Sounds Like? An Audio Glossary

J. Gordon Holt, July, 1993

Subjective audio is the evaluation of reproduced sound quality by ear. It is based on the novel idea that, since audio equipment is made to be listened to, what it sounds like is more important than how it measures. This was a natural outgrowth of the 1950s high-fidelity "revolution," which spawned the notion that a component, and an audio system as a whole, should reproduce what is fed into it, without adding anything to it or subtracting anything from it.

Traditional measurements of such things as harmonic distortion, frequency response, and power output can reveal many things a product is doing imperfectly, but there have never been any generally accepted guidelines for equating the measurements with the way they affect the reproduced sound. And there was strong evidence that many of the things people were hearing were not being measured at all.

Subjective reviewing simply skirts the question of how objective test results relate to what we hear, endeavoring to *describe* what the reproducing system *sounds like*.

But what *should* it sound like? The pat answer, of course, is that it should sound like "the real thing," but it's a bit more complicated than that. If the system itself is accurate, it will reproduce what is on the recording. And if the recording itself isn't an accurate representation of the original sound, an accurate sound won't sound *realistic*. But what does the recording sound like? That's hard to tell, because you can't judge the fidelity of a recording without playing it, and you can't judge the fidelity of the reproducing system without listening to it---usually by playing a recording through it. Since each is used to judge the other, it is difficult to tell much about either, except whether their combination sounds "real." But it *can* be done.

Even after more than 116 years of technological advancement (footnote 1), today's almost-perfect sound reproduction still cannot duplicate the sound of "the real thing" well enough to fool someone who has learned to listen analytically---a trained listener. But the goal of literal realism, or "accuracy," remains the standard against which a subjective reviewer evaluates any audio product design.

The casual audiophile hears reproduced sound as a whole, and judges its quality according to whether it sounds "good." Many reviewers never reach that stage of perception because---convinced by their measurements that all competing products sound "essentially the same"---they never make the effort to listen critically to reproduced sound. The reason a subjective reviewer hears more than the "objective" reviewer is not that his auditory equipment is superior. It's because he has accepted the premise that identical measurements do *not* necessarily ensure identical sound, and has *trained* himself to hear the differences when they exist.

The experienced listener does not just hear the totality of reproduced sound. He hears *into* it, observing how the component or system handles a variety of sonic attributes which make up the whole. Instead of simply "all the highs and all the lows," he may hear a coloration that his experience has shown to indicate a treble peak. Or he may hear a lengthening of normally brief bass notes which he has learned to equate with a low-frequency resonance or a lack of woofer damping. Of course, both these problems would be revealed by measurements, but equating their measured severity with their adverse effects on the sound is another matter. To do that, we need words to attach to these effects. Those words are what we call subjective terminology.

The language of subjectivity has been around since before Edison. Musicians have long been familiar with terms like "mellow," "strident," "rich," and "euphonic," but the advent of *re*produced music introduced new kinds of sonic qualities for which new descriptive terms were needed. The 1953 *Radiotron Designer's Handbook*---for its time, the "bible" of electronics design---listed more than 70 terms, most of which are still in use today.

Stereophile magazine, launched in 1962, was the first to review audio products on the basis of their sound rather than their measurements. *Stereophile* and other like-minded magazines have expanded subjectivity's working 70-word vocabulary to over 300 terms, all of which are listed and defined in this series of articles.

Most subjective-audio terms that are not drawn from everyday usage (such as "strident") fall into three categories: 1) Onomatopoeia---words that sound like what they describe; 2) Imagery---words that evoke a mental image; and 3) Sensories---words that relate things we hear to more-familiar things we see or touch. For example, the term "boomy" is onomatopoeic, because a bass peak sounds like the word "boom." The term "airy" elicits an image of expansive openness, like a large, high-ceilinged room with lots of big windows, to describe treble extension that seemingly has no limit. And the sensorial term "gritty" will have immediate meaning to anyone who has ever chewed lettuce with sand in it.

Some terms listed here are not descriptive at all, but designate certain things that are of concern only to audiophiles who listen carefully. Examples are resolution and soundstaging, which are two of the sonic characteristics used for judging system performance. Other terms---descriptive and otherwise---relate exclusively to reproduction from vinyl LPs, which are still favored over Compact Discs by many audio perfectionists.

Different subjective terms often have the same meaning, and some have more than one meaning. Don't be put off by this. Subjective terminology can never be as precise as the language of physics. But imprecise or not, it's still a much more meaningful way of describing reproduced sound than just saying, "It sounds fine."

Now that this glossary is available, there's no longer any excuse for an audio reviewer saying, "I can hear a difference, but there's no way of describing it." Now, there *is* a way.

I am indebted to Old Colony Books, of Peterborough, New Hampshire, for permission to excerpt extensively from my book, *The Audio Glossary* (footnote 2).

Footnote 1: Thomas Edison's patent for the phonograph was dated 1877.

Footnote 2: The author's complete *Audio Glossary*, containing definitions of almost 2000 audio and audio-related terms, is available from Old Colony Books, P.O. Box 24, Peterborough, NH 03458. Single copy prices: $9.95 paperback or $17.95 hardcover, plus $1.75 S&H. Check or VISA/MC.

The Glossary: A

absolute phase, absolute polarity Refers to the preservation of the initial acoustic waveform all the way through the recording and reproducing system so that a compression that reaches the original microphone will be reproduced in the listener's system as a compression reaching his or her ears. Some listeners appear to be more sensitive to this being correct than others, often referring to the inverted state as "muffled."

accuracy The degree to which the output signal from a component or system is perceived as replicating the sonic qualities of its input signal. An accurate device reproduces what is on the recording, which may or may not be an accurate representation of the original sound.

acoustical space 1) A large performing or recording hall. 2) All the spatial and reverberant characteristics of the performing hall or location in which a recording was made.

acuity 1) The sensitivity of the ears to very soft sounds. 2) The acquired ability of an audiophile to hear and to assess the subtle qualitative attributes of reproduced sound.

aggressive Reproduced sound that is excessively forward and bright.

"ah" (rhymes with "rah") A vowel coloration caused by a frequency-response peak centered around 1000Hz.

airy Pertaining to treble which sounds light, delicate, open, and seemingly unrestricted in upper extension. A quality of reproducing systems having very smooth and very extended HF response.

aliveness A quality of sound reproduction which gives an impression that the performers are present, in person, in the listening room.

ambiance (pronounced "ambee-onts") The feeling or mood evoked by an environment.

ambience (pronounced "ambee-ints") The aurally perceived impression of an acoustical space, such as the performing hall in which a recording was made.

analytical Very detailed, almost to the point of excess.

articulation 1) Clarity and intelligibility, usually of voice reproduction. 2) The reproduction of inner detail in complex sounds, which makes it easy to follow an individual musical voice among many.

attack 1) The buildup of sound when an instrument is bowed, blown, struck, or plucked. 2) The ability of a system to reproduce the attack transients in musical sound. Poor attack makes a system sound slow.

attack transient The initial energy pulse of a percussive sound, such as from a piano string, triangle, or drum head.

audibility The measure of the severity of a sonic imperfection. The scale of audibility, from least audible to most audible, is: inaudible, subtle, slight, moderate, obvious, conspicuous, and Arrggh!!

auronihilist (pronounced "auro-nigh-illist") A person who believes that all components that measure the same, sound the same. A meter man.

autohype Suggestive self-deception; hearing something that isn't there, because you expect it to be. A rich source of audio mythology.

