed the young American organist George C. Baker to do a series of recordings on the great European cathedral organs. The first will be some rare Milhaud works recorded at Chartres. Also for Delos, Carol Rosenberger will record Szymanowski's complete piano works. Volume II appeared in August, and Vols. III and IV will be out in 1976. • Good listening, and thanks for your helpful correspondence.
**Quickies**

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<th>Composers</th>
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<td><strong>MAHLER: Symphony No. 4</strong> in G, Judith Blegen, soprano; <strong>Chicago Symphony Orchestra, James Levine. RCA ARL1-0895.</strong></td>
<td>A beautifully shaped interpretation with near-perfect playing from the Chicagoans, and exceptionally natural sound -- quite unlike that of RCA's Philadelphia Orchestra recordings, for example. The bass is not however as deep as we hear from the same orchestra's recordings for London. The only real disappointment here is Judith Blegen's delivery, which sounds awfully &quot;straight&quot; with all notes in place and all dynamics observed, but without that special luminosity which makes Emmy Loose's performance (with Kletzki on Saphir's S-60105) such a joy to hear. That is still my favorite recording of the 4th.</td>
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<td><strong>BEETHOVEN: Sonata No. 29 in B flat major, Op. 106 (&quot;Hammerklavier&quot;); Variations on a Theme by Diabelli, Op. 120. Webster Aitken, piano. DELOS DEL-24101/2 (2 discs, re-channeled for stereo).</strong></td>
<td>I have never heard of Aitken, and I still wonder why Delos devoted two discs to him, in fake stereo yet! The 1961 performances were at the University of Illinois while Aitken was a visiting professor there, and while his individuality was remarkable, his technique was a shambles! Tempos are exceedingly fast, there are some painful flubs, and the phrasing is dreadful! For a controlled performance in this style, get Beveridge Webster's Op. 106 on Dover HCR-ST-7008 before it is black-diamonded. Serkin's reading on Columbia M-10081 is also worthy, but I have heard him give two live performances that were even better.</td>
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<td><strong>MOSZKOWSKI: Concerto in C major for Violin, Op. 30.</strong></td>
<td>This was all news to me. I had never heard of the Moszkowski Violin Concerto until this appeared, nor had I heard of Guiraud. The Concerto is the epitome of Romanticism, and Treger copes handily with the mood and the myriad of technical difficulties. The recorded sound is not too clean and the solo miking is a bit over-close and wry. The Guiraud is not very inspired, and not very well recorded either. The recording can be recommended only with reservations, for people who are tired of the Tchaikovsky Violin Concerto.</td>
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<td><strong>SAINT-SAËNS: Symphony in A major; Symphony in F major (&quot;Urbs Roma&quot;). Orchestre National de la ORTF, Jean Martinon. ANGEL S-37089.</strong></td>
<td>Here is a Pathé Marconi disc identified on the record jacket as a stereo disc, but actually pressed in SQ quad. This is probably being done so the disc won't be relegated to the Quad bin in a record store (where few people browse), and since SQs are fully compatible for stereo reproduction, there is no question here of misrepresentation. SQs can be identified easily; the &quot;Angel&quot; logo on the jacket front is round instead of rectangular with rounded corners. Come to think of it, maybe this release is not all that compatible; it is drowning in hall reverb, and quad decoding might help separate the instruments from the soup. The recording still wouldn't take any prizes, though; string sound predominates, and there is little dynamic range or detail. Perhaps for that reason, the performances didn't move me either. For early Saint-Saëns, I'd suggest the Martinon Symphonies 1 &amp; 2 on Angel S-36995.</td>
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<td><strong>CORELLI: Concerto Grossi, Op. 6. Academy of St. Martin-in-the-Fields, Neville Marriner. ARGO ZRG-773-5. (3 discs)</strong></td>
<td>The finest presentation of these famous chamber works on records. The 12 works here have been arranged in a listenable order, and Marriner has elected to perform Nos. IX through XII with single players to a part. There is however no thinness of string tone as a result, but a rich, warm string sound and nicely balanced continuo. The famous &quot;Christmas Concerto&quot; (No. VII) is saved for the last, and here we get absolutely gorgeous, luminous string sound. The recording is not quite as lush as on the Vivaldi Four Seasons (Argo ZRG 654), but the set is most highly recommended.</td>
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<td>MUSIC FROM GREAT SHAKESPEAREAN FILMS. SHOSTAKOVICH: Hamlet. WALTON: Prelude to Richard III. RÓZSA: Suite from Incidental Music to Julius Caesar. National Philharmonic Orchestra, Bernard Hermann. LONDON PHASE 4 SPC 21132.</td>
<td>This is one of the best film-score recordings yet. The &quot;Hamlet&quot; suite is drawn from incidental music written originally for a stage version of the play, the Walton here was arranged from several parts of the film score by conductor Muir Mathieson, and Rózsa's &quot;Julius Caesar&quot; was composed for that star-studded film with Brando, Mason, Gielgud and Calhern (1953, MGM). It is interesting to compare Rózsa's &quot;ghost&quot; music (mysterious strings) with Shostakovich's (terrifying brass). The sound is stunning, without Phase 4's usual gimmicking. Interesting and enjoyable music, which serves to what our appetite for more. (More of the Walton score is available on Seraphim S-60205, but the sound is a shallow shadow of what's on this disc.)</td>
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<td>MAHLER: Des Knaben Wunderhorn. Elisabeth Schwarzkopf, Dietrich Fischer-Dieskau, London Symphony Orchestra, George Szell. ANGEL S-36547.</td>
<td>&quot;Definitive&quot; is a term that is being used all too loosely in reviews these days, but here is a disc that truly justifies it. The performances are sheer delight, and the recording, a 1968 Angel release, is everything that most Angels are not: rich, sweet, lucid, and extended at the bottom. A collector's item for lasting enjoyment. Get it.</td>
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<td>THE WESTWIND WIND QUINTET PLAYS MUSIC BY CORTES, CHÁVEZ, REVUELTAS AND GINASTERA. CRYSTAL S812. (SE.98 from Crystal Record Co., P.O. Box 65661, Los Angeles, Ca. 90065 or from dealers.</td>
<td>Peter Christ doubles as oboist in the Westwind Quintet and as president of Crystal Records, another fine West Coast company. The two Cortés works here are of academic interest although well played. The Revueltas pieces are tongue-in-cheek miniatures that could have been film music, and the Ginastera is easy listening and superbly performed, as is the Latin-flavored but modern Chávez. The recorded sound is excellent, as is usually the case with small record companies there days. Send for Crystal's catalog, which is heavy in the brass and woodwind chamber literature.</td>
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<td>BEETHOVEN: Sonata No. 24 in F sharp major, Op. 78 (&quot;For Therese&quot;); Sonata No. 29 in B flat major, Op. 106 (&quot;Hammerklavier&quot;). Alfred Brendel, piano. PHILIPS 6500 139.</td>
<td>Not a very satisfying release. Brendel gives a beautifully detailed reading of the &quot;Hammerklavier,&quot; but it is a low-key one with slow tempos and a bit too much refinement. The F Sharp Sonata is sensitively performed, but the sound on both sides is rather shallow, with woofy bass, and my pressing was surprisingly noisy.</td>
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<td>MOZART: The Early Symphonies. Academy of St. Martin-in-the-Fields, Neville Marriner. PHILIPS 6747 099 (8 discs, manual sequence).</td>
<td>This set is worthy of every award it has received! By now, Stereophile readers should have learned to opt for an Academy version of anything, regardless of label. These are lovely performances grace by musically satisfying recordings with (in my case) flawless pressings. Despite the high cost, this set should be part of every serious collector's library.</td>
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<td>HOVHANESS: Symphony No. 9, Op. 80 (&quot;St. Vartan&quot;). National Philharmonic Orchestra, Alan Hovhaness. UNICORN RHS 317.</td>
<td>Although American-born, Alan Hovhaness has been deeply involved in the philosophy and music of Armenia, and this is reflected in his later compositions. This work commemorates the 1500th anniversary of Saint Vartan Marmikian who had led the Armenians to victory against a Persian invasion, thus saving them from an enforced conversion to Zoroastrianism. This performance is presumably definitive, since the composer himself conducts the 24 short movements, and the recording has nice depth and spaciousness.</td>
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<td>&quot;OVER THE HILLS AND FAR AWAY.&quot; The Music of Percy Grainger. University of Illinois Symphonic Band. UNIV OF ILLINOIS RECORD 74/75 (2 discs, $10 + 35¢ postage.)</td>
<td>This one is a real sleeper! Marvelously jaunty, sensitive performances, awesomely virtuosiic playing, and remarkably natural sound (considering that these were taped at live performances) combine to make this a veritable hair-raiser. I never realized what mediocre woodwind playing we have all taken for granted on band recordings until I heard the firm, rock-solid intonation of this group. Order it from U. of Illinois Bands, 1103 S. 6th, Champaign, Ill. 61820.</td>
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GENESIS: Selling England by the Pound. THE FAMOUS CHARISMA LABEL. FC 6060 0598.

