

Mic Placement and Working Distance



4 Fundamental Styles of Microphone Placement for Studio/Stage Recording

- Close Miking (1 inch-3ft)
- Distant Miking (3ft-10ft)
- Accent Miking (take care to sound natural)
- Ambient Miking (10ft or more)

Close Miking (or spot miking)

- Mic is often positioned about 1 inch to 3 ft from a sound source.
- It creates a tight, present sound quality.
- It effectively **excludes** the acoustic environment.
- The high level masks the sounds in distance.

Close Miking (or spot miking)

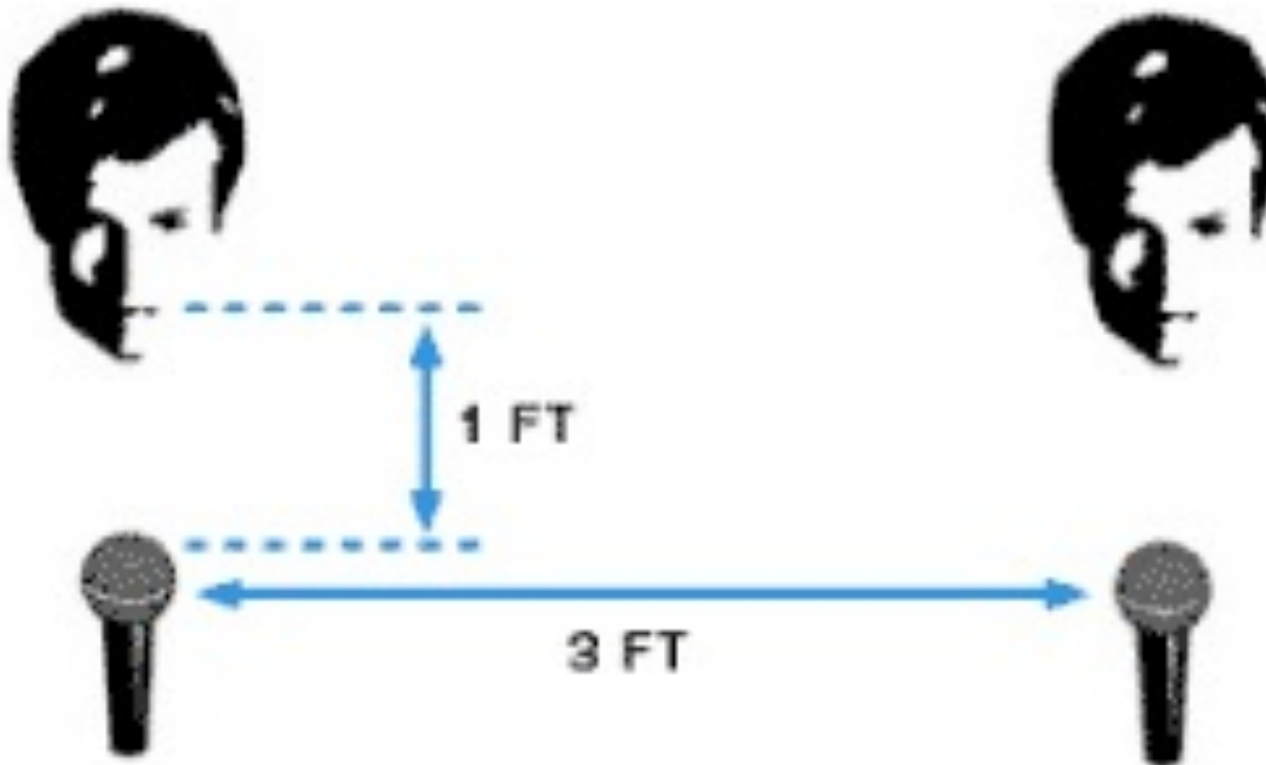


Close Miking - Leakage

- Leakage occurs when one instrument's mic picks up the sound of a nearby instrument's mic.
- To avoid leakage:
 - Place the mics closer to their respective instruments
 - Place an acoustic barrier (flat, gobo, or divider) between the two instruments
 - Use directional mics
 - Spread the instruments farther apart