"aw" (rhymes with "paw") A vowel coloration caused by a frequency-response peak centered around 450Hz. An "aw" coloration tends to emphasize and glamorize the sound of large brass instruments (trombone, tuba).

B

balance 1) The subjective relationship between the relative loudness of the upper and lower halves of the audio spectrum; "tonal balance." 2) The relative loudness of the instruments in a performing group. 3) Equality of signal level between the left and right stereo channels, which centers the soundstage and allows mono program material to image at the center. Also called channel balance.

ballsy Describes a system which is stentorian, punchy, and visceral.

banger A very loud LP surface-noise pop.

bass The range of frequencies below 160Hz, characterized by low pitch.

beyond-the-speakers imaging The placement of phantom images or spatial (stage

boundary) information beyond the positional limits of the loudspeakers.

billowing, billowy Excessively reverberant.

binaural Literally hearing with "two ears," refers to a recording/playback system which presents the listener's ears with the acoustic waveforms they would have received at the original event. Only currently achievable with a "dummy-head" microphone and playback via headphones.

bloated 1) When describing a phantom image: excessively wide. 2) When describing sound in general: overly rich, warm, and reverberant.

bloom A quality of expansive richness and warmth, like the live body sound of a cello.

body A quality of roundness and robustness in reproduced sound. "Gutsiness."

body sound Of a musical instrument: the characteristic sound of the material of which the instrument is made, due to resonances of that material. The wooden quality of a viola, the "signature" by which a brass flute is distinguishable from a wooden or platinum one.

boomy Characterized by pronounced exaggeration of the midbass and, often, dominance of a narrow range of bass frequencies. ("One-note bass.")

boxy 1) Characterized by an "oh" vowel coloration, as when speaking with one's head inside a box. 2) Used to describe the upper-bass/lower-midrange sound of a loudspeaker with excessive cabinet-wall resonances.

breakup The sound of severe analog-disc mistracking.

breathing From a dynamic noise-reduction system: audible changes in the level of background hiss in accordance with changes in signal volume. See "pumping."

bright, brilliant The most often misused terms in audio, these describe the degree to which reproduced sound has a hard, crisp edge to it. Brightness relates to the energy content in the 4kHz-8kHz band. It is ***not*** related to output in the extreme-high-frequency range. All live sound has brightness; it is a problem only when it is excessive.

bunching 1) In double-mono repro~duction, the imaging of all sounds from a small area between the loudspeakers. Tight (narrow) bunching in A+B mode is essential for good imaging specificity in stereo. 2) In stereo reproduction, excessive center fill with inadequate spread. Compare with stereo spread.

buzz A low-frequency sound having a spiky or fuzzy character.

bypass test Directly comparing the output signal from a device with the input signal being fed to it, by putting the device into and then out of the signal path and observing the difference.

C

center fill Correct image placement between the loudspeakers of sound sources which were originally located at or near center-stage. See "localization," "stereo spread."

center stage That part of the soundstage that is midway between the loudspeakers.

chalky Describes a texturing of sound that is finer than grainy but coarser than dry. See "texture."

characteristic One of the basic constituents of reproduced sound, which contributes to its perceived quality. Frequency response, loudness, extension, soundstaging, and resolution are sonic characteristics.

chesty A pronounced thickness or heaviness from reproduced male voice, due to excessive energy in the upper bass or lower midrange.

chocolatey Like "syrupy," but darker and more full-bodied.

circularity The paradox of subjectivity: "You can't judge a recording without reproducing it, and you can't judge a reproducer without listening to a recording."

clean Free from audible distortion.

click A small, sharp impulse that sounds like the word "click."

clinical Sound that is pristinely clean but wholly uninvolving.

closed-in Lacking in openness, delicacy, air, and fine detail. A closed-in sound is usually caused by HF rolloff above 10kHz. Compare with "open," "airy."

coarse A large-grained texturing of reproduced sound; very gritty. The continuum of reproduced sound seems to be comprised of large particles. See "texture."

cocktail-party effect The auditory system's controllable ability to separate-out, on the basis of direction alone, one sound source from many coming from different directions. It allows you to follow one voice among the others at a noisy cocktail party.

cognitive dissonance A conflict between observations, as when a sound has the timbre of a close listening seat but the perspective of a distant one.

coherent 1) Pertaining to a multi-way loudspeaker's sound: seamless from top to bottom; showing no audible evidence of a crossover or of different driver colorations in different frequency ranges. 2) Pertaining to the soundstage: Phantom imaging that reproduces within the stereo stage the original lateral positions of the performers. See "bunching," "hole-in-the-middle."

cold The same as "cool," only more so. Having somewhat excessive upper-range output and weak lower-range output.

coloration An audible "signature" with which a reproducing system imbues all signals passing through it.

comb filtering A hollow coloration that, once recognized, is unmistakable. Caused by a regularly spaced series of frequency-response peaks and dips, most often due to interference between two identical signals spaced in time. If that time difference is continually changed, the comb-filter peaks and dips move accordingly, giving rise to the familiar "phasing," "flanging," or "jet plane" effect used in modern rock music.

congested Smeared, confused, muddy, and flat. Totally devoid of transparency.

consonant Agreeable to the ear; pleasant-sounding. Compare "dissonant."

conspicuous Very audible. See "audibility."

continuity 1) Of the soundstage: the reproduction of the original lateral positions of the stereo images. See "bunching," "hole-in-the-middle," "stereo spread." 2) Of a multi-way loudspeaker: uniformity of coloration from the operating range of one driver to that of the other(s).

control The extent to which a loudspeaker sounds as if it is "tracking" the signal being fed to it. The sound is tight, detailed, and focused. See "damping."

cool Moderately deficient in body and warmth, due to progressive attenuation of frequencies below about 150Hz.

crackle Intermittent medium-sized clicks. The usual background noise from much-played vinyl discs.

crisp In reproduced sound: sharply focused and detailed, sometimes excessively so because of a peak in the mid-treble region.

cupped-hands A coloration reminiscent of someone speaking through cupped hands or, if extreme, a megaphone.

D

damping The amount of control an amplifier seems to impose on a woofer. Underdamping causes loose, heavy bass; overdamping yields very tight but lean bass.

dark A warm, mellow, excessively rich quality in reproduced sound. The audible effect of a frequency response which is clockwise-tilted across the entire range, so that output diminishes with increasing frequency. Compare "light."

dead Dull and lifeless.

decay The reverberant fadeout of a musical sound after it has ceased. Compare "attack."

deep bass Frequencies below 40Hz.

definition (also resolution) That quality of sound reproduction which enables the listener to distinguish between, and follow the melodic lines of, the individual voices or instruments comprising a large performing group. See "focus."

delicacy The reproduction of very subtle, very faint details of musical sound, such as the fingertip-friction sounds produced when a guitar or a harp is played. See "low-level detail."

depth The illusion of acoustical distance receding behind the loudspeaker plane, giving the impression of listening ***through*** the loudspeakers into the original performing space, rather than ***to*** them. See "layering," "transparency." Compare "flat."

detail The subtlest, most delicate parts of the original sound, which are usually the first things lost by imperfect components. See "low-level detail." Compare "haze," "smearing," "veiling."