I had intended to review this album last time and several people, notably reader R. P. Segura, have since suggested it. Oddly enough, a friend recommended it to me a few months after I had already played it for him; it just goes by you without your being able to focus on it. Three weeks later you catch yourself humming parts of it, without being sure where you picked it up.

Recording defects are minor, but are of the kind that can be distracting. Definition is exceptional, but has a tendency to break down during complex instrumental passages. Vocals have a papery-sounding distortion that makes them sound rough although not particularly irritating or hard. I can listen to something consistently rancid (but contextually brilliant -- like almost any Moody Blues album) without catching even a hint of the irritations I hear in this one. I would have been a lot cooler toward this album had I reviewed it earlier, but despite its shortcomings I've enjoyed it more every time I've played it. It has some very deep bass on it.


Since this album seemed to fade away rather quickly I would normally ignore it, but some of you noticed my ambivalence in the Brain Salad Surgery review, and this album illustrates some of the problems that caused it.

When I first listened to this 3-disc album I thought I had discovered something that would replace History of Eric Clapton as my reference recording of a famous artist being butchered by an incompetent recording company. False! Based on what I heard standing at the edge of the stage during a really beautiful performance in Savannah, Ga., I believe that this mess captures only the worst elements of E L & P's live act: A tendency to substitute speed for elegance and loudness for structure. Most important, the group relies so heavily on electronic amplification that the live performance itself sounds like a very loud, fairly clean but exceedingly hard and colored hi-fi system. Aside from hiss (made more noticeable by very quiet surfaces), some feedback, tape splices, and what sounds like overloading electronics, this is an outstanding reproduction. Of an unrealistic event. By a group that can do better.

Brain Salad Surgery was a better performance with better equipment, but it still wasn't realistic and the disc was more veiled than this series. I recommended RSS because I liked it despite its shortcomings. This triple live album has no redeeming qualities.

APHRODITE'S CHILD: 666. VERTIGO VEL-2-500.

Golly, this job does have its rewards. I read something about this in Stereo Review's "Hall of Obscurity," but I thought nothing of it until I received a letter from G. Engebretsen who raved about it. None of the people I've asked have heard of this album, and I was rather surprised yesterday when my left hand started twitching over a local record rack and "666" rose up like a card from a magician's deck. "666" refers to a passage in the Bible that some folk think foretells the final global brouhaha, to occur in the next 25 years, as predicted by everyone from Nostradamus to Ehrlich. "666" is also the identifying number of the Anti-Christ who referees.

One day isn't enough to tell how I'm going to like this album in the long run, but right now I feel like I've been melted down to a pair of singed Hush Puppies. Quality is hard to judge, since the brain can lose track of things and mistake the result as fatigue, and the wide dynamic range makes surface noise more noticeable. There is also an intermittent veiling effect that seems almost to be used instrumentally. Aside from a slight lack of depth, I'm starting to think this is the best album I've heard in years.

THE FIRESIGN THEATER

You have probably read speaker reports that suggested that you audition with natural sounds like clanking chains, storms, animals and other things that give an easy reference to live experience. The problem is that most

1. If a=6 and b=12 and c=18, etc., guess what "Kissinger" adds up to?
2. Cop out! (JGN)
sound-effects albums are a real bore, dominated by reject Walt Disney announcers with adenoid problems.

Firesign Theater uses sound effects, but in a way that has to be heard to be believed. Firesign creates worlds based on sound; detailed and realistic sound. Where you are and what you perceive is based on puns, plays on words, free association and subtle aural clues. We've missed parts of the albums repeatedly because we were answering the door or looking for the fire engine in the front yard. Most of you are probably already fans, but there are still areas all over the country where nobody has heard of the group because its recordings aren't played on the radio. A couple of the albums have warnings that the FCC isn't too big on them, but I believe this is more because of the "War of the Worlds" factor (dummy news bulletins) than because of anything in the subject matter that would turn your sweet old granny into a psychotic killer.

I've heard several but not all of Firesign's albums, but I don't think you can get burned on any of them. They're all great.

Waiting for the Electrician or Someone Like Him. COLUMBIA CS-9518.

This was the first album, released in the mid-1960s. If you've never heard one, this is the place to start. Recording quality is above average and the subject matter is wide-ranging.

How Can You Be In Two Places at Once When You're Not Anywhere at All? COLUMBIA CS-9884.

If you just got the first you'll want this next.

Don't Crush That Dwarf, Hand Me the Pliers! COLUMBIA C-3012.

This is my least favorite. The recording quality could be better, and nobody agrees with me that it is an over-extended concept.

I Think We're All Bozos on This Bus. COLUMBIA C-30737.

Sheer genius! I just can't do this justice. This album should be handed out at Freshman Orientation at every college.

Proctor & Bergman, TV or Not TV. COLUMBIA KC-32199.

50% of the Theater, almost no loss of quality or imagination.

At this point, the albums started coming out faster than I could keep up with them.

There are at least two movies out, and the group has been doing live performances that, by all reports, I should kick myself for having missed. I have, and can recommend, The Tale of the Giant Rat of Sumatra (KC-32730) and Everything You Know Is Wrong (KC-32141), although I have no way of knowing how they compare with the other recent albums.

STEVE MILLER BAND: Number 5. CAPITOL SKAO-436.

Budget rack time. I got this a few months after Kent State for $1.50 at a food store, but the price seems to have gone up just a bit lately. I think this is Miller's idea of a newspaper. The Steve Miller Band has never had the following other American groups have had, like the Allman Brothers (if they still exist) or Jefferson Starship, yet they and their music seem very durable. This is my favorite Steve Miller album, but I wouldn't have mentioned that unless I had checked with other Miller freaks who suggested it as their favorite, too. Instead I would have recommended it because people who would like it have never heard of it. There is a fairly realistic whistled passage at the end of the Jackson Kent Blues that I enjoy getting to. Surfaces on my copy were nothing to cheer about, but the sound is natural.

