



AUDIO ENGINEERING

MICROPHONE SELECTION GUIDELINES

*There are no hard and fast rules about microphone choice, type or their exact placement on any source. Here are suggestions for microphones based on the extensive collection available to students in the Audio Engineering program at Musician's Institute.

Important Characteristics Of The Desired Sound Pickup

Mic Type/Placement/Polar Pattern That Can Produce The Desired Sound Pickup

Microphone(s) Suggested Available In MI's Locker (May, 2012)

Natural, Full Range Tone Quality

A flat frequency response using condenser

AKG Solid Tube • f
Neumann U87 • ~ √
Neumann TLM 103 • f

Natural, Full Range Tone Quality

A flat frequency response using dynamic/ribbon

Electro-Voice RE20 √

Bright Tone Quality

A rising frequency response using condenser

AKG C414B • ~ § √
AKG C451 § √

Present, Mid Range Detail

Using a dynamic microphone

Shure SM57 f
Sennheiser MD421U f †

Extra Ruggedness & Reliability

Using a dynamic and/or modern ribbon/condenser

Shure SM57 f
AKG D-112 f
Audix D6 f
Shure Beta 52 f

• = side address microphone
f = fixed-cardioid polar pattern

~ = multiple polar patterns
§ = adjustable attenuator (pad)

† = switchable frequency response
√ = switchable low frequency roll-off

Important Characteristics Of The Desired Sound Pickup

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Microphone(s) Suggested Available In MI's Locker (May, 2012)

Boosted Low Freqs At Close Range

Use the proximity effect of a cardioid mic.

All cardioid microphones

Flat Bass Response at Close Range

Use an omnidirectional microphone.

AKG C414B • ~ § √

Less Feedback, Leakage, Room Sound

Cardioid microphones very close to Source

Shure SM57 f

SM58 f

TLM 103 • f

All cardioid microphones

Enhanced Pickup of Room Sound

Move room mic further from source.
Use any of the stereo microphone
technique(s) listed on the right.

**Stereo Miking Techniques:
Spaced Pair, X/Y, Blumlein,
Mid/Side, Decca Tree Array**

Reduce handling noise

Use live vocal mic or microphone shock mount.

SM58

U87 shock mount √

Reduce Low Frequency plosives

Pop filter or wind filter in front of microphone.

Foam wind filter, pop screen

Distortion free pickup of loud sounds

Microphones with max SPL rating or pad

AKG C414B • ~ § √

Noise-free pickup of quiet sounds

Condenser with low self-noise, high sensitivity

KM184 f

AKG C451 § √

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