diffuse Reproduction which is severely deficient in detail and imaging specificity; confused, muddled.

dip A narrow area of depression within an otherwise flat frequency-response curve. Compare "dished," "humped."

dirty Sound reproduction which is fuzzy, cruddy, or spiky.

direct sound A sound reaching the ears in a straight line from its source. The direct sounds are always the first sounds heard. The "critical distance" from a soundsource is when the spl of the direct sound is equal to that of the reverberant field. See "far field," "near field," "precedence effect." Compare "reflected sound," "reverberation."

discontinuity A change of timbre or coloration due to the signal's transition, in a multi-way speaker system, from one driver to another having dissimilar coloration.

dished, dished-down Describes a frequency response that is depressed through the entire middle range. The sound has too much bass and treble, exaggerated depth, and a laid-back, lifeless quality. Compare "forward."

dissonant Unpleasant to the ear; ugly-sounding. Dissonance is an imperfection only when the music is not supposed to sound dissonant. Compare "consonant."

distortion 1) Any unintentional or undesirable change in an audio signal. 2) An overlay of spurious roughness, fuzziness, harshness, or stridency in reproduced sound.

double (or dual) mono Reproduction of a monophonic signal through both channels/speakers of a stereo system, as when a preamplifier's mode switch is set to A+B (L+R). Compare "single mono."

dramatic Describing a perceived difference between components: Very noticeable, unmistakable. A term misused by audio reviewers to demonstrate how incredibly

sensitive they are to barely audible differences. See "audibility."

dry 1) Describing the texture of reproduced sound: very fine-grained, chalky. 2) Describing an acoustical space: deficient in reverberation or having a very short reverberation time. 3) Describing bass quality: lean, overdamped.

dull Lifeless, muffled, veiled. Same as "soft," only more so. The audible effect of HF rolloff setting in at around 5kHz.

dynamic Giving an impression of wide dynamic range; punchy. This is related to system speed as well as to volume contrast.

dynamic range 1) Pertaining to a signal: the ratio between the loudest and the quietest passages. 2) Pertaining to a component: the ratio between its no-signal noise and the loudest peak it will pass without distortion.

E

ease Pertains to reproduction which sounds effortless, free from strain.

echo In an acoustical space: the repetition of a sound due to reflection of the original sound from a room boundary. See "hand-clap test," "fluttery," "plastery," "slap."

echoey, echoic Pertaining to an acoustical space having excessive reverberation. Can also (rarely) be characteristic of a loudspeaker with excessive mid-frequency mechanical resonances.

"ee" (rhymes with "we") A vowel coloration caused by a frequency-response peak centered around 3.5kHz.

effortless Unstrained; showing no signs of audible stress during loud passages. Compare "strained."

"eh" (as in "bed") A vowel coloration caused by a frequency-response peak centered around 2kHz.

element One of the constituent parts of a sonic characteristic. Bass, midrange, and treble are elements of frequency response. Depth and breadth are elements of soundstaging.

error of commission Signal degradation due to the addition of sounds that were not present in the original signal. Distortion and coloration are examples of errors of commission.

error of omission Signal degradation due to the loss of information that was present in the original signal. Smearing and treble loss are examples of errors of omission.

etched Very crisp and sharply outlined, focused to an almost excessive degree.

euphonic Pleasing to the ear. In audio, "euphonic" has a connotation of exaggerated richness rather than literal accuracy.

extension The usable limits of a component's frequency range.

extreme highs The range of audible frequencies above 10kHz.

F

far field Pertains to that range of listening distances in which the predominant sounds reaching the ears are reflections from room boundaries.

fast Giving an impression of extremely rapid reaction time, which allows a reproducing system to "keep up with" the signal fed to it. (A "fast woofer" would seem to be an oxymoron, but this usage refers to a woofer tuning that does not boom, make the music sound "slow," obscure musical phrasing, or lead to "one-note bass.") Similar to "taut," but referring to the entire audio-frequency range instead of just the bass.

fat The sonic effect of a moderate exaggeration of the mid- and upper-bass ranges. Excessively "warm."

flanging See "comb filtering."

flat 1) Having a subjectively uniform frequency response, free from humps and dips. 2) Deficient in or lacking in soundstage depth, resulting in the impression that all reproduced sound sources are the same distance from the listener.

floating A positive attribute that pertains to soundstaging in which the phantom images seem to exist independently of the loudspeaker positions, giving the impression that the speakers are absent. See "beyond-the-speakers imaging," "depth," "layering." Compare "flat," "vagueness," "wander."

fluttery Pertains to a repeated echo recurring at a rate of about 10 repetitions per second, common to small, bare-walled acoustical spaces. See "hand-clap test." Compare "plastery," "slap."

focus The quality of being clearly defined, with sharply outlined phantom images. Focus has also been described as the enhanced ability to hear the brief moments of silence between the musical impulses in reproduced sound.

forward, forwardness A quality of reproduction which seems to place sound sources closer than they were recorded. Usually the result of a humped midrange, plus a narrow horizontal dispersion pattern from the loudspeaker. See "Row-A sound." Compare "laid-back."

frequency range A range of frequencies stated without level limits: ***ie***, "The upper bass covers the frequency range 80-160Hz."

frequency (or amplitude) response 1) A range of frequencies stated with level limits: ***ie***, "The woofer's response was 20-160Hz ±3dB." 2) The uniformity with which a system or individual component sounds as if it reproduces the range of audible frequencies. Equal input levels at all frequencies should be reproduced by a system with subjectively equal output.

fuzz, fuzziness A coarse but soft-edged texturing of reproduced sound. Like "hash," but with muffled-sounding spikes.

G

gestalt response The evocation of a complete memory recognition by an incomplete set of sensory cues. A gestalt response to the few things an audio system does outstandingly well can make imperfect reproduction seem more realistic than it actually is.

glare An unpleasant quality of hardness or brightness, due to excessive low- or mid-treble energy.

glassy Very bright.

golden A euphonic coloration characterized by roundness, richness, sweetness, and liquidity.

grainy A moderate texturing of reproduced sound. The sonic equivalent of grain in a photograph. Coarser than dry but finer than gritty.

gritty A harsh, coarse-grained texturing of reproduced sound. The continuum of energy seems to be composed of discrete, sharp-edged particles.

grunge Sonic dirt, crud, roughness. Muffled grittiness.

gutsy Ballsy.

gutty Rosinous.

H

hangover A tendency for reproduced sounds to last longer than they should. Most noticeable at low frequencies, where it obscures detail.

hand-clap test The use of hand claps to assess the reverberant properties of a room. See "fluttery," "plastery," "slap."

hard Tending toward steeliness, but not quite shrill. Often the result of a moderate frequency-response hump centered around 6kHz, sometimes also caused by small amounts of distortion.

harsh Gratingly unpleasant to the ear.

hash A very coarse texturing of the sound, characterized by a sharp-edged, spiky roughness. Caused by severe distortion with strong transient content, as from a grossly mistracking phono cartridge.

haze, haziness A moderate smearing of detail and focus. The audible equivalent of viewing something through a gauzy veil or a dirty window.

heavy Excessively bassy.

heft Pertains to bass which has weight, solidity, and visceral power.

height The usually inadvertent production of vertical directional cues, which make some instruments sound as if they are above or below the other performers. See "soundstaging."

HF High frequency(ies).

high-end Pertains a) to sound that closely approaches the real thing, b) to audio equipment whose performance is near the top of the quality scale, and often the price scale.

high-end audio The pursuit of and business of realistic sound reproduction.

high fidelity 1) A kind of sound-reproducing system whose realism of reproduction is judged to be better than average. Stereo reproduction can be high-fidelity or otherwise. 2) The pursuit of perfection in sound reproduction, as a hobby or a religion.

high-frequency range 1) The audio range above 1300Hz. 2) The usable upper limit of that range. See "extension."

hole-in-the-middle In stereo reproduction, weak or vague representation of center images. Can result from out-of-phase loudspeakers or excessively widely spaced stereo microphones. See "out-of-phase."

Holt's Laws 1) "The better the recording, the worse the performance, and vice versa." 2) "The shriller the advertisement, the worse the product." 3) "Every component is imperfect, and every imperfection is audible."

honky Pertaining to a severe "aw" coloration.

hooty 1) Pertaining to a severe "ooo" coloration. 2) Resonant colorations may cause some lower-midrange notes to jump forward or "hoot" at the listener.

horn sound An "aw" coloration characteristic of many loudspeakers that have a horn-loaded midrange.

hot Very tipped-up high frequencies.

hum A continuous 60Hz or 120Hz noise, caused by leakage of the household AC supply or its second harmonic into the signal path.

hump A broad frequency-response peak.

humped Sound that is forward, soft, and lean. The apparent listening distance is up-front and immediate, yet the overall sound is dull and thin. Caused by a broad midrange rise with rolled-off lower and upper ranges. Compare "dished."

I

"ih" (as in "bit") A vowel coloration caused by a frequency-response peak centered around 3.5kHz.

image See "phantom image."

imagery Descriptive terminology intended to convey an impression or mental image of a subjective observation. Imagery is usually employed to describe qualities in reproduced sound in terms of more familiar sensory responses like vision, taste, and touch.

imaging The measure of a system's ability to float stable and specific phantom images, reproducing the original sizes and locations of the instruments across the soundstage. See "stereo imaging."

impact A quality of concussive force, as from a deep, strong bass attack, which produces a brief sensation of visceral pressure.

impulse An abrupt, extremely brief burst of signal energy; a transient.

impulse noise Transient noise, such as surface-noise ticks and pops.

inaudible A sonic imperfection which is either too subtle to be consciously perceived or is actually nonexistent. Compare "subliminal."

infrasonic Below the range of audible frequencies. Although inaudible, the infrasonic range from 15-20Hz can be felt if strongly reproduced. Compare "subsonic."

inner detail The sonic subtleties within a complex program signal, reproducible only by a system having high resolution. See "focus."

intolerable Unarguably and unforgivably unlistenable. See "audibility."

involvement The degree to which a reproduction draws the listener in to the musical performance and evokes an emotional response to it.

J

judgment A listener's assessment of how well his perception of a sonic element measures

up to his concept of perfection. The basic choices are "good," "not good," or "undecided."

L

laid-back Recessed, distant-sounding, having exaggerated depth, usually because of a dished midrange. See "Row-M sound." Compare "forward."

layering The reproduction of depth and receding distance, which audibly places the rows of performers one behind the other.

lean Very slightly bass-shy. The effect of a very slight bass rolloff below around 500Hz. Not quite "cool."

LF Low frequency(ies).

lifeless Sound that is dull, unfocused, unconvincing, and uninvolving.

light Lean and tipped-up. The audible effect of a frequency response which is tilted counterclockwise. Compare "dark."

liquid Textureless sound.

listening distance The distance from the listener to the loudspeakers. See "critical distance," "far field," "near field."

listening fatigue A psychoacoustic phenomenon from prolonged listening to sound whose distortion content is too low to be audible as such but is high enough to be perceived subliminally. The physical and psychological discomfort can induce headaches and nervous tension.

live 1) Describes an acoustical space having a great deal of reverberation. 2) Pertains to the sound of actual instruments or voices in performance, as opposed to the sound of their reproduction.

localization In stereo reproduction, the placement of phantom images in specific lateral positions across the soundstage. Also, the specificity of those images.

loose Pertains to bass which is ill-defined and poorly controlled. Woolly.

low bass The range from 20-40Hz.

lower highs The range of frequencies from 1.3-2.6kHz.

lower middles, lower midrange The range of frequencies from 160-320Hz.

low frequency Any frequency lower than 160Hz.

low-level detail The subtlest elements of musical sound, which include the delicate details of instrumental sounds and the final tail of reverberation decay. See "delicacy."

lumpy Reproduced sound characterized by a number of audible response discontinuities through the range below about 1kHz. Certain frequency bands seem to predominate, while others sound weak.

lush Rich-sounding and sumptuous to the point of wretched excess.

M

meter man A person who believes that measurements tell all you need to know about a component's performance. An auronihilist. Compare "mystic," "subjectivist."

MF Middle frequency(ies), the all-important midrange.

midbass The range of frequencies from 40-80Hz.

middle highs The range of frequencies from 2.6-5kHz.

middles, midrange The range of frequencies from 160-1300Hz.

moderate A qualifier which describes a sonic imperfection which is clearly audible through any decent system, but not annoyingly so. See "audibility."

modulation noise A hiss or other extraneous noise which "rides on" the main signal, varying in loudness according to the strength of that signal.

monaural Literally "hearing with one ear." Often used incorrectly in place of monophonic (as in Glenn D. White's otherwise excellent ***Audio Dictionary***, 1991, second edition, University of Washington Press.---JA). Compare "binaural."

monophonic, mono A system or recording with one channel or speaker. See "monaural," "single mono," "dual mono."

motorboating Low-frequency oscillation of an active device, producing a continuous, rapid "bupupup" sound, like a one-cylinder engine.

muddy Ill-defined, congested.

muffled Very dull-sounding; having no apparent high frequencies at all. The result of HF rolloff above about 2kHz.

musical, musicality A personal judgment as to the degree to which reproduced sound resembles live music. Real musical sound is both accurate and euphonic, consonant and dissonant.

muted Dark, lifeless, closed-in.

mystic An audiophile who attributes all currently unmeasurable sonic differences to forces beyond human understanding.

N

nasal Reproduced sound having the quality of a person speaking with his/her nose blocked. Like the vowel "eh" coloration. In a loudspeaker, often due to a measured peak in the upper midrange followed by a complementary dip.

naturalness Realism.

near field Pertains to that range of listening distances in which the sounds reaching the ears are predominantly direct. See "far field," "critical distance."

neutral Free from coloration.

noise Any spurious background sounds, usually of a random or indeterminate pitch: hiss, crackles, ticks, pops, whooshes.

Noticeable In aural perception, any sonic quality which is clearly audible to most people.

O

objectivist A meter man. Compare "subjectivist."

observation The perceived attribute of a sonic element, on which a personal judgment about its quality is based. Observations are described by subjective terms such as "smooth," "woolly," or "spacious."

obvious You'd have to be deaf not to hear it. See "audibility."

"oh" (as in "toe") A vowel coloration caused by a broad frequency-response peak centered around 250Hz.

one-note bass The exaggeration of a single bass note, due to a sharp LF peak, normally due to an underdamped woofer but also caused by room resonances.

"oo" (as in "gloom") A vowel coloration caused by a broad frequency-response peak centered around 120Hz.

opaque Lacking detail and transparency.

open Exhibiting qualities of delicacy, air, and fine detail. Giving an impression of having no upper-frequency limit.

out-of-phase In a two-channel system, one channel being in opposite polarity to the second, most commonly due to having one speaker hooked up with the red (positive) lead to the red (positive) terminal, the other with the red lead to the black (negative terminal). As well as a "phasey" sound, the result will be a reduction in low frequencies. See

"phasey." Not to be confused with an inversion of Absolute Phase or Polarity.

overblown Bloated. Excessively fat and rich.

overdamped Pertaining to the audible effects of excessive woofer damping.

P

pace The apparent tempo of a musical performance, which can be different from its actual beats-per-minute tempo. Pace is affected by phrasing in performance and speed in reproduction.

palpable Describes reproduction that is so realistic you feel you could reach out and touch the instruments or singers.

perceptible At or above the threshold of audibility of a trained listener.

perspective The soundstage depth information that is conveyed by layering.

phantom image The re-creation by a stereo system of an apparent sound source at a location other than that of either loudspeaker.

phasey A quality of reproduced sound which creates a sensation of pressure in the ears, unrelated to the intensity of the sound. Phasiness is experienced by many people when listening to two loudspeakers which are connected out of phase with each other.

phasing See "comb filtering."

picket-fencing (Also called vertical-venetian-blind effect.) A tendency for stereo channel balance to vacillate from left to right as the listener moves laterally with respect to the loudspeakers.

pinched 1) Very cold, with a "nyeah" coloration. 2) Pertaining to soundstaging: Laterally compressed and lacking in spaciousness.

pinpoint imaging Stereo imaging that is precise, stable, and focused.

pitch resolution The clarity with which the pitch of (generally) bass notes is perceived. Poor pitch resolution makes all notes sound similar; good pitch resolution gives an impression that you "can almost count the cycles."

plastery A hard-sounding reverberation having an "a" (as in "cat") coloration, characteristic of bare, plaster-walled rooms. Compare "fluttery," "slap."

plummy (British) Fat, rich, lush-sounding.

polite Laid-back.

pop A midrange pulse characterized by a very sharp attack followed by a short "o" or "aw" vowel sound. Usually the result of a severe LP blemish.

power range The frequency range about 200-500Hz that affects the reproduction of the power instruments of an orchestra---the brass instruments.

precedence effect The tendency for the ears to identify the source of a sound as being in the direction from which it is first heard. See "direct sound."

presence A quality of realism and aliveness.

presence range The lower-treble part of the audio spectrum, approximately 1-3kHz, which contributes to presence in reproduced sound.

pristine Very clean-sounding, very transparent.

pumping 1) The exaggeration of abrupt signal-amplitude changes, often due to the malfunctioning of a companding (compressing/expanding) noise-reduction system. 2) Audible fluctuations of background noise in the playback phase of compansion. 3) Large, spurious subsonic motions of a woofer cone, usually due to analog-disc warps or marginal LF stability in the power amplifier.

Q

qualifier An adjective which the listener attaches to an observed sonic imperfection (such as "peaky" or "muddy") in order to convey a sense of its magnitude. "Subtle" and "conspicuous" are qualifying adjectives. See "audibility."

quality The degree to which the reproduction of sound is judged to approach the goal of perfection.

quick See "fast."

R

reaction A counterforce imparted to a speaker enclosure in response to the air resistance to the motion of a moving diaphragm or cone. On a thick carpet, a reacting enclosure will rock slightly back and forth, impairing LF quality and overall detail. See "spike."

realism A subjective assessment of the degree to which the sound from an audio system approaches that of live music. This has meaning only when the recording purports to reproduce an acoustical event taking place in a real acoustical space. See "quality."

recessed Very laid-back.

reflected sound A sound which reaches the ears after being reflected from at least one boundary surface. See "critical distance," "far field," "near field," "precedence effect."

Compare "direct sound."

resolution See "definition."

reticent Moderately laid-back. Describes the sound of a system whose frequency response is dished-down through the midrange. The opposite of forward.

revealing Pertaining to a loudspeaker or a system as a whole: Outstandingly detailed and focused; analytical. Compare "pristine."

reverberation A diminishing series of echoes spaced sufficiently closely in time that they merge into a smooth decay.

rhythm See "timing."

ringing The audible effect of a resonance: coloration, smear, shrillness, or boominess.

rolloff (also rollout) A frequency response which falls gradually above or below a certain frequency limit. By comparison, the term cutoff (often abbreviated to "cut," as in "bass cut") implies an abrupt loss of level above or below the frequency limit.

rosinous (or resinous) Describes the "zizzy" quality of bowed strings, particularly of cellos or violas.

rotated The sound of a frequency response that is linear but tilted. See "tilt."

rough A quality of moderate grittiness, often caused by LP mistracking.

rounding, rounding-off The shearing-off of sharp attack transients, due to poor transient response or restricted HF range. See "slow," "speed."

row-A sound Sound which is up-front, forward.

row-M sound Sound which is laid-back, distant.

rumble An extraneous low-frequency noise, often of indeterminate pitch, caused by physical vibration of a turntable or of the room in which a recording was made.

S

scrape flutter Roughness and veiling of analog tape sound due to discontinuous movement of the tape across the head ("violining").

screechy The ultimate stridency, akin to chalk on a blackboard or a razor blade being scraped across a windowpane.

seamless Having no perceptible discontinuities throughout the audio range.

seismic Describes bass reproduction which creates an impression that the floor is shaking.

severe Very annoyingly audible. See "audibility."

sheen A rich-sounding overlay of velvety-smooth airiness or guttiness. A quality of outstanding HF smoothness and ease.

shift See "soundstage shift."

shrill Strident, steely.

sibilance A coloration that resembles or exaggerates the vocal s-sound.

silky Pertains to treble performance that is velvety-smooth, delicate, and open.

silvery Sound that is slightly hard or steely, but clean.

single-mono Sound reproduction through a single loudspeaker system. Compare "dual mono."

size See "width."

sizzly Emphasis of the frequency range above about 8kHz, which adds sibilance to all sounds, particularly those of cymbals and vocal esses (sibilants).

slam British for impact.

slap In an acoustical space, a repeated echo recurring at a rate of about 3 per second, common to moderate-sized, bare-walled acoustical spaces. See "hand-clap test." Compare "fluttery," "plastery."

slight Easily audible on a good system but not necessarily on a lesser one. See "audibility."

slow Sound reproduction which gives the impression that the system is lagging behind the electrical signals being fed to it. See "fast," "speed," "tracking."

sluggish Very slow.

smearing Severe lack of detail and focus.

smooth Sound reproduction having no irritating qualities; free from HF peaks, easy and relaxing to listen to. Effortless. Not necessarily a positive system attribute if accompanied by a slow, uninvolving character.

snap A quality of sound reproduction giving an impression of great speed and detail.

sock A quality of sound reproduction giving a sensation of concussive impact.

soft Very closed-in, markedly deficient at the extreme high end.

sodden, soggy Describes bass that is loose and ill-defined. Woolly.

solid-state sound That combination of sonic attributes common to most solid-state amplifying devices: deep, tight bass, a slightly withdrawn brightness range, and crisply detailed highs.

sonic detail See "detail."