OFF THE WALL

Reader Mark Hansen has suggested that we favor less-known groups and newer releases in these reviews. I tend to agree, although there are plenty of groups I'm familiar with that I'd like to hear about from people with an ear for quality as well as for artistry. Groups that readers have expressed interest in that I'd like to hear more about are Oregon, King Crimson, Traffic, Chick Corea, and Steelye Span. As usual, imported copies of most albums are better than the domestic ones, and I would like to know which ones you've had the most success with. And I'd appreciate hearing from people whose tastes differ widely from mine. Paul Simon does nothing for me, but his album Live Rhymin' might just be the most realistic recording I've heard. Ever. Comments?

KOOK-AID: Slinger. After the way Ultimate Frisbee took off, I thought I might as well recommend this slightly undersize but highly stable and rugged "limited edition" disc. For 50¢ it's a real bargain, and get this: it glows in the dark.

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RECORDS (From page 32)

welcome change from Wellington's Victory, though. Import enthusiasts should explore the Caprice catalog. The government-subsidized label has the noble objective of presenting Swedish artists and/or music on a non-profit basis.

KEYNOTES (From page 20)

ty they push every system component to or beyond the verge of overload, even at moderate average listening levels.

The best solution is, of course, to mate a cartridge and tone arm that will resonate (and whose response will fall off below) 15 Hz, but since that requirement may narrow your selection of cartridges down to a few whose overall sound you don't much care for, an alternate solution is to limit the subsonic response of the preamp. This can be done by a very simple circuit change in the SP-3 and later models thereof.

Locate the coupling capacitor between the first two stages of the phono preamp (V1 and V2). This capacitor, identified as C-3 on the schematic diagram, is a 0.1-mfd 400-volt unit. Move this from both channels and replace it with similar ones whose value is 0.01 mfd 400 volts. The job shouldn't take more than about 5 minutes, and can be done without removing the circuit board. Use a small, hot iron, and try to do as neat a job as the rest of the wiring in the preamp.

The result will be a sharp response attenuation below 15 Hz, but the response at and above 20 Hz will remain as it was.

Fair trade laws seem to be going the way of the woolly mammoth. The governors of New York, Connecticut and New Jersey have already signed bills repealing their states' former Fair-Trade laws, and Rep. Robert McClory (Rep.) of Illinois has introduced a bill to repeal fair trade. His bill has 20 sponsors plus a respectable amount of Executive Branch support, according to the trade press.

EDITOR'S ADDENDUM: Writing in the August '75 High Fidelity Trade News, Siegfried Susskind (president of EAD, the firm that owns Infinity and KLH, among others) proposed what some other manufacturers too must have seen as a way to circumvent the anti-Fair-Trade laws: Exclusive Franchising. His idea, in a nutshell, would be that franchises would be restricted to "no more than 300" dealers throughout the country, chosen so as to offer negligible regional competition for one another.

Implied but not stated in Mr. Susskind's proposal was the condition that franchised dealers might have to sell his products at the recommended prices to retain the franchise.

Some manufacturers have in fact been doing just this for some years, and it remains to be seen whether Fair Trade repeal can be interpreted as prohibiting the limited-franchise ploy. If the courts should so decide, it could have a profound effect on other industries, such as autos and appliances, which have used this form of price protection for years.

QUICKIES (From page 17)

CrO2 provision that we found the only disappointing aspect of the machine. Sony opted for playback compatibility and extra high-end head room, and equalized the normally-rising high end of CrO2 to provide flat playback with the standard irpn oxide replay curve. Unfortunately, not only does this cost about 6 dB of s/n ratio, it fails to conform to the international standard for CrO2 equalization, which means that chromium dioxide tapes made on other recorders won't play properly on the Sony. (Although you can get proper playback of the Sony's tapes by setting the Tape Selector on the other machine to Standard.)

If this minor problem doesn't bother you, the TC-161SD is one helluvva good cassette recorder for its $300 price.

(Manufacturer's Comment on Page 52.)

Infinity Monitor II Speaker

Very smooth, subtly soft high end, almost like an electrostatic, with very taut and deep (essentially flat to around 30 Hz) low end, but with a subtle but definite lower-middle-
range "aww" coloration. Excellent inner detail and stereo imaging, but only moderately good replication of front-to-back perspectives. Not very "alive"-sounding.

(Manufacturer's Comment on Page 41.)

The Zerostat

The first anti-static device we have encountered that really works, this looks like a white plastic pistol with a large metal trigger. You have a static-charged disc? Or a plastic turntable cover that keeps pulling the tone arm upwards? Just aim the Zerostat at it from a foot or so away, slowly squeeze and release the trigger, and that's it. Every trace of static vanishes.

The nice thing is, there's nothing radioactive in it. The "gimmick" is an immensely efficient piezoelectric element (Remember ceramic pickups?) that, when twisted by the trigger, emits around 15,000 volts of output, but at low enough power to be no more dangerous than the static charge you build up on a dry carpet in winter. The generated voltage appears at a small needle recessed in the "barrel" of the gun, and radiates outwards in a broad arc away from you.

It's not cheap at $29.95, but when the life of your discs can depend on how free of dust you can keep them, it's worth the money to any serious disc collector. Available from some dealers or from American Audioport, Inc., 909 University Ave., Columbia, Mo. 65201.

(No manufacturer's comment.)

Subjective Speaker Response Curves

Bear in mind that these are not the results of measurements, but reflect only the apparent response of the speakers in question when reproducing a representative variety of program sources and material. The vertical scales on these curves are all identical, and are adjusted so that a barely perceptible deviation of the curve from perfectly flat response corresponds to a barely perceptible audible deviation. Judgements were based on operation with the amplifier which made each speaker system perform at its best with its tweeter level control (if any) adjusted to provide what sounded like flattest over-all response with that power amp.
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Curves (From page 40)

*The SS-1A is, like other bi-polar radiators, very sensitive to room acoustics and placement. It is possible that, with further experimentation, we could have obtained an even flatter response than the one shown. It is also possible that over-all response as smooth as this may not be attainable at all in some rooms.
Manufacturers' Comments On Reports In This Issue

Russound QT-1

We are most appreciative of your very favorable report on the QT-1, particularly in view of your record for dissatisfaction, at least in part, with every other product you have reported on. We would like only to mention the fact that the QT-1 is normally supplied with 18 patch cords, which should be more than enough for the most complex lashups of multiple-tape-recorder arrays or quadrophonic systems. We should also add that the photograph of the QT-1 gives no indication of scale, and that the plugs and jacks used for the patching are what are known as Mini-Jax -- the same size as are used for the Mike inputs of most audiophile cassette recorders.

We should perhaps also mention the fact that Russound products have evolved from many years of practical experience in what Stereophile refers to as "serious" tape recording -- of local performing groups which often ask that copies be made either during or after the listening session. We have a number of products which facilitate equipment setup and, perhaps more important, knockdown, and which make tape duplicating less than a chore than it can be. For details, without any sales pitch, write to Russound/FMP, Inc., Foot of Canal, North Berwick, Me. 03906.