Close Miking 3:1 Distance Rule

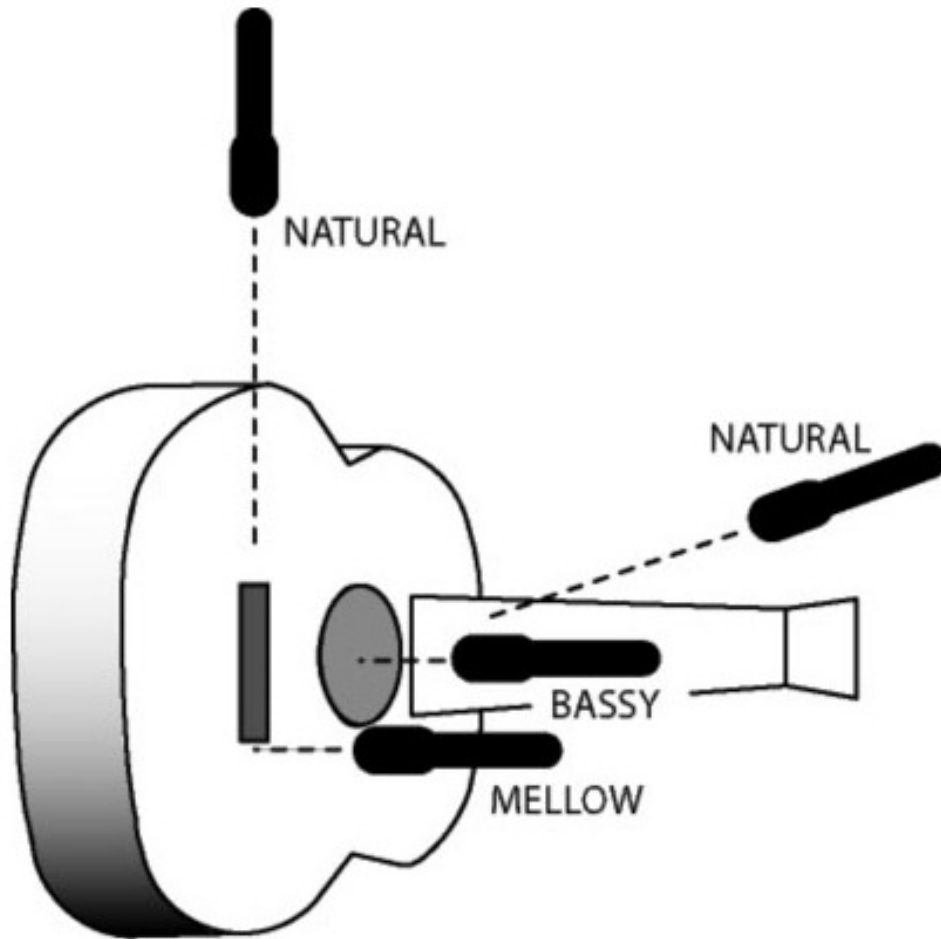
3:1 Rule



Close Miking – Tonal Balance

1. Move the microphone along the surface of the sound source until the desired balance is achieved.
2. Place the mic farther back from the sound source to allow for a wider angle (and therefore more overall sound).
3. Change the mic.
4. Equalize the signal until the desired balance is achieved.
5. ??

