



## Glossary of Terms

### CARTRIDGE TYPES

There are two types of cartridges: magnetic and ceramic (sometimes referred to as crystal). Magnetic types are usually more expensive, good, but a well designed ceramic cartridge can offer as good if not better sound than inexpensive magnetic cartridges.

### FET, FIELD EFFECT TRANSISTOR

A specially designed transistor that reduces noise interference and improves FM sensitivity. It is particularly important if the receiver or tuner is located near an FM broadcasting station.

### FM SENSITIVITY

A sensitivity rating to determine the ability of FM tuner sections to pull in weak stations. It is usually rated in microvolts; the lower the better.

### FREQUENCY RESPONSE

The ability of the equipment to reproduce audible sounds. The human ear can detect sounds as low as 20 Hz and as high as 15,000 Hz. A good system should amply cover this audible range. The lower it starts and the higher it ends indicates the reproduction of better audible sounds.

### HIGH CUT FILTER

A filter that cuts off high frequencies at the top where they may induce hiss and other noise.

### LOUDNESS COMPENSATION

When listening to music at low volume, the human ear becomes less sensitive to low and high frequencies. The loudness compensation (or loudness control) will boost both bass and treble while overall volume is lowered. All Sony compact music systems have loudness compensation built into them.

### LOUDNESS SWITCH

A specially designed switch for the audiophile to put on or off loudness compensation for particular music to his particular taste.

### MUTING

Quiescent noise between FM stations. It helps make station tuning more enjoyable.

### QUADRAPHONIC

A new dimension in music systems that recreates the ambience of the live performance by enveloping the listener in natural sound from four speaker channels. The four speakers provide both right-and-left separation and maintain stereo and front and back separation. Front speakers produce the sound as heard directly from the orchestra and the back speakers recreate the direct, reflected sound that is vital to the full live performance ambience.

### SELECTIVITY

The ability of a receiver to reject unwanted neighboring stations. This makes station selection easier. (This is sometimes referred to as "channel separation.")

### SIGNAL TO NOISE RATIO (S/N RATIO)

A ratio to indicate the efficient amplification of sound signals at minimum noise level that may be produced in the equipment. Indicates how quiet the receiver output will be during pauses in speech or music. It is specified in dB; the higher the number, the better the performance.

### SOLID-STATE IF FILTER

A special IF filter developed by Sony to obtain utmost selectivity from receivers. All Sony compact music systems incorporate this "solid-state" IF filter instead of regular IF filters in their tuner sections.

### SPEAKER SELECTOR SWITCH

A special switch that permits you to operate an extra pair of speakers in another room instead of using the main speakers. Some Sony models allow you to operate both sets of speakers simultaneously.

### SQ\* (STEREO QUADRAPHONIC)

A special Stereo Quadraphonic system adaptable to all SONY units with tape monitor facilities. Its unique advantage is that SQ does not obsolete existing two-channel stereo records, tapes or broadcasts. In fact, it enhances them by adding additional ambience. And SQ recordings can be played on standard stereo equipment without the purchase of extra accessories.

### STEREO SEPARATION

Indicates the equipment's capability to reproduce left and right sound sources respectively as musicians play. Good separation means that the "original" sounds, once they're recorded, come from the same respective sides through the speakers. It gives a better stereo effect or more "concert hall realism." One way to evaluate good stereo separation is with your own ears. Another is to check the dB rating for stereo separation on the manufacturer's specifications; the higher the better.

### TAPE MONITOR SWITCH

A special switch that provides monitoring to assure proper tape recording "off the air" or records while either one is being played. With two tape monitor switches there is more flexibility to adapt two tape recorders, or one tape recorder and the AW 4-channel Decoder/Amplifier.

### WOW-FLUTTER

Both are sound disturbances due to variations in speed turntables or tape recorders. "WOW" creates a low-pitched wavering sound. "FLUTTER" creates a high-pitched wavering sound.

# How to listen for Quality.

A choice in Loudspeakers is not as subjective as many people claim. A novice listener will not know what the characteristics of "showroom" equipment can do to mislead him. He will too often listen for obvious defects" (many of which are

not the speaker's fault) rather than the more subtle (but recognizable), attributes that distinguish a really fine speaker. Here is a list of things to listen for and how these characteristics relate to speaker quality and ultimate listening satisfaction.

