

A Guide To Cassette Tape-Recording

PERMISSION

Always ask if it's okay to tape-record someone. Be sure you get permission to record before you start.

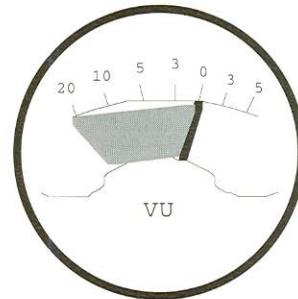
TYPES OF RECORDERS

Portable cassette recorders can be as simple as a palm-size machine with a built-in condenser microphone or as complex as a book-size stereo machine with left and right channel inputs for professional microphones.

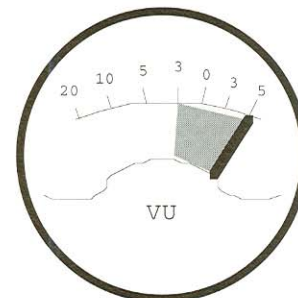
RECORDING LEVEL

The least expensive recorders will not have any way to monitor the recording level. More expensive machines will have either VU (voltage unit) meters or an array of LEDs (light-emitting diodes) which work in a similar fashion. VU meters measure sound in decibels and display the average level of the input signal. This means that the sound may "peak" at a hotter level than displayed by the needle, because it does not respond as quickly as the sound actually happens. In general, try to keep the input level set to where the needle comes up to zero consistently and only occasionally goes over "0" into the red. Never let the needle peg all the way to the right. This will mean over-recording and distortion.

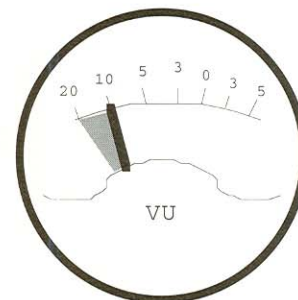
The illustrations below show a good range for recording, over-recording (distorted) and under-recording (noisy).



GOOD RANGE
(Successful Recording)



TOO HIGH
(Distortion)



TOO LOW
(Noisy)

NOISE REDUCTION

A less expensive machine will not have any noise reduction, such as Dolby, built in. A more expensive unit will. Noise reduction is used primarily to reduce tape hiss in relation to the audio signal. Everyone has probably heard a hissy tape. That's why there are different types of bias tapes.

High-bias tapes can use the features of noise reduction better and can also be recorded with a slightly hotter (louder) signal. High-bias tapes and noise reduction are tools to improve what is called the signal-to-noise ratio. Cassette manufacturers label the bias and composition (e.g., CrO₂—chromium dioxide or metal) of the magnetic oxide coating to which the audio signal is recorded and tell the user what settings to use on the recorder (at least for higher-end recorders).

MONITORING

It is advantageous to monitor a recording with headphones. This way you can tell whether a recording is distorting or not, as well as what the mix or balance sounds like.

MICROPHONES

An inexpensive recorder will have a built in omnidirectional condenser microphone. An omnidirectional mic will pick up sound in a spherical pattern and can, therefore, pick up unwanted sound as well as desired sound. On a more expensive machine there is the ability to use external microphones. These can be either condenser or dynamic and either omnidirectional or unidirectional.

MICROPHONE PLACEMENT

Microphone placement becomes a critical issue when recording. Ideally, you want a musical recording to represent, as closely as possible, the original live performance. You can better tell how close you are coming to this ideal by monitoring the recording with headphones.

If the performance is informal, such as at someone's home, move the microphone(s) to a location which gives the best balance between instruments and voices. Also be sure the microphone is not so close to an instrument as to make it sound too bassy or boomy. (This is "coloration," or causing an unnatural tonal quality.) If you are using a recorder with a built-in microphone, try to eliminate handling it as much as possible while recording. The same goes for external microphones. Handling them creates noise which will be recorded on to the tape.

If it is a more formal performance, placement would ideally be determined in a sound check prior to the performance. In a concert setting where a public address system is used, you might get a fairly good recording by situating the microphone in line with speakers. Don't stick a microphone inside a speaker. This will not sound good at all. Recording this way presumes that the sound from the public address system is well mixed. If your recorder has mono or stereo line inputs, you can take a feed from a mixing console and not use your own microphones. When recording this way the issue of recording levels, as shown on VU meters, remains the same.