Infinity Monitor II

The version of the Monitor II that you tested has been superseded by a later one that is smoother through the middle range and thus free from the slight coloration you noticed in your samples. We are sending you a pair of the later ones for re-evaluation.

dbx Devices

Thank you for your thorough and most perceptive report on our expander/compressor devices. Your findings agree with ours except in one detail: We have not found, nor have buyers, that the 122 has a "hard" sound. We must admit, however, that some early samples of the unit had an amplifying stage that was not biased sufficiently close to its design center, and some of those did have a slightly hard edge to their sound. Since we shipped your units to you a number of months ago, it is possible that your 122 was one of the "off" units. We request that you return it to us and we will ship you a current-production sample which, we are confident, you will find to have as little effect on the sound as the 119 and 157 that you tested.

We, too, have observed what seems to be a correlation between the amount of gain in a solid-state amplifying device and its "solid-state" sound, but we have no explanation for it either. We should point out, though, that even when the 157 is producing "unity gain" over-all -- that is, in comparison with a straight wire bypassing it -- it is actually producing a substantial amount of both loss (in compression) and gain (in expansion).

REVIEWER'S ADDENDUM:

But since both the gain and the loss take place in non-linear amplifying stages of complementary characteristics, would not the distortion products produced be complementary and thus cancel one another? Dolby claims that this is what happens in their designs.

Dyna PAT-5 Preamp

If we've been instrumental in encouraging two revisions of an expensive competitor, maybe that is called "advancing the state of the art." So if you find that we're only Number 2, it isn't for lack of trying! The comparisons we made -- with numerous other preamps, incidentally -- were made after the audio circuits of the PAT-5 were completed, and then we froze what we found (at the time) to be Number 1, because we don't believe in constant and costly revisions at the customer's expense.

We question the use of the term "sonic obsolescence" in the matter of older Dyna designs like the PAS-3X or PAT-4. Both are still being made, be-
cause they are not obsolescent sonically. They may no longer be at the pinnacle of the art, as they once were, but they still deliver uncommonly fine sound for the price. We are the first to agree that the PAT-5 sounds better -- a statement Dynaco never before made about any superseding design.

To comment on the "prototype problems" you found, one of the purposes of field-testing prototypes is to elicit information on RF interference problems, and problems related to interconnection with ancillary equipment. Most of the time between Stereophile's first test, and release of the preamp in late 1974, was spent on RF-interference suppression (a buzzing hum is one manifestation of RFI), and on continued efforts to retain a 3-prong AC receptacle on the power amplifier. This was finally abandoned because UL would not list the preamp if one socket were 3-prong and the others 2-prong. There was a certainty of hum problems if all receptacles were 3-wire, as others have found.

It is the Stereophile's job to call out design goof and limitations, but we sincerely believe you are creating a tempest in a teapot over those "horrendous pulses." Granted, a few people do share your wish to use a master switch to control the entire system, and not everyone uses a Stereo 400 or other amplifier with a protective relay. And a couple of people have mentioned power failures. But almost every mention so far (and they have been few) was prompted by Stereophile's comments, not by a problem in use. This stipulation was in our very first announcements, and the question is not one of oversight or sidestepping, but rather the economic of our users. Are we being too value-conscious? We'd like to know.

The relay assembly kit (available in mid-October) is designated the RCT-5. If readers want to retrofit their PAT-5s (it will not be included in new units), and they are unable to obtain it from their dealer, it may be ordered directly from Dynaco. The cost is $34 postpaid, and a check or money order should accompany the request. Installation takes an hour or two, including the drilling of four small holes. The reason we are not including the relay assembly in every PAT-5 is because we abhor making everyone pay for something that only a few will need. We think those few will constitute about 1% of buyers, but if it's more, we might just recoup the development costs of the RCT-5 (which was considerably more involved than armchair designers would think).

With a bit of care, your speakers will not be damaged even if you do not equip your preamp with the relay, because the speaker switch on the PAT-5 can be turned off when switching power. And the other advantage of always-on are significant. Not only are the capacitors kept charged (an important consideration at these low voltages), but we have found that maximum performance in practically all makes of preamps is not obtained until they have been on for some time.

You can't please all of the people all of the time. We sure like the tone controls on the PAT-5 too, because we designed them for real use in quality systems, not for "effect." Would you believe, though, that enough people liked the PAT-4's tone controls that we were obliged to come up with instructions for modifying the PAT-5's tone controls so they behave more like the PAT-4's? Sometimes it's "people considerations" rather than "gross ineptitude" that prompt design considerations.

The low filter is almost identical to what another manufacturer calls "sub-sonic." That's stretching it a bit, but a really sharp, really low filter would be prohibitively expensive, and little appreciated.

Your comment regarding audible differences which defy measurement is noteworthy (and we do appreciate your pointing out the universality of this complaint), because a preamp is generally considered to be the single most readily-quantifiable component in terms of specifications. The experience of another magazine's reviewers is a case in point. We pre-checked, naturally, and made a note of the performance figures of the preamp we sent them for review. When they reported later that another PAT-5 built from a kit sounded better than the one we sent them, we thought something had become defective in it and recalled it for checking. It measured perfectly in every respect, yet its sound -- while

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(* with purchase).

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very good -- was not as good as most other samples we auditioned. We are still trying to track down what it is that is affecting the sound but is not being measured, and can assure you that when we do find what it is, the appropriate test will become part of our quality-control checkout. But you can't put a "golden ear" at the end of the production line; they vary, too.

REVIEWER'S ADDENDA:
Please do note: We did not say Dyna's older designs were obsolete; we used the word "obsolete," which means "in process of becoming obsolete." A fine distinction perhaps, but a distinction nonetheless.

"Calling out" design goofs is, we like to think, only one of Stereophile's functions. We have been known to say nice things about products, too. In fact, we think we said some pretty nice ones about the PAT-5.

Murphy's law states: "If anything can possibly go wrong, it will." There is no reason to assume that Dyna products are immune to Murphy's law, which is merely another way of saying that, as long as there is the potential for wiping out one's loudspeakers, it will eventually happen.

We are very pleased to see that Dyna is embarking on a project to track down the cause of the audible differences between apparently identical preamps, although our reaction is, more or less, "Lotsa luck!" A lot of other manufacturers have been investigating exactly the same phenomenon, some of them for a number of years, and they're still investigating. Success in such an endeavor would have to be counted a major breakthrough, for it might at last put preamp testing on the kind of purely objective basis that should be possible with any man-made device but has never been possible with hi-fi components.

IAD Dynamic Volume Expander

Quite naturally we are chagrined to read that the IAD DVE is "disqualified." Whatever we say will not change Mr. Holt's opinion. However, his findings are another matter. They omit several technical considerations for potential users of the unit.

The compelling reason for our slower decay time directly relates to distortion. As decay time is reduced, low-frequency distortion rises. If an expanded 16-Hz pedal note decays over a period of approximately 10 time constants (approximately 600 milliseconds), the measured distortion is 1% which is not acceptable. Thus, with the Model B3A's 100,000-Hz range at a distortion of .005%, the decay time is mandatory.

For clarification, the decay time of the B3A does not reach its maximum except when program information changes instantaneously from fortissimo to pianissimo -- a fairly rare situation. Typically, the program changes are over much smaller ranges, thus allowing much shorter decay times. Further amelioration of this action is occasioned by the fact that all downward changes in program information levels (for example, a drop of 43 dB from a loud to a soft passage) are directly fed to the power amplifier. This prohibits the "destruction of musical sense," and does keep noise at the same level in proportion to the program information. (May we suggest a Burwen de-noiser if noise in the program material is objectionable.)