**1. Bass response.** When you listen for bass, which is traditionally what people listen for first, make sure that you use a record or tape that has really deep bass on it— not just medium-deep bass like you find in most rock recordings. Use something like a pipe organ, or a close-miked bass guitar. Bass drums (big ones) recorded in large halls also test deep bass. Many speakers unable to reproduce the deep, deep bass have a peak in the mid-bass region (100-200 cycles). Such speakers sound like they have a lot of bass but get muddy sounding when you add bass with tone controls. Try to notice whether bass tones have a definite pitch (like they should) or if their exact pitch is undefined.

**2. High frequency response.** Most speakers will reproduce high frequencies, but many concentrate high frequency output in a narrow path in front of the speakers. This is not an "obvious defect" when listening in most stores but can lead to very poor fidelity in a small room or wherever one can't sit directly in front of the speakers. One easy test is to tune an FM receiver between stations where you hear only hiss (a random mixture of high frequencies). Walk by the front of the speaker and notice if the hiss seems to become lower in pitch as you go off the center. With a good speaker the effect will hardly be noticeable. On music, a beamy speaker (bad news) will be difficult to balance, and the sound will seem to come from whichever speaker you are closer to. As a result the sound is likely to sound more mono than stereo, especially in a small room. A good high dispersion speaker will give outstanding stereo image anywhere in a room.

**3. Overall frequency balance.** (The relative quantity of bass versus mid range vs. treble.)

This is especially difficult for a beginning listener to judge, but fortunately most big-name brands have fairly good balance.

**4. Transient response.** This is where most beginning speaker buyers make mistakes. A speaker with good transient response will reproduce bursting sound (like clicking noise, or most percussion sounds) with an open, lifelike clarity. Unfortunately, good transient response will expose weaknesses in the rest of the component system very readily— and a beginning listener will blame what he hears on the speaker. Record defects, mistracking of the stylus, amplifier clipping (distortion due to lack of power) will be exposed completely by speakers having good transient response. So when you listen to speakers, make sure you use a clean record or tape that is free from pressing defects, and listen through amplifiers having plenty of power. Speakers, unless pushed to very high volumes rarely distort at high frequencies. If you hear distortion at moderate volumes then the distortion is probably in the source— not the speaker. It may be reduced by using the high filter or turning down the treble and/or volume controls. Though a speaker with such good transient response may expose many defects, it will sound much better on clean recordings than other speakers. On music, a speaker with poor transient response will make drums sound muddy. A solo trumpet is a good test too; it should have considerable "razz" on an accurate speaker and will sound too smooth on a poor speaker. Remember— defects in the source should be eliminated at the listener's option with the amplifier controls, not automatically all the time by a deficient speaker.

## OUR BEST SPEAKER VALUE EVER!

What the critics are saying . . .

- "Top quality performance"
- "First good omnidirectional loudspeaker"
- "Smooth wide range— full low bass"
- "Linear transient response"
- "Small size— big sound"
- "A natural for quadraphonics"
- "Another Hegeman contribution to hifi art"

The Hegeman is a compact low cost loudspeaker system with the openness and integrity of sound which are characteristic of professional systems. The first in a family of point source loudspeaker systems, the Hegeman 1 utilizes a hemispherical radiation pattern which produces optimum balance between direct and reverberant sound. The result is an effective sound source far larger than the physical size of the cabinet.

In a handsome teak finish with charcoal grille, the slender enclosure stands just over two feet tall. Its graceful lines fit well with modern or traditional room decor.

Over the past twenty years, Stu Hegeman has been responsible for the successful development and marketing of \$20-million worth of high fidelity products. Now, together with a balanced team of experts in engineering design, business administration, market planning and sales, Stu Hegeman has organized . . .

**A. Stewart Hegeman**, recognized as one of the leading creative engineers in the high fidelity industry. Here's what the critics say:

"The name of Hegeman is to hifi what the names of Bentley and Bugatti are in automotive lore. Like those, renowned car builders, Hegeman has gained his fame as the creator of 'classics.' Some of the hifi components to which he has contributed . . . have become collectors' items.

— Popular Electronics

"Hegeman's ingenious design for loading permits a much smaller box than any previously used with this astonishing driver."

— Esquire  
\$114

**Hegeman 1**  
**Loudspeaker System**