Close Miking

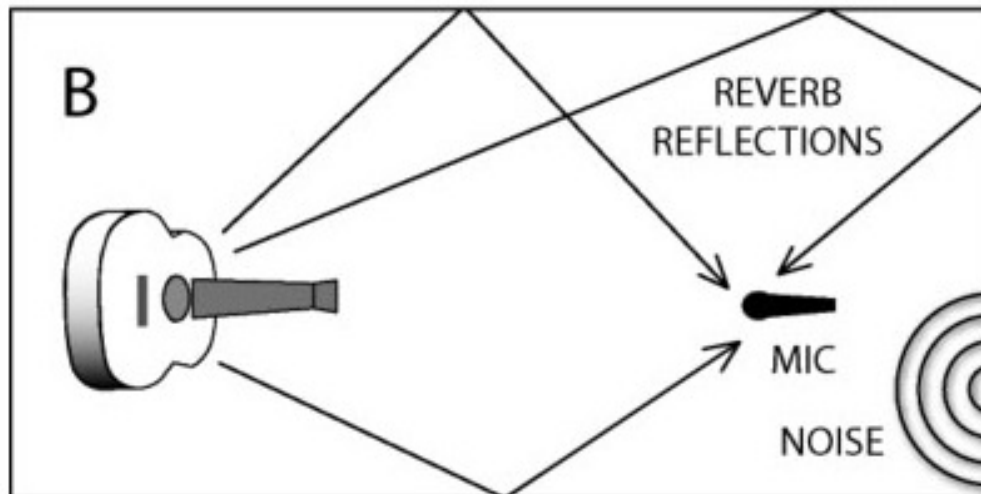
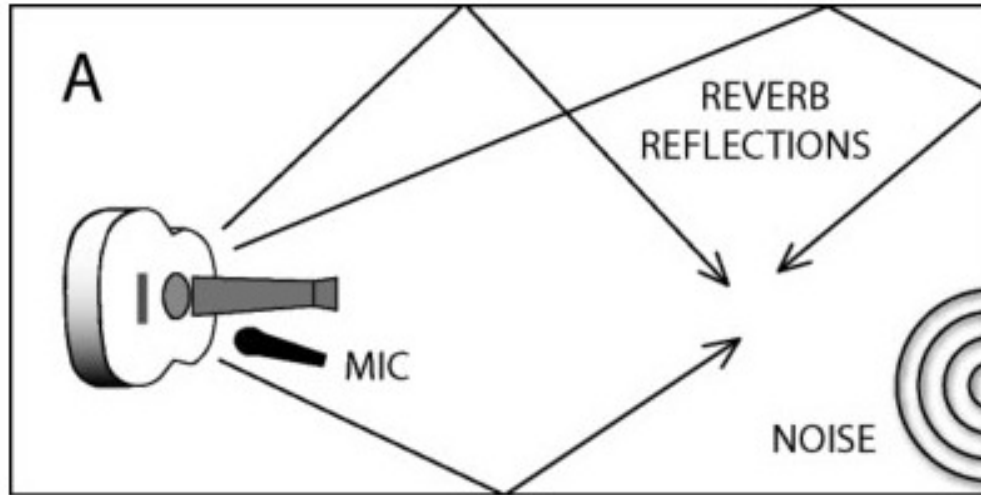


Distant Miking

One or more mics are positioned at a distance of 3 feet or more from the intended signal source.

- The distance may vary with the size of the instrument.
- It can pick up a large portion of an instrument or ensemble preserving the natural tonal balance of the source, by placing the mic at a distance that's roughly equal to the size of the instrument or sound source.
- Distant miking allows the room's acoustic environment to be picked up (and naturally mixed in) with the direct sound signal. This allows for a live, open feeling to a recorded sound, but if the room acoustics are bad, one needs to add absorption panels or place the mic closer to the source.

Distant Miking



Distant Miking



Boston Symphony Orchestra_Gurre-Lieder-1:Orchestra Prelude



Piano 1



Piano 2

Distant Miking

- Do not place it randomly!
- It can cause phase cancellations that occur between the direct sound and the delayed sounds reflected off the floor and other surfaces.
- If these delayed reflections arrive at the mic at a time that's equal to one-half of a wavelength (or an odd multiple thereof), the reflected signal will be 180 degrees out of phase with the direct sound.

Ambient Miking

- Places the pickup at such a distance that the reverberant or room sound is MORE prominent than the direct signal.
- Often a cardioid stereo pair or crossed figure 8 (Blumlein) pair that can be mixed into a stereo or surround-sound production to provide a natural reverb and/or ambience.