Finally, we would have to remove the dbx unit from our own system because, in our opinion, its 1.2% distortion totally disqualifies it. But apparently Mr. Holt does not mind distortion.

REVIEWER'S ADDENDUM:
It should not be necessary to remind IAD that, since both the DVE and the dbx 119 effect some very substantial modifications in the program material fed through them, it can truthfully be said that both are distorting that material. It is thus a purely personal matter as to which of them produces the least offensive distortion of the musical material, and to our ears, the 119 -- at moderate expand settings -- is the one. All such signal-processing devices involve tradeoffs, and if 1.2% distortion is the price one must pay for the restoration of a passable semblance of the original dynamic range to compressed recordings, that is the user's choice. Remember too that we are speaking now of bass distortion which, however much the idea may repel the perfectionist in us, is nonethe-
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less far less audible than equivalent amounts of distortion in the mid- and, particularly, the high-frequency ranges. And in the final analysis, it is what we hear that counts.

Polk Model 9

We knew the Model 9 wasn't perfect, but we sure as heck didn't think it was all that bad. A lot of Model 9 buyers are living quite happily with them. Could they all be tin-eared?

Ampzilla

Thank you for the review of my product(s) which, while certainly not lengthy, is relatively accurate.

I do agree that the Dyna 400 and Ampzilla are "in the same league," but that is where the similarity ends. I designed the Stereo 400 four years ago, and can state that most of the circuitry is what can be described as "old school" -- not in the sense of outmoded, but in the sense that the design embodied old tried and proven aspects plus a few new ideas.

The design concept of Ampzilla is totally new, although other manufac-
turers are also starting to use the total push-pull (in to out) approach I developed. And I cannot agree that the sonic differences between the 400 and Ampzilla are as subtle as you state.

For example, your comments about the relative bass characteristics of the amplifiers sound like what I would have said a while ago, before I started hearing live music regularly again. I became instantly aware that amplifiers and speakers were moving in the direction of an unnatural, bigger-than-life impact having little relevance to the real thing. Their bass was becoming tighter and drier than live bass. Damping, in other words, can be over-done. It must strike an optimal balance, and I claim that Ampzilla is more accurate in maintaining proper control and balance in the low-frequency region.

With regard to depth and perspective in the mid range, I absolutely disagree. This love affair with tubes is most misguided. The Dual 76 is a fine amplifier (the 76A is not as good) as far as tubes go, but I think that matters should be set straight.

Because of their output transformer, tube amplifiers have inferior low-

and high-frequency definition when compared with virtually any transistorized amplifier. However, practically all solid-state amplifiers, past and present, have sounded harsh, especially in the high frequencies, making them less than ideal. Since tube amplifiers do not have the wide power bandwidths and frequency responses that solid-state units have, the tubes have generally been preferred because they were more listenable and smooth.

Since the response at the low and high ends is subdued in tube units, the mid range tends to be more apparent and to stand out, and I believe that this is where the myth regarding restricted mid range got started.* It is a fallacy, plain and simple. As a matter of fact, the control that a tube amplifier exerts on a dynamic loudspeaker is so loose that it is possible that severe coloration due to the combination might tend to make the sonic result falsely richer. Quite obviously, tube amplifiers are a poor choice for dynamic speakers. This is not however the case for electrostatics and/or the Magneplanars (although the Magnepans still require the kind of power only solid-state units can deliver now). Tubes will perform quite nicely under these circumstances as they are not presented with an adverse motor response characteristic, therefore they can maintain control. Virtually no solid-state amp can handle electrostatic tweeters with the exception of Ampzilla because the volt/amp load line is disastrous. Ampzilla and the SAE Mk III CM were designed specifically to deliver in excess of 200 V/A at high frequencies and thus need not suffer from the effects of limiters and other protection circuits.

Again it must be remembered that no tube amplifier in existence can produce the V/A velocities into an electrostatic tweeter, and for that reason, most transistor amps do get blamed for being excessively "hot"-sounding when driving ESLs. This inability to deliver high-frequency power to ESLs definitely makes tubes sound smoother

* Who said anything about restricted mid range? (JGH)
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(or duller, if you wish) through them.

Being a professional musician myself, I prefer accuracy, and to me, the best solid-state amplifiers are better capable of this than the best tubed models.

James Bongiorno
Great American Sound

REVIEWER'S ADDENDUM:

The tube-vs-transistor question, like all other matters of discrimination, is not negotiable. If one cannot hear the uniquely musical attributes of the best tube equipment, there is simply no point in discussing the matter. It is tantamount to arguing subtleties of color-film accuracy with someone who is color blind. And since Mr. Bongiorno is in the business of making solid-state amplifiers, it is not surprising that he should take such a patronizing attitude towards tube equipment.

A designer of Mr. Bongiorno's experience must know that the "musicality" of reproduced bass is a function, not just of low-frequency amplifier damping, but of the amount of damping designed into the speaker system, as well as its actual low-frequency response in the listening room. Practically any loudspeaker can be located in a room so that its low end tapers off, to produce what sounds very much like the excessive tautness of excessive damping. Conversely, it is usually possible to find speaker locations which excite standing waves in the room, producing the kind of overly rich, hangover-induced fatness that bespeaks inadequate damping. It is also, of course, possible to vary the amount of damping designed into a loudspeaker system so that it is optimally damped when fed by a relatively high source impedance (such as a tube amplifier) or by a very low source impedance (such as the Dyna Stereo 400). There is, consequently, no "correct" damping factor for an amplifier. There is only that which, in the opinion of the designer, is audibly correct for the loudspeakers he designed it for, under room-placement conditions typifying those the designer has encountered most often.

To explain the "depth and perspective" in the best tube amplifiers as a function of attenuated low and high-end response is patently nonsense. Tube amplifiers tend to underdamp many woofers, producing exaggerated rather than attenuated low end. And when driving tweeters that are known, via measurements, to have the most extended high-end response, only the better tubed amplifiers will produce that "Gee, no highs....but there's more than enough detail and sharpness" reaction that most audiophiles have when exposed, after a hiatus, to live music. All solid-state amplifiers, including both the Stereo 400 and Ampzilla, tend to produce from such tweeters the "Hey man, listen to that high end!" impression that distinguishes pseudo hi-fi from live music. And we do not limit this observation to electrostatic tweeters. The same seems to hold true with any kind of tweeter, which would seem to suggest that it is not a matter of V/A delivery. In fact, the outstanding characteristic of a good tube amplifier is that it can reproduce strings and woodwinds with the effortless softness that is observed in the live sound, yet can when required reproduce a very respectable "hard" transient from triangle, castanet or cymbals. That does not seem to suggest conditions of overload. We agree with Mr. Bongiorno, though, in that of the solid-state amp's we know of, Ampzilla does as nice a job as any of driving electrostatic tweeters. We just think tubes do better.

It is of course Mr. Bongiorno's privilege to consider us misguided in this. Certainly he is not alone in feeling that solid-state amplifiers are better reproducers of music than tubes. But we think it is significant that many designers of perfectionist-type solid-state amplifiers, in describing how fine their new products are, tell us that they sound as good as or better than the Audio Research ones. Most solid-state amps are in fact better than tubes at the low end on most speaker systems, but we are still waiting for the one that can equal a good tube amp's crystalline middle range or natural top.

It is also worth noting that, every time there is a quantum leap forward in loudspeaker design, the system tends to sound better with tubes and rougher with solid-state amplifiers.
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As far as we are concerned, the best attainable sound reproduction, in terms of sheer musical naturalness, still comes from tubed electronics feeding speakers that are good enough so as not to require inordinate amounts of high-end power or bass damping. The only reason we can think of for opting for transistors is when your speakers have neither the efficiency nor the refinement to be adequately driven by tubes, either in a monamped or biamped mode.

Just as a footnote to Mr. Bongiorno's parting shot, we would suggest that those of our readers who know professional classical musicians pause for a moment to consider what those musicians listen to records on. Our personal experience has been that professionals know the sound of live music so well that their mind can re-create the full sonority of an orchestra from a reproduction that merely suggests the original sound. They are, in fact, usually less critical of reproduced fi than a typical untrained listener. Mr. Bongiorno's professionalism does not of course disqualify him as a judge, but it is not necessarily a valid qualification either.

Audioanalyst A-100X Speaker

Are you sure you were listening to the A-100X? Your views have no correlation to our tests or any other reviews on our product.

REVIEWER'S ADDENDUM:

Sorry, there was no mistake as to what speaker we tested or what we heard. The sound was really pretty grisly. It could have been a particularly bad mismatching of rooms and loudspeakers, but those were the results we obtained under the same conditions used to test other systems reported in the magazine.

Denon Cartridges

The mid-range lushness of spheri-cal stylus is due to the fact that they tend to mix phase relationships at high frequencies. Instead of trac-ing the high-frequency modulations in detail, they tend to "gloss over" them, and the effect on the sound is similar to that obtained by bouncing...
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loudspeaker sound off the room walls. The "zizz" on string tone from the Shibata is not, I suspect, the fault of the pickup but of the discs. Most discs, it would appear, are equalized to provide the proper high end when reproduced with a spherical stylus, which is still the norm in most home hi-fi systems. The Shibata, like an elliptical, follows the treble modulations more faithfully and therefore reproduces the high-end tip-up on the discs as what it is: a tip-up.

It is our contention that the Shibata 103S is a more accurate reproducer of what is on the discs than is the Spherical, but for the benefit of those who prefer the spherical, we do have that version available too, at substantially lower cost than is being charged by some independent importers.

American Audioprint, Inc.

REVIEWER'S ADDENDUM:
So why should the spherical-tipped Decca Mark V have such outstanding detail and inner definition? No reflecting loudspeaker ever sounded like that.

Actually, we did not feel that the spherical sounded "richer," but rather somewhat more "alive," which is just the opposite. By comparison, the Shibata version was the one that we felt to be the "richer"-sounding. We cannot explain why, except to note that this is a difference we have observed between the spherical and elliptical versions of every cartridge to date.

Sony TC-161SD Cassette Recorder
The TC-161SD is now a discontinued model.

REVIEWER'S ADDENDUM:
That's a shame, for except for the Crolyn problem, it was one of the best cassette decks we knew of.

Tape Worms by the Can
Our preliminary tests on the Otari MX-5050 "Mini-Pro" tape deck led us off into what were apparently some little-trodden byways of audio and opened up a couple of cans of very nasty worms.

We'll go into more detail in the next issue, but for the nonce, here's what we turned up: First, it seems that not all supposedly-compatible tape machines -- that is, ones with identical track configuration, running speed, and measured playback frequency response from a standard tape -- are in fact compatible. That is, tapes made on one sound very different when played on the other. And second -- and this bothers us even more -- it would seem that there are, not one, but three "standard" playback-equalization curves for professional tape recorders. Three

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It begins to appear to us that, compared with the stringent standards that audiophiles demand of their playback equipment, the state of professional recording equipment is bordering on the chaotic. We can assure our readers that we'll follow up on both these "leads" (?) in the next issue. Does Angel Records cut their EMI discs using the same kind of recorders used by EMI to make Angel's masters? Have you been considering trading in your present tape recorder, with the expectation that all those tapes you made on it will play back properly on the new one? And you, Mr. Professional Recording Engineer, did you by any chance check to find out whether that tape you are discing for a client was made on a machine adjusted for the same NARTB "standard" that yours is adjusted for? Do you really give a damn anyway?

Hmmm?

Keynotes Headliner

Our thanks and a $25 check went out to Bill Valinotte of Philadelphia, Pa., whose design for a "Keynotes" headliner appealed to us most of all of the ones submitted to us.

We take this opportunity to thank also those readers who submitted headliner designs that weren't used. We appreciate the time and effort expended, and apologize because we couldn't thank everyone individually.

Audio Alternative

An odd title for a book, but then this is an unusual book. It is in fact the first book about high fidelity that carries the reader beyond the realm of mass hi-fi and into that rarefied atmosphere of perfectionist high fidelity that is the concern of Stereophile and its readers.

Since Stereophile's editor & publisher was technical consultant for the book (in the capacity of making suggestions, not all of which were followed), it is difficult for us to seem impartial enough about it to review it. Since, however, we were paid a lump sum for the job and stand to

manufacturers are turning out response-calibration tapes for professional use, all of them are different (by as much as 4 dB), and all three manufacturers insist that theirs is the only "right" curve.
make nothing from future sales of the book, we shall review it anyway, at least briefly.

First, let us say that, as the only book to date representing the audio perfectionist's point of view, this is the best book of its kind. It is sometimes dull, sometimes irrelevant, sometimes unintelligible, and there are a few points in the "Basics" section that are more confusing than enlightening. It is also shoddily edited, with many typos, some missing lines, and a multitude of syntactical monstrosities. But despite everything, this is still by far the best instant primer for the perfectionist shopper that money can buy. (Still the best for the serious hobbyist is John Crabe's "Hi-Fi In the Home," available from Blandford Press Ltd., 167 High Holborn, London WC1, England.)

The best-written chapter is the one on discount buying of components (even though we must admit that we disapprove of buying audio by price), while the most informative as well as the largest part of the book is that devoted to equipment reviews, most of which we agree with.

(This may be because many of them read as though they were abstracted from Stereophile reports.)

The book is huge -- 10½ by 14½ inches, or so-called picture-book size -- and that plus its soft cover, which prevents it from standing upright on a shelf (assuming you have a shelf that high to begin with), raises a question as to where to put the thing. The price is $7.95, the author was Mark Tobak, the publisher is Tobey Press, distribution is through Dell Books, and "Audio Alternative" is sold mainly in audio shops that carry the kinds of goodies that are endorsed by the book. That means you are not likely to find it in your local branch of that national-franchise audio chain.

The book deserves wide sales, but it had better sell fast, for the thing that makes it of such value to the buyer -- its equipment recommendations -- will be out of date almost before you can say "Dual 76A."

Trouble-Shooting Charts

Apart from the advertisements and an occasional record review, there is not usually much of interest to audio

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perfectionists in the mass-hi-fi press these days, but if you've let
your subscription to Stereo Review lapse for that reason, you have just
missed one of the most valuable features that magazine has published in
years: Six pages of system-trouble-shooting charts.

The charts show, step by step, the process of elimination by which a
problem -- virtually any problem, in fact -- can be isolated to a specific
component, and although this is not the first time such charts have been
published, it is by far the most de-
tailed and comprehensive effort to
date. We can argue with a couple of
their advisements, such as consider-
ing audio cables as a potential source
for "poor sound," but these charts are
nonetheless an invaluable addition to
any audiophile's data files, and if
you didn't get them, you should. If
you missed that June 1975 issue of
Stereo Review, you'll find the charts
reprinted in Ziff-Davis' 1976 "Stereo
Directory and Buying Guide," which
will be out in October '75.

