

IN BOTH EARS

BY MARTIN CLIFFORD

In hi-fi, a speaker yields the moment of truth. Unfortunately, the speaker is still the weakest link in the system, though it doesn't bear the entire responsibility. What is heard depends not only on the speaker, but on the size of the listening room, its shape, acoustics, speaker positioning, on the physical condition of the ears, musical training, age and sex.

This means that the sound from speakers is subjective, tempered by a collection of variables. It just isn't possible to plunk a pair of speakers anywhere and expect superior results. Luck plays a very small part in speaker positioning.

The first step is to separate the speakers until the stereo left/right sound is satisfying. This can be done by playing a familiar stereo record while trying the speakers in different locations along the floor or on a bookshelf. The sound should have a distinct left/right characteristic and should not seem to come from a single speaker, an imaginary unit between the two.

Once the stereo balance is satisfying, the speakers can be placed at various distances above the floor, if possible, with the help of

speaker stands. This changes the response in the bass, midrange or treble. Generally, speakers near floor level will be "boomier." Also, treble tones come cleanest when aimed at ear level. Tilting the speakers left/right or up/down is also helpful. This doesn't mean both will be placed identically. One may be higher or more at an angle. The final criterion is that the sound should be pleasing.

Speakers and power amps have a symbiotic relationship. If a speaker requires a minimum input of 10 watts and has a maximum rating of 60, then the amplifier can be somewhere between these two extremes.

While that's the safest way, it isn't the best. An amp rated at 100 watts won't always use this amount of power. A transient or momentary peak can reach 100 watts with minimum distortion and, since this power demand is short lived, can be safely handled by a 30-watt speaker. Most hi-fi's use amps with power ratings in excess of speaker ratings.

Most in-home hi-fi speakers are 8 ohms, the impedance of the voice coil. Speakers should be connected to the 8-ohm taps on the amp, even if it has 4 and 16 ohm taps. Matching amps to speaker impedance supplies the greatest possible transfer of sound energy. Most auto speakers are made with a 4-ohm impedance.

The efficiency of a speaker is the ratio of sound output vs. audio power input. If an amp drives a speaker with 10 watts and it delivers 1 watt of sound pressure, that is 1/10 or 10 per cent efficiency, rather high. A low efficiency speaker would be one rated at about 0.5 to 2 per cent. The higher the efficiency the smaller the possible power requirement of the amp. High efficiency or low is a matter of personal pref-

erence. Both types can give good results.

Use #18 gauge wire, or even slightly thicker, for connecting speakers to amps. The smaller the gauge number, the thicker the wire. Speakers should not be connected to amps with the power turned on. When records are played it is best to keep the volume turned down until the sound comes on and then advance the volume control.

Turning up the bass tone control and the loudness and volume controls simultaneously may be asking for trouble. With these advanced the bass speaker is being asked to work hard and it may not be able to do so, or at least not for very long.

Speaker fuse ratings are coarse, unreliable, and don't work fast enough. They are better than no fuses, but not by much. It is better to rely on good operating practice, for this will help speakers from going prematurely to their electronic Valhalla.

Speaker grilles are not only decorative but protective. It's easy to damage speaker cones so don't remove grilles unless it's necessary. Grilles are made to be acoustically transparent, so sound is not improved with the grilles off.

Good hi-fi specs are important, but refer only to new equipment. As a system gets older, rumble, wow, flutter, high frequency oscillation and hum may become evident. These produce sounds that make speakers work more, so amps and turntables should be checked periodically. Some audio dealers do this without charge.

BY BYRON LAURSEN

If music be the food of love, how can we improve the flavor? Santa Monicans Wayne Umbertis and George Carlsen have something that seems to turn the trick, a between-amp-and-speakers, sub-\$200 add-on they call Dynamic Compliance Fidelity Enhancement System.

"Somebody described it," boasts Umbertis, "as looking through a window with the screen removed." Indeed, handed a switch box that cut the Dynamic Compliance feature in and out of two sets of speakers, one of them cheap and the other high-cost, I heard a sense-pleasing improved fullness of sound over both sets, with the greatest enhancement effect noticeable on the cheap pair. It was like the difference between hearing a great acoustic guitar in one's own lap and a fair one over a p.a. system. Frequencies that were harsh, irritating and tinny without the device became round and luxurious when Dynamic Compliance was switched on.

The device's essential components are a power booster, which allows the main amp to operate at lower levels, hence farther from distortion, and circuitry that purportedly refines the communication between amplifier and speakers.

Dynamic Compliance, Inc. plans the same strategy that made the Dolby Noise Reduction System profitable for its inventor: they'll sell direct to consumers via mail order, but the future rides on licensing agreements from established stereo equipment manufacturers.

Already, Concord Electronics has released two Dynamic Compliance amplifiers for car stereo, with a brochure full of impressive claims about slewing rate, intermodulation distortion and amplitude linearity. By me, a thoroughly non-technical type with an oversized appetite for music, no spec sheet could make so dramatic an impression as did the switch box that clarified everything the speakers had to deliver.

fact:
this small
record
collection
represents a
\$1,000
investment

It's true—the largest investment in almost any hi-fi system is frequently the cost of the records played on it... and it is equally true that a badly worn phono stylus tip may ruin a valuable (or irreplaceable) record in a single playing!

With the rising cost of new phonograph records—and the difficulty in replacing treasured, older favorites—it's the worst kind of false economy to risk damaging them with a worn stylus.

**Check your stylus (needle)
at least once a year**

Always insist on a Genuine Shure replacement stylus. Substitutes will not restore the Shure cartridge to its original performance standards.



Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204, In Canada: A. C. Simmonds & Sons Limited
Outside the U.S. or Canada, write to Shure Brothers Inc.,
Attn: Dept. J6 for information on your local Shure distributor.
Manufacturers of high fidelity components, microphones, sound systems and related circuitry.



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UNIVERSITY OF TEXAS
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Fantasia Records & Tapes, Arlington
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Audio Works, Chapel Hill
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