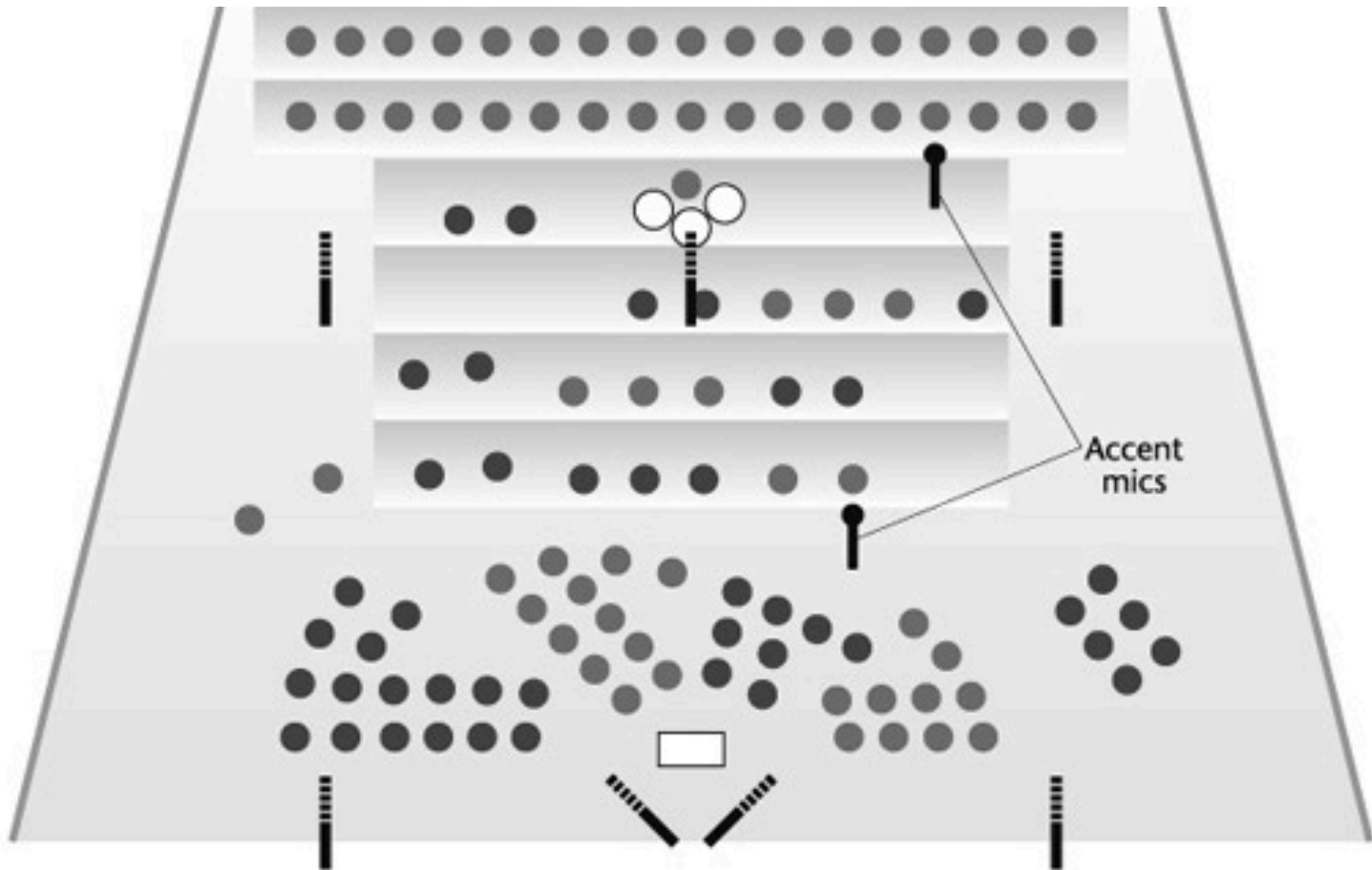
Ambient Miking



Accent Miking (or off-miking)

- Use when close-miking and distance miking are not providing a natural tone. A compromise must be made. Often used when mixing in an instrument that needs **more presence** in a larger ensemble or orchestra.
- Take care not to have the pickup sound separate and identifiable, only during the solo passage.

Accent Miking



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