

More About Recording Perspective

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Modern recording and rerecording techniques permit achieving perspectives which place the listener in two or more places at once. In these cases the recording is no longer an attempt to recreate a live performance in the home.

WHEN YOU SIT DOWN to listen to your favorite record or tape in the quiet of your own home, do you ever consciously evaluate your listening position in terms of sound from the recording itself? Does it sound like you are close to or far from the performance? Are you listening from within the orchestra pit or are you seated in the last seat in the top-left balcony? Does it sound like you are in a huge concert hall

arbitrarily, as the "recording perspective."

While we have already discussed, in general terms, certain limited aspects of the recorded perspective, it is in order that we further investigate this subject because of the increasing influence that it may have upon recorded material. Previously, for the purpose of standardized discussion, we defined "recording perspective" as those im-

possible to *create* new perspectives that have no counterpart in actuality. This last statement warrants repetition in different terminology: there may be *no* location in the recording hall where you can *listen* to the performance and hear what you heard during the tape playback. The purist might object to a recorded program presented in a perspective that cannot exist in a natural live environment but usually he is not even aware of the insult to his "pure" ears. Let us take a look at the possibilities available to the individual about to make a tape recording. From a strictly practical standpoint, the number of perspectives obtainable is a function of the amount of equipment available and so the recording process itself may be broken down, initially, into two general categories:

(1) That process which provides a finished tape at the conclusion of the recording session.

(2) That process which later combines or supplements the material recorded during the recording session.

Usually the amateur recordist operates in the realm of the first category and professional recordings are made in the second category.

Looking at the recording operation in the first category, the number of perspectives obtainable is again further limited by the number of microphones available. Using a single microphone, the closest placement will be that minimum distance that will allow a balance of all instruments to be attained while the farthest microphone placement will be that distance at which excessive reverberation occurs (see Fig. 1). The distance between these two points represents the amount of latitude available to the recordist for obtaining a difference in perspectives. This small distance will vary according to the microphone, the hall, and the size and level of the source. When recording a large orchestra in a large, live hall with an omnidirectional microphone, these two points may overlap depending upon what the recordist considers to be excessive rever-

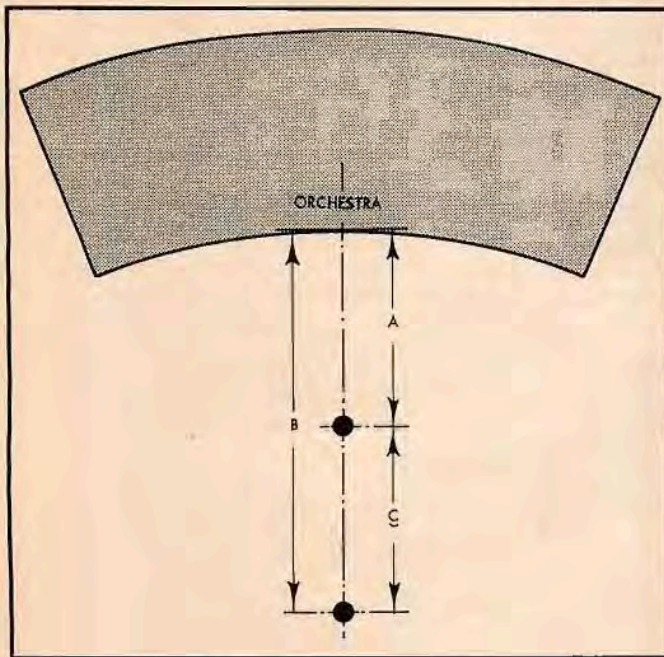


Fig. 1. Maximum (A) and minimum (B) perspectives possible with single microphone recording.

or in a small room? Is the drum a deep mellow sounding "boom" or do you hear the "ping" of the tightly stretched skin before and after impact?

Why, exactly, is this recording your favorite choice? Is it because of the musical content alone or does the recorded presentation of the material influence your decision?

It is obvious that a specific performance can be recorded in many different ways, each of which can sound markedly different from any other. This difference in presentation has been referred to,

pressions received, during tape playback, of: (1) size of the recording hall, (2) distance from the source, and (3) dynamic range—when divorced from additional playback acoustics (i.e. headset listening). It was also stated that all possible perspectives were included between the physical limits of the orchestra center to the furthestmost point in the concert hall. While this is quite true for live listening and served the purpose for simple analysis, actual recording practices reveal that many more perspectives are possible. The item of interest here being that in addition to duplicating perspectives as they actually exist it is

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beration (see Fig. 2). It is obvious that the proximity effect (presence) must be compromised to achieve balance with large groups. It is also obvious that the recordist is at the mercy of the hall acoustics with respect to reverberation. Some reduction in reverberation can be realized from front placement employing a cardioid microphone, but where overhead placement is dictated and an omnidirectional mike must be used, no control exists over reverberation without adversely affecting balance and proximity effect. This type of recording represents the most limited range of perspectives and the final perspective is not so much chosen as dictated by the size of the group to be recorded and the environment (size and liveness) in which the recording is to be made.

Using two microphones allows much more latitude in that the choice of mike placement distances increases. It is possible to get closer while still maintaining balance, and it is also possible to reduce or increase the recorded reverberation by this same amount of increased allowable microphone movement.

Multiple miking further increases the ability to control balance, proximity effect, and reverberation *independently* and it is here that it becomes possible to create perspectives that do not exist in actuality. Close mike techniques may be employed utilizing as many microphones as desired and mixing all inