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Do not use loudness compensation with good loudspeakers. It makes them sound boomy.

For further information write KLIPSCH and ASSOCIATES, Inc for the DOPE FROM HOPE  Vol. 4  No. 4 Supplement.

Paul W. Klipsch
Editor
The Dope From Hope
The Loudness Control
Proper and Improper Use

The Loudness Control is a specialized form of volume control in which for low level or "background" music, the treble range is attenuated more than the bass.

The principle involved is based on the studies by Fletcher and Munson that human hearing response at low volume levels drops at low frequencies. The Fletcher-Munson Curves are used as a basis for compensating bass equalization at low volume levels.

Application of this idea in the form of the "Loudness Control" has been controversial, the purist contending that as music is played more softly it should resemble a live orchestra at a distance; most amplifier manufacturers take the opposite viewpoint of preserving the bass regardless of how soft the treble is cut.

These philosophic viewpoints may be argued at great length. Right or wrong in the usual sense, the Loudness Control is always wrong in the case of highly efficient speakers which call for low volume control settings to achieve normal listening levels. The "Loudness Control" is intended to produce the enhanced bass compensation appropriate to soft playing levels, but actually does so at high speaker output levels when using efficient speakers. The resulting unbalance may be as much as 20 decibels.

The better amplifiers, if they provide "Fletcher-Munson Compensation" or "Loudness Control" or "Audio Compensation", do so with provision to bypass this feature, so as to regulate the magnitude of "Correction" down to zero -- in other words, whatever devices of this sort one finds on high class amplifiers, one finds a switch to render the feature inactive. Thus all good amplifiers can be adjusted to play "flat".

A specific example may be described. Speaker A is reasonably flat in response, and exhibits an efficiency of 20%; Speaker B is similarly flat in response, but is only 0.2% efficient. The difference in efficiency is 20 decibels and to play one speaker, then the other, at the same output level, requires a difference in volume control setting of 20 db. The Fletcher-Munson Compensation for 20 db level change might be of the order of 10 db. Thus the more efficient speaker will sound boomy because of the equivalent 10 db bass boost.

...The mark of integrity in loudspeakers!
To compound the error, as one examines the more expensive speakers apt to show higher efficiencies, the bass response is apt to be better than for the cheaper speakers of lower efficiency. This difference sometimes as great as 5 or 10 db, which combined with the "Loudness Control" could accumulate an error of the order of 15 to 20 db.

In practice it is well to start a system with everything as near "flat" as possible and use this quality as a reference or a point of departure if tone compensation is to be the subject of experiment. Thus the "Loudness Control" should be disabled and a simple "Volume Control" used for at least preliminary installation adjustment and initial evaluation of system components.

Paul W. Klipsch
Editor
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