

SOUND IN FILM AND VIDEO

Acoustic properties of sound:

Loudness - is the volume or level of the sound

Pitch - is the perceived "highness" or "lowness" of the sound (soprano, bass)

Timbre - is the quality of a musical note or sound or tone that distinguishes different types of sound production, such as voices or musical instruments. The physical characteristics of sound that mediate the perception of timbre include spectrum and envelope. Timbre is also known in psychoacoustics as *tone quality* or *tone color*. For example, timbre is what, with a little practice, people use to distinguish the saxophone from the trumpet in a jazz group, even if both instruments are playing notes at the same pitch and loudness.

Dimensions of Film Sound:

Rhythm - is a sound's rhythmic qualities, or the pulse, the beat. Time is a factor here, as rhythm can be fast or slow.

Space - is a sound's spatial dimension. Sound is in 3D space with stereo panning, Surround sound enhances that even further.

Other important terms:

ADR –stand for "Automated" or "Automatic" Dialog Replacement. Dialog that cannot be salvaged from production tracks must be re-recorded in a process called looping or ADR. Looping originally involved recording an actor who spoke lines in sync to lengths of recording tape. ADR, though faster, is still painstaking work.

An actor watches the image repeatedly while listening to the original production track on headphones as a guide. The actor then re-performs each line to match the wording and lip movements. Actors vary in their ability to achieve sync and to recapture the emotional tone of their performance.

Ambience –is the background sound accompanying a scene, or the ‘natural’ sound of the actual location. In other words the sound of the wind, birds, traffic, rain, etc of the location are all ambient sounds.

Attack – Attack refers to, when using a compressor, the time between the signal reaching the threshold to when the automatic gain reduction takes places. A short attack produces a rapid compressed sound; a long attack creates a more relaxed sound. Attack refers to how hard or how fast the sound ‘hits’ when it first becomes heard. Attack can be hard or soft.

Decay – is the rate of reduction of the audio signal generated from the peak level to sustain level. Decay is the fade out of the reverberation of a sound. In other words, the decay refers to how the sound fades away in terms of a quick decay, or gradual.

Foley – is the reproduction of everyday sounds for use in filmmaking. These reproduced sounds can be anything from the swishing of clothing and footsteps to squeaky doors and breaking glass. The best Foley art is so well integrated into a film that it goes unnoticed by the audience. It helps to create a sense of reality within a scene. Without these crucial background noises, movies feel unnaturally quiet and uncomfortable.

Foley artists look to recreate the realistic ambient sounds that the film portrays. The props and sets of a film do not react the same way acoustically as their real life counterparts. Foley sounds are used to enhance the auditory experience of the movie. Foley can also be used to cover up unwanted sounds captured on the set of a movie during filming that might take away from the scene at hand, such as overflying airplanes or passing traffic.

Microphones – are a type of *transducer* - a device that converts energy from one form to another. Microphones convert acoustical energy (sound waves) into electrical energy (the audio signal).

Different types of microphone have different ways of converting energy but they all share one thing in common: The *diaphragm*. This is a thin piece of material (such as paper, plastic or aluminum), which vibrates when it is struck by sound waves. Types of microphones: lavalier, dynamic, condenser, and shotgun/boom.

Phantom Power –is a means of distributing a DC current (electricity) through audio cables to provide power for microphones and other equipment.

The supplied voltage is usually between 12 and 48 Volts, with 48V being the most common. Individual microphones draw as much current from this voltage as they need. Many Video and film cameras have a phantom power source so the

user can plug-in microphones directly and utilize the typical shotgun condenser mics used for film production.

Room tone – is a location's "aural fingerprint" - nonspecific sounds, similar to the ambient sound of a location. Each room has a distinct presence of subtle sounds created by the movement of air particles in a particular volume. A microphone placed in two different empty rooms will produce different room tone for each. Room tone is recorded during 'production sound recording'. Room tone is used to match the production sound track so that it may be intercut with the track and provide a continuous-sounding background. Room tone may smooth out edit points and give a feeling of life in a sound-deadened studio. The soundtrack "going dead" or totally silent, would be perceived by the audience not as silence but as a failure of the sound system.

Sustain – Once a sound has reached its peak, the length of time that the sound will sustain is dependent upon the energy from the source vibrations. When the source sound stops, the sound will begin to decay

Sweeten – Audio sweetening is a "catchall" phrase for fine-tuning sound in postproduction. Sweeten/sweetener refer to subtly mixing an additional sound to a pre-existing sound to "sweeten" the pre-existing sound. Sweetening can also refer to the final EQ and 'mixing' of the various soundtrack(s) in the film.

THX – is a design and quality control system for the playback environment in a theatre. First the aspiring theatre must meet certain acoustic criteria:

- Low background noise, (no loud air conditioners or projectors)
- Good isolation (so the lucky patron doesn't get to hear the gunfight in the theatre next door)
- Specific reverberant characteristics based on the volume of each individual theatre
- The theatre can't have any nasty slap echoes or reflections.

When an individual theatre meets these standards, it means that.

- The dialogue will be more intelligible,
- The high frequencies will reproduce clearly,
- The bass will not build up excessively within the room, etc.

Walla – A sound effect for the murmur of a crowd in the background. Walla is often used as subliminal aural communication and sets a mood or a tone.

The word walla was created in the old radio days when they needed the sound of a crowd in the background. They found if several people simply repeated "walla, walla, walla, walla" it sounded like people talking. The audience did not really hear the words, just the buzz of voices.

Categories of sound in Film

Dialogue – Cinematic dialogue is oral speech between characters. This distinguishes dialogue from other types of cinematic language such as voice-over narration, internal monologue, or documentary interviews, which have different characteristics.

Voice-over – (also known as off-camera or off-stage commentary) is a production technique where a voice is used in a radio, television, film, theatre, or other presentation. The voice-over may be spoken by someone who appears elsewhere in the production or by a specialist voice actor. Voice-overs are often used to create the effect of storytelling by a character/omniscient narrator. Sometimes, voice-over can be used to aid continuity in edited versions of films, in order for the audience to gain a better understanding of what has gone on between scenes.

Sound effects – or audio effects are artificially created or enhanced sounds, or sound processes used to emphasize artistic or other content of films, television shows, live performance, animation, video games, music, or other media. In motion picture and television production, a sound effect is a sound recorded and presented to make a specific storytelling or creative point *without* the use of dialogue or music.

Ambient sound – room tone (defined above)

Walla walla (defined above)

Foley (defined above)

Music – is an art form whose medium is sound. Common elements of music are pitch (which governs melody and harmony), rhythm (and its associated concepts tempo, meter, and articulation), dynamics, and the sonic qualities of timbre and texture. Music genres include: Orchestral, Rock-n-roll, Country, Hip hop, Electronica, Classical, Dramatic, Jazz, R&B, etc.

“Music is the tonal analogue of emotive life” – Susan Langer