soundstaging, soundstage presentation The accuracy with which a reproducing system conveys audible information about the size, shape, and acoustical characteristics of the original recording space and the placement of the performers within it.

soundstage shift Apparent lateral movement of the soundstage when listening from either side of the sweet spot.

spacious Presenting a broad panorama of ambience, which may be wider than the distance between the loudspeakers.

sparse Less cold than "pinched" but more than "thin."

spatiality The quality of spaciousness.

specific, specificity The degree to which a phantom image exhibits a definite and unambiguous lateral position, without wander or excessive width.

speed The apparent rapidity with which a reproducing system responds to steep wavefronts and overall musical pace. See "fast," "slow."

spike 1) The "tick" sound of a pulse. 2) A sharp-tipped, conical supporting foot which allows the weight of a loudspeaker to be passed through carpeting to rest firmly on the underlying floor. Used to minimize speaker-enclosure reaction.

spiky Pertains to a coarse texturing of sound characterized by the presence of many rapidly recurring sharp clicks. Like the sound of tearing cloth, only crisper.

spitty An edgy "ts" coloration which exaggerates musical overtones and sibilants as well as LP surface noise. Usually the result of a sharp response peak in the upper treble range.

spread See "stereo spread."

state-of-the-art Pertains to equipment whose performance is as good as the technology allows. The best sound equipment money can buy.

steely Shrill. Like "hard," but more so.

stentorian A quality of great power and authority from a loudspeaker; like the voice of God. Loud and attention-getting.

stereo imaging The production of stable, specific phantom images of correct localization and width. See "soundstaging," "vagueness," "wander."

Stereophile 1) The original magazine of subjective reviewing. 2) An audiophile who

owns a stereo system.

stereophonic A two-channel recording or reproducing system. Compare "binaural," "monophonic." See "dual mono," "single mono."

stereo spread The apparent width of the soundstage and the placement of phantom images within it. Generally, a group of instruments or voices should uniformly occupy the space between the loudspeakers. Compare "beyond-the-speakers imaging," "bunching," "hole-in-the-middle."

stereo stage The area between and behind the loudspeakers, from which most phantom images are heard.

sterile Pristinely clean but uninvolving.

strained Showing signs of audible distress during loud passages, as though the system is verging on overload. Compare "ease," "effortless."

strident Unpleasantly shrill, piercing.

sub-bass Infrasonic bass.

subjectivist A person who has found that measurements don't tell the whole story about reproduced sound. Compare "mystic," "meter man," "objectivist."

subliminal Too faint or too subtle to be consciously perceived. Compare "inaudible." See "listening fatigue."

subsonic Slower than the speed of sound through air. Often used incorrectly to mean infrasonic.

subtle Barely perceptible on a very good system. See "audibility."

suckout A deep, narrow frequency-response dip.

supersonic Faster than the speed of sound through air. Sometimes used incorrectly to mean ultrasonic.

sweet Having a smooth, softly delicate high end.

sweet spot That listening seat from which the best soundstage presentation is heard. Usually a center seat equidistant from the loudspeakers.

syrupy Excessively sweet and rich, like maple syrup.

T

tail The reverberant decay of a sound in an acoustical space.

taut In bass reproduction, under tight control of the electrical signal; detailed and free from "hangover."

tempo The actual number of beats per minute in a musical performance. Compare "pace."

texture, texturing A perceptible pattern or structure in reproduced sound, even if random in nature. Texturing gives the impression that the energy continuum of the sound is composed of discrete particles, like the grain of a photograph.

thick Describes sodden or heavy bass.

thin Very deficient in bass. The result of severe attenuation of the range below 500Hz.

tick A high-pitched pulse characterized by a very sharp attack followed by a short "i" vowel sound. The most common background noise from analog discs.

tight 1) Bass reproduction that is well controlled, free from hangover, not slow. 2) Stereo imaging that is specific, stable, and of the correct width. 3) Describes a closely bunched image in A+B double-mono mode that occupies a very narrow space between the loudspeakers.

tilt 1) To aim the axis of a loudspeaker upward or downward. 2) Across-the-board rotation of an otherwise flat frequency response, so that the device's output increases or decreases at a uniform rate with increasing frequency. A linear frequency-response curve that is not horizontal.

timbre The recognizable characteristic sound "signature" of a musical instrument, by which it is possible to tell an oboe, for example, from a flute when both are sounding the same note.

timing The apparent instrumental ensemble (synchronism) of a performance, which is affected by system speed. See "articulation," "rhythm," "pace."

tipped-up Having a rising high-frequency response.

tizzy A "zz" or "ff" coloration of the sound of cymbals and vocal sibilants, caused by a rising frequency response above 10kHz. Similar to "wiry," but at a higher frequency.

tonality In music, the quality of an instrument's tone, often related to the key in which the music is written. In audio, mistakenly used in place of "tonal quality."

tonal quality The accuracy (correctness) with which reproduced sound replicates the timbres of the original instruments. Compare "tonality."

top The high treble, the range of audio frequencies above about 8kHz.

toppish Tipped-up. Slightly "tizzy" or "zippy."

tracking The degree to which a component responds to the dictates of the audio signal, without lag or overshoot.

transient See "attack transient."

transistor sound, transistory See "solid-state sound."

transparency, transparent 1) A quality of sound reproduction that gives the impression of listening ***through*** the system to the original sounds, rather than to a pair of loudspeakers. 2) Freedom from veiling, texturing, or any other quality which tends to obscure the signal. A quality of crystalline clarity.

treacly British for syrupy.

treble The frequency range above 1.3kHz.

tubby Having an exaggerated deep-bass range.

tube sound, tubey That combination of audible qualities which typifies components that use tubes for amplification: Richness and warmth, an excess of midbass, a deficiency of deep bass, outstanding rendition of depth, forward and bright, with a softly sweet high end.

turgid Thick.

tweak 1) To fine-tune a system or component to the ***n***th degree in pursuit of perfection. 2) A person who constantly does this in an ultimately vain effort to achieve absolute perfection.

U

ultrasonic Beyond the upper-frequency limit of human hearing. Compare "supersonic."

uncolored Free from audible colorations.

unctuous Overripe, super-rich, pleas~antly blah.

underdamped Pertains to the audible effects of inadequate woofer damping. See "damping."

uninvolving Ho-hum sound. Reproduction which evokes boredom and indifference.

upper bass The range of frequencies from 80-160Hz.

upper highs, upper treble The range of frequencies from 10-20kHz.

upper middles, upper midrange The range of frequencies from 650-1300Hz.

usable response The frequency limits between which a device sounds as if it is essentially linear, regardless of how it measures.

V

vague, vagueness Having poor specificity, confused.

veiled, veiling Pertaining to a deficiency of detail and focus, due to moderate amounts of distortion, treble-range restriction, or attack rounding.

velvet fog (as in "listening through a...") Describes a galloping case of haze, wherein virtually all detail and focus are absent.

vertical-venetian-blind effect See "picket-fencing."

violining See "scrape flutter."

visceral Producing a bodily sensation of pressure or concussion.

vowel coloration A form of midrange or low-treble coloration which impresses upon all program material a tonal "flavor" re~sembling a vowel in speech.