Schilling Goes West

With this issue, we bid farewell
and send best wishes for success to
Mel Schilling, founder of Music &
Sound in Willow Grove, Pa., who has
vacated the sinus belt for sunnier
climes on the West Coast, where he
is opening Music & Sound of Cali-
ifornia. Mel was an early supporter of
Stereophile, and his store was the
first in this area to carry top-line
components. And he and, subsequently,
his partner Nelson Rose helped us out
on many occasions by supplying up-
to-the-minute prices, specs., comments
and, occasionally, components for our
equipment reports. Now both Mel and
Nel are Music & Sound, on opposite
Coasts. We wish them both success.

Both stores, by the way, have ads
in this issue.

The Disc-Cutter Project

Those of you who signed up as par-
ticipants in our disc-cutter-rating
project announced in the last issue
should be apprised that we have run
afoul of several snags. One was the
discovery that tapes made on one tape
recorder are not necessarily compati-
ble with another seemingly identical
recorder. The other is the unbeliev-
able difficulty we have had in ob-
taining even 4 minutes of high-powered
symphony-orchestra material played by
a reasonably good orchestra and miked
the way orchestras should be miked --
with a single pair of good condenser
mikes. We are still seeking such a
tape, and are once again putting out
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**PICK-UPS:** ULTIMO DV 38 20A, DENON DL 103S, SUPEX, SATIN, ORTOFON, DECCA, SHURE, GRACE AND B & O

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No Super-Fi

Speaking of the disc-cutter project, we have gotten the impression from some of your correspondence that you are expecting these discs to be some kind of state-of-the-art recording, like the Linc Mayorga Sheffield discs.

Be advised. They will not. Most of the material on the discs was recorded at live concerts, often under adverse circumstances, and all have at least a few sonic imperfections of various sorts, including (occasionally) what we consider to be excessive hum, hiss, etc in the background. The excerpts were chosen, not to illustrate how good a recording can be, but to provide specific sonic textures and materials which should reveal what the project is intended to show: What, if any, are the differences between disc-cutting systems, and which one is best. On the other hand, there will be some pretty high-powered stuff on there that will tax some of the best pickups and reproducing systems.

If that news has turned you off, don't ask us to take your name off the list. We can't do that. All you have to do is ignore the post card you will receive telling you the discs are ready and asking for your money for them.

There are, incidentally, still some openings for additional participants who may still wish to get in on the act after having read the foregoing.

And Now, "Listener's World."

Stereophile is proud to announce the birth of a sister publication, for "The Discriminating Listener."

Listener's World is dedicated to enhancing the enjoyment of all entertainments for the ear -- in the concert hall as well as on records, radio and TV. It is not, we emphasize, another hi-fi publication, although there will be a department in each issue for the listener seeking musically satisfying sound reproduction at a price that will leave something over for the purchase of records or concert tickets. Recordings will be covered extensively, but more from the standpoint of musical interest than technological virtuosity.

More details about Listener's World will be in our next issue.

Pulse Modulation

A combination of technical ignorance and typographical errata turned our brief explanation of Pulse Modulation in the last issue into a veritable shambles of obfuscatory drivet. Here is the straight poop:

Pulse modulation is a way of representing analog information, such as an audio signal, in quasidigital form -- thus converting continuous but varying waveforms into a series of discrete pulses. The analog information is conveyed by varying the height (Pulse-Amplitude Modulation, or PAM), duration (Pulse-Duration Modulation or PDM), repetition rate (Pulse-Position Modulation or PPM) or density (Pulse-Code Modulation or PCM) of the pulses.

The diagrams above should make all of the foregoing crystal-clear.

Infinity's switching amplifier, by the way, uses PDM.

Another Record -- Maybe

Although our Disc-Cutting project is temporarily stalled, we are considering issuing another recording of a different kind: One whose musical value outweighs its technical interest. This would be a two-record set of an entire work -- Arthur Honnegger's Nicholas de Flue -- an ora-
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torio for chorus, orchestra and narrator, telling of the Swiss peasant who rallied his countrymen to preserve Switzerland's independence from involvement with an unwanted military alliance with a neighboring state.

The recording, made by JGH, was done at the American premiere performance of the work, and while the playing has the occasional rough edges of any concert performance, it is a fine rendition of a beautiful work, and considerably better recorded (we admit modestly) than the only other existing recording—available only in Switzerland. We would have liked somewhat better recording, but mike placements (2 only, plus narrator pickup) were compromised to an extent by an unusual disposition of the performers in the large church where the performance was held. There was no dynamic-range compression on the original tape, and the discs will have as much as it is possible to put on them without making things impossible in terms either of trackability or background noise. It may still give most cartridges a pretty good workout.

Since there were a number of union musicians involved, this will be a costly recording for a shoestring operation like Stereophile to produce, so we must be assured of a reasonable minimum number of sales before we start the wheels (or cutting turntables) moving. For this reason, we are asking for advance payment, the amount of which will be $14 postpaid. (For two discs, including a full French and English libretto and some additional notes about how the recording was made, for the edification of other live-performance recordists.)

The money received will be held in escrow until we have enough to proceed with production of the album. If not enough is forthcoming, we will scrap the project and return your money.

Jottings
(Observations, comments and news about this, that, and some other things we have heard or have heard about from various sources.)

- Our reaction to the production models of the Ortofon 445 speaker (erroneously called the "455" in our "Inter-

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im Report") was not as favorable as it was to the preproduction prototypes we auditioned. Bass range and detail are astonishingly good but the over-all sound has struck us as overly bright, and there seems to be a fairly pronounced peak up at around 11 kHz. Tests are however still underway.

- New preamps are springing up like toadstools these days, including a number of modifications (not factory-authorized) of existing ones like the Dyna PAT-5 and the Audio Research SP-3A-1. We have several on hand, and will report on them next issue.
- Koss is apparently still playing the field-modification game with their full-range electrostatic speaker. Some dealers have been getting samples, but reactions differ widely. Our advice: Don't buy a pair yet.
- Several new and promising pickups are on the horizon, but none seem likely to become The Ultimate. We'll see what transpires. The Stax capacitor one is still the best performer, but is horribly expensive ($700) and needs frequent (although simple) oscillator adjustment.
- We just took delivery of an interesting-looking little turntable from France called the ERA. Cost is under $200 and it comes sans tone arm.
- RTR has come out with a cyclindrical electrostatic speaker covering down to around 200 Hz, which is directly driven by its own amplifier. No step-up transformer. This we gotta hear!
- We are hearing persistent reports of mid-range panel failures in Infinity SS-1A speakers. Infinity claims that the incidence of panel failures is negligible, and suggests that the reports are bad-mouthing by hostile dealers. Two panels (out of 12) in our SS-1A failed, but ours was not the finalized production version of the system, and preproduction stuff is notoriously undependable. The panels are, incidentally, a snap to replace; no soldering is necessary.
- ARC did it again! The Dual 76A is clearly better than the Dual 76 on all counts, and comparable to the Paoli but not in the same ways. The Paoli bass is tighter, the highs a bit crisper, but the new D-76A is more liquid and has better inner definition and depth perspective. The sonic improvement gained by biamping Paolis is greater than the improvement when D-76As are biamped. IM perhaps?
- Evidently prodded by the success of the Paoli 60M, Audio Research has announced a "Dual 52" with spartan styling and a price tag about equal to the cost of two Paolis. Thus showing that two can play...
- Ampex Tape's announcement that they are discontinuing the distribution of pre-recorded tapes does not mean they

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**Tuners:** Pioneer, Quad and Sequerra.