W

wander Side-to-side vacillation of the apparent position of a stereo image as the instrument plays different notes. Poor imaging stability.

warm The same as dark, but less tilted. A certain amount of warmth is a normal part of musical sound.

weight 1) The feeling of solidity and foundation contributed to music by extended, natural bass reproduction. 2) The emphasis assigned to a subjective term by a qualifier.

width The apparent lateral spread of a stereo image. If appropriately miked when recorded, a reproduced instrument should sound no wider or narrower than it would have sounded originally. See "stereo spread."

wiry Having an edgy or distorted high end, similar to the "tish" of brushed cymbals, but coloring all sounds reproduced by the system.

withdrawn Very laid-back.

woolly Pertains to loose, ill-defined bass.

Z

zippy A slight top-octave emphasis. See "toppy."

The Reverse Glossary
The discussion which follows assumes that the listener is familiar with the sound of live music as performed in a real acoustical space. Without that familiarity, there can be no basis for judging the quality of the reproduction of that sound.

In order to describe reproduced sound informatively, it is necessary to listen individually to the sonic bits and pieces that comprise the entire fabric of the sound, and to make qualitative judgments about them. That fabric is made up of a number of sonic characteristics, each of which is judged according to its elements and assigned a qualifier.

Characteristics are the basic constituents of reproduced sound, which contribute to its perceived quality. Frequency response, loudness, extension, soundstaging, and resolution are sonic characteristics.

Elements are the constituent parts of a sonic characteristic, to which you must pay individual attention when listening analytically. Bass, midrange, and treble are elements of frequency response. Depth and breadth are elements of soundstaging.

Judgments are subjective assessments of how well the perceptions of various sonic elements measure up to the listener's concept of perfection. The basic choices are "good," "not good," or "undecided."

Observations are the perceived attributes of sonic elements, on which a listener bases his judgments about their quality. Observations are described by subjective terms such as "smooth," "woolly," or "spacious."

Qualifiers are adjectives which the listener attaches to observed sonic flaws (such as "peaky" or "muddy"), in order to convey a feeling for their severity. "Subtle" and "conspicuous" are qualifying adjectives.

The Reverse Glossary lists sonic characteristics in alphabetical order, followed by the elements which comprise each characteristic, followed by the value judgments (Good or Not Good) about each element. Not Good is generally expanded into sub-categories such as Excess or Deficiency. Finally, the subjective terms which describe why you arrived at those judgments are listed.

To use the listings, look up the performance characteristic (*eg*, Frequency Response) and element (*eg*, Bass), select the appropriate observation (*eg*, Smoothness), decide whether the smoothness you hear is Good or Not Good, and choose a term that seems to describe what you are basing that decision on.

Check it in the Glossary to see if, in fact, that's the term you have in mind, then check the Audibility listings in the Glossary or the Reverse Glossary for the modifying adjective that gives appropriate "weight" to the term. ("Slightly muddy" is more informative than just "muddy.")

Some terms, drawn from common usage, are not defined in the Glossary, because their meaning is clear to any English-speaking person. They are listed in the Reverse Glossary merely to show that they are also accepted subjective-audio parlance.

Acoustical absorption
Good: adequate, appropriate, "good acoustics," unobtrusive
Not Good:
Excess: dead, dry
Deficiency: billowy, echoic, fluttery, live, plastery, reverberant, slap

Audibility (of flaws)
From best to worst: Inaudible, subtle, slight, moderate, significant, conspicuous, severe, extreme, intolerable, or Aaagghh! (screaming-up-the-walls)

Detail
Good: accurate, crisp, delicate, focus, resolution, snap
Not Good:
Excess: accurate (misused), analytical, clinical, etched
Deficiency: closed-in, congestion, diffuse, hangover, haze, opaque, smearing, veiling, velvet fog

Distance
Good: Program-dependent
Not Good:
Close: aggressive, forward, row-A, up-front
Distant: laid-back, recessed, row-M

Frequency response
The following terms describe how a system's or component's frequency response *sounds*, not necessarily how it measures. Phase shift and distortion can sound like frequency-response aberrations.

ENTIRE RANGE
Good: airy, accurate, alive, balanced, extension, flat, neutral, smooth, uncolored, weighty
Not Good: dark, chocolatey, discontinuous, light, lumpy, syrupy, tilted, treacly

BASS
Amount
Good: balanced, full, natural

Not Good:
Excess: boomy, dark, fat, heavy, rich, syrupy, thick, tubby, warm
Deficiency: cold, constricted, cool, lean, overdamped, pinched, sparse, thin
Smoothness:
Good: natural, smooth, tight
Not Good: boomy, lean, lumpy, one-note bass, thin, tubby, uneven, woolly
Extension (frequency range):
Good: deep, extended, foundation, infra-bass, seismic
Not Good: pinched, restricted, shallow, sparse, thin

MIDRANGE
Good: alive, jump factor, natural, neutral, realism, uncolored
Not Good:
Excess: aggressive, brassy, close-up, forward, humped, projected, row-A
Deficiency: dished, distant, laid-back, polite, recessed, reticent, withdrawn
Colorations: boxy, chesty, honky, hooty, horn sound, nasal, raucous, vowel ("a," "ah," "aw," "ee," "eh," "ih," "oh," "oo," "unh")

LOW & MID TREBLE
Good: natural, neutral, smooth
Not Good:
Excess: bright, brittle, etched, glare, glassy, hard, metallic, screechy, shrill, steely, strident
Deficiency: dead, dull, muffled, muted

EXTREME TREBLE
Good: airy, extended, delicate, open
Not Good:
Excess: hot, sizzly, spitty, tipped-up, tizzy, toppish, wiry, zippy
Deficiency: closed-in, soft, sweet

Imaging
Good: bunching, correct width, phantom image, specificity, stability, tight
Not Good: bunching, hole-in-the-middle, phasey, vagueness, wander, wide central image

Noise
Good: No extraneous noise
Not Good:
Continuous:
Low-pitched:
Pure, lacking harmonics:
60Hz or 120Hz: hum
20 to 100Hz: acoustic feedback (turntable)
With spiky edges: buzz

Wideband:
Low-frequency: turntable rumble
Full-range:
"ff"-sound: pink noise, tape hiss, FM interstation hiss
"ss"-sound: white noise
High-frequency whistle: heterodyning, D/A idling noise
Random or Periodic:
200Hz to 1000Hz: acoustic feedback, howl, squawk
33 times/minute "ff"-sound: LP pressing imperfection, swish, whoosh
Impulse noises: crackles, pops, surface noise, ticks

Realism
Good: aliveness, ease, delicacy, involvement, musicality, naturalness, palpable, realism, transparency
Not Good: boring, colored, dead, distorted, lifeless, uninvolving

Soundstaging
WIDTH:
Good: beyond-the-speakers, floating, palpable, spacious
Not Good: narrow, pinched, restricted
CONTINUITY:
Good: center fill, coherent, stereo spread
Not Good: bunched, hole-in-the-middle
DEPTH:
Good: layering, perspective
Not Good: distant, flat, forward, laid-back, polite, recessed, Row-A, Row-M

Texture
Good: liquid, textureless, transparent
Not Good: dry, chalky, grainy, gritty, harsh, hashy, rough

Timbre
Good: accurate, natural, uncolored
Not Good: chesty, colored, hooty, horn sound, metallic, steely, thin, vowel coloration, wiry

Transient response
Good: articulation, attack, controlled, delicate, detailed, fast, quick, tight
Not Good: closed-in, dull, ringing, rounded, slow, sluggish, smeared

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Sidebar 1: About Frequency Response
Although frequency-response anomalies (from flat) are readily measurable when they exist, other things which are not directly related to frequency response can affect *apparent* frequency response.