**Turntables:** Technics, Linn Sondek and Thorens.

**Tonearms:** SME, JM Modified Rabco, Grace 707 and Vestigal.

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will no longer make them; they now require that the record companies do their own distributing. To date, London has agreed to this, but Philips is still undecided. Barclay-Crocker (See "Audio Mart") may fill the breach.

• VD appears to be on the increase. Two new Japanese arms have appeared with viscous damping, from Grace and a firm called Audio Craft, and rumor has it that a leading kit manufacturer is working on an inexpensive model.

• We were disappointed with the sound of Infinity's Class-D switching amplifier driving the FMI J-Modulars, but it is extraordinarily good driving the mid or high end of Infinity's SS-IA. The final decision on that amp must wait.

• We have been hearing unanimous raves about the Stax Class-A transistor amp, and have been promised one for testing. But 800 watts of power consumption under no-signal conditions?!!

• The Audio Research Dual 76A draws about 1200 watts of power during the instant of turnon -- enough to chew up a preamp's AC power switch pretty rapidly, particularly when biamping or, god forbid!, triamping. ARC is working on a cascade switcher to sequence the D-76 turnons to reduce the strain on everything.

• Besides the usual equipment reports and (once again) departments, the next issue will include a detailed look at (or, rather, listen to) a selection of sonically no-holds-barred discs, mostly from small record companies or serious amateur tape recordists.

Excuses, Excuses...

Our undercover agents have been bringing us some rather irksome news lately, about a rumor that needs squelching.

We have known for some time that many of our readers are stealing from us, by reading borrowed copies of the magazine rather than paying their own way. Now we are learning that one reason for this is that many of them think Stereophile is published as an ego-trip hobby by a nut (JGH) with a source of independent wealth.

For the benefit of those of you who have been salving your conscience with that one, let us set you straight.

It ain't true! The Stereophile is the sole source of income for the Holt family (including two offspring), and every time you elect to read a borrowed copy of the magazine rather than take out your own subscription, you force one of our kids to go a week or so longer in his (or her) old, worn-out potato sack, and force us to add more soy-bean extender to our dog-food-burgers.

We aren't really on the thin edge of poverty, but when we receive (as we often do) letters from non-subscribers asking which $2000 speakers to buy "because they don't want to waste their money on a wrong choice," we get pretty burned up! So, all you freeloaders out there, consider what your sources of audio information would be if we did get disgusted enough to throw in the sponge. And do the appropriate thing.

GAS Attack

We were, as were many other people, rather taken aback by some comments that appeared in our "competition" attacking the business ethics of a manufacturer whose track record did not appear to be all that bad. The manufacturer -- GAS's James Bongiorno -- replied with a letter to the magazine, and also endeavored to buy ad space in Stereophile to rebut the attack. We declined to get involved, as the place for that rebuttal is in the magazine where the provocation appeared. We did however agree to publish Mr. Bongiorno's reply if the other magazine elects not to, for we feel that he deserves the right to a hearing.

Audio Mart

All ads submitted for "Audio Mart" must be accompanied by a remittance calculated on the basis of 10¢ a word for private insertions or 20¢ a word for commercial insertions. Hyphenated words count as two. WE CANNOT BILL for "Audio Mart" ads. Ads which are to run in a series of issues must ALL be paid for in advance; we will refund the balance if cancelled prior to term.

FOR SALE

SAK Mk 12 speakers; McIntosh MPI-4 audio oscilloscope; Phase Linear 700 amplifier; SAE Mk 7 equalizer; Dyna PAD-3s tube preamp; 2 Dyna Mk 4 tube amps (Mono). Harry J. Batts, 111, 2104 Lakeside Dr., Lexington, Ky. 40502.

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But I've always had this unfulfilled sunshine fantasy for Southern California and, when the chance came to do there what I've been doing here, I had to take it.
What amazes me is how many audiophiles are following along. Being slightly fanatical about their systems, they've come to depend on my advice. Hell, what's 3,000 miles between purists, anyway? Exactly one day by air freight, three by land and no time at all by telephone.
Look, no matter where you live, I can promise you this: an abiding commitment to the outer reaches of state-of-the-art and to those few who understand and appreciate it.
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approx. 50 hours on it. New price, complete, over $5000. Sell for $3,600. One pair Scepoa CMC-4 cardioid condenser mikes, 8 months old, $600. One pair E-V RE-25 omni dynamic mikes, used once, $175. Gately SM-6A mixer, $250. Mark Plourd, 11760 SW 98th, Tigard, Ore. 97223. (503) 639-7787.

Desperation sale: Infinity Servo-Static I speaker system, still in repair after one year at manufacturer. Reasonable offer. All inquiries answered. Bill Goldsmith, 720 Ashton Ave., Salt Lake City, Ut. 84106.

Dyna PAT-4 preamp, $85; Rabco ST-4 turntable, $115. David Cummings, Ridge Rd., Cazenovia, N.Y. 13035.

Sony TC-155 playback deck, cover, exc. condition, $65. Pfeffer, 147-04 84th Ave., Jamaica, N.Y. 11435.

Decca Mark V pickup, new, checked by Paoli; new stylus for Shure V-15-II. Any reasonable offer for each. Hyde, 301 Springdale, Winteraville, Ohio. 43952

Southwest Technical Products "Universal Tiger" poweramp. $100. Ace Audio ZDP preamp, $50. Prices negotiable or trade for Stereo 70. Gilbert Wildin, Grinnell College, Grinnell, Iowa., 50112.

Heatkhlt AA-2010 4-channel amplifier, mint condition, $250 or best offer. Pair of EBS MAT-1 speakers, best offer over $400 for both. Ray Thomas, Apt. 8, 124 East Lincoln Hwy, Coatesville, Pa. 19320 (215) 383-3216.

1938 Scott Receiver (See January '75 Audio) with schematic, $175. Scott $130 tubed stereo preamplifier, $130. Acrosound 60-watt tubed amplifier, $60. Shure V-15-II cartridge, $25. (919) 934-6860 after 5 pm (Eastern zone).

Citation 12 deluxe amplifier, $225; list $340. Michael Cheluk, 7719 Evergreen Dr., Goleta, Ca. 93017. (805) 968-0907 (MIC).

Koss ESP-9e, $95; Phase Linear 400, $395; Infinity Monitors, $695 pair; TEAC 4070E, $400; Dynaco AF-5, $210. All excellent condition, several under warranty, no hidden defects. Robert Lehman, 17 Lueder St., Wilkes-Barre, Pa. 18702. (717) 825-3916.

Audio Research Magnepalan Tympani I speakers, serial number 041856, $900. Darold Rupp, Box Z-1, Stewart, Mn. 55385.

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Ampzilla, built from kit, no problems, $425. Dahquist, 6 months old, $625 a pair. Eric Church, (301) 838-7198.

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MARANTI SLT-12U turntable system, perfect, original packaging, $225. Wegee, Box 2009, Huntington, N.Y., 11748. (203) 929-5255.

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Th ores TD-125AH Mk II & Stanton 681EE, $325; Dynaco Quadaster, $17; Teac 2305S, $425; tape transports, $35 a pair. R. Pearson, 1380 NW 132nd St., Miami, Fla. 33168. (305) 681-0802.

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