Harmonic distortion can sound like elevated treble response when, in fact, no such rise is measurable, and phase shift can cause an apparent thinning or dulling of the sound. Some subjective terms which are used to describe frequency response describe the sound's apparent response rather than its measured response.

Sidebar 2: About Height Information
Although our ears can locate the height of sound sources in front of us, stereo microphones and reproducing systems are not usually configured to handle height information. (Only a full Ambisonic system is inherently capable of it.)

Imaging of vertical information is unpredictable and anomalous, but all good stereo systems will produce enough vertical spread so as not to seem unnaturally flattened. Certain notes (and instruments) will often seem to detach from the generally horizontal soundstage, appearing to come from above or below the other instruments. Cymbals, for instance, are often heard as "arching over the orchestra."

Since vertical information is not (usually) recorded, the listener should try to ignore any apparent height cues. Tall tower-type loudspeakers, with their tweeters at the top and woofers at the bottom, often produce a vertically inflated soundstage and pronounced vertical wander which is hard to ignore.

Sidebar 3: Holt's Laws
1) The better the recording, the worse the performance, and vice versa.

2) The shriller the advertisement, the worse the product.

3) Every component is imperfect, and every imperfection is audible.

Sidebar 4: About Qualifiers
Because the process is so subjective, choosing the appropriate qualifier for an observation is one of the most slippery aspects of subjective reporting.

Whether an observation is judged to be "subtle" or "conspicuous" will depend on the reproducing system, the choice of program material, and the listener's mood, temperament, and acquired listening skills. What is "subtle" to one listener may be "moderate" to another.

A magazine reviewer unsure of his or her reputation for acuity will often inflate the audibility of something in order to demonstrate how extraordinarily perceptive he or she is. This misleads the reader.

The qualifier should be carefully chosen, and any misgivings about that choice should be explained, such as "Through my system, this was moderately audible." The system should, of course, have been previously described in the review, and perhaps characterized as "especially revealing" or otherwise.

Sidebar 5: About Soundstaging
The ideal stereo soundstage for a large performing group will center the performers across an area of about 2/3 to 3/4 of the distance between the loudspeakers, and will audibly separate the front rows from the receding rows (layering). There will be an awareness of the reflective boundary walls of the acoustic space behind and to the sides of the performers, and the spatiality of the hall itself will extend a considerable distance beyond the distance between the loudspeakers. The ideal is achieved only from suitably miked recordings.

Specific phantom images will often appear beyond the speakers when the performing group was wider than the axis lines of a coincident pair of microphones, or if the recording has been specifically encoded with recoverable ambient surround information. Such "beyond-the-speakers" imaging, however, is only audible from the sweet spot. [*If a pair of loudspeakers has very poor phase performance, or very loose crossover tolerances, or produces strong specular reflections, it can produce strong "beyond-the-speakers" imaging, which may be very pleasing. This, however, is a distortion of what is encoded on the recording.---Ed.*]

Surround-encoded recordings, played on a properly implemented surround-sound system, can cause the hall ambience to "wrap around" to the rear, completely enveloping the listener as in an actual concert hall, and can even place instruments in any direction around the listener. So-called "derived-ambience" decoders can extract the ambient spatial information from unencoded recordings, but cannot place phantom images at the sides or rear.

Sidebar 6: About Vowel Colorations
The audible effects of these can be illustrated in two ways: vocally, or by means of a pink-noise signal source---track 4 on *Stereophile*'s original Test CD or track 15 on our Test CD 2 will do nicely---and a 1/3-octave equalizer.

For the vocal simulations, shape the tongue and lips as if pronouncing the vowel sound, and breathe out through the mouth.

With the generator and equalizer, set all controls to Flat and raise the band closest to the vowel sound's center frequency by 6dB or so. (The effect will be more noticeable if you can switch the equalizer in and out of circuit without changing the level, allowing you to compare Uncolored with Colored.) Then play some program material to get a handle on what the same coloration does to the sound of music. Each time, restore the equalizer's response to Flat before raising the next band.

Try lowering each band, and you will observe that, even though the effect of the dip is audible, it is much less so and is much more difficult to describe.

Sidebar 7: Greenberg's Law

The best-looking components tend to sound the worst.

Field's Corollary to Greenberg's Law (as first outlined by Dan Field on Compuserve's CEForum, May 16, 1993).

...and ugly speakers sound better!

Sidebar 8: It's not what you say, it's how you say it

It will come as no surprise to *Stereophile* readers that reviewers have many styles of expression. We all choose our individual ways of telling the reader what we think about a product. Corey Greenberg may write that the Symphonic Bombast 101 Mk.II power amplifier "KICKS ASS!" I may prefer to say that it "sets a new standard of performance in its price range."

Despite this wide range of expression, all *Stereophile* reviewers have one thing in common: We tell it like it is. Whether we like a product, dislike it, or like it with reservations, readers should have no doubt about what we think after reading our review conclusions. Moreover, the "dynamic range" of expression within *Stereophile* is wide. We don't pull punches on bad products and aren't afraid to go out on a limb in touting the very best components.

Reviewers for mainstream magazines, however, appear to be less willing to take a firm stand on a product. The range between good products and bad is sufficiently narrow for these reviewers that every audio product in existence would appear to be "competent" and "offer good value." It has been joked that the most definitive statement such writers would venture is: "Of all the loudspeakers I've ever auditioned, this is certainly one of them." Further, the fear of offending a manufacturer appears to be sufficiently great that even the slightest hint of criticism signals the suspicion with readers that there is a significant flaw in the product.

Mainstream reviewers, therefore, need a set of phrases that, while being literally true, will alert the reader not to buy the product yet will avoid antagonizing the manufacturer. To that end, I've developed a few handy suggestions (footnote 1).

For example, the reviewer might finish a review of a dreadful loudspeaker with this statement: "I can assure you that *no* loudspeaker would be better than this one."

The manufacturer is happy, but the astute reader, reading the conclusion as meaning that this speaker is so bad that not having a loudspeaker at all is preferable, knows not to buy the product.

The reviewer may say this about a digital processor so bad it's not even worth an audition: "I urge you to waste no time in auditioning this digital processor for yourself." And the astute reader doesn't waste any time at all listening to the processor.

If the reviewer was happy to get rid of a cable from his system, he could say: "I am pleased to report that I *once* had this cable in my reference system."

For a power amplifier that just doesn't measure up to the competition: "I cannot say

enough good things about this power amplifier, or recommend it too highly."

A review of a particularly unmusical-sounding preamplifier may conclude with this line: "In my opinion, you will be *very* fortunate to get this preamp to make music for you."

And for those situations when the reviewer is actually confronted by a manufacturer of a truly wretched component, it is very useful to be able to truthfully state: "I haven't heard a sound quite like this before."

But don't worry---you won't see phrases like these in *Stereophile*. Instead, you're more likely to have CG tell you, "This loudspeaker "SUUUUUUUUUUUUUUUUUUCKS!"---Robert Harley

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Footnote 1: Adapted from *The Chronicle of Higher Education*, February 25, 1987, p.42, by Robert J. Thornton, Professor of Economics at Lehigh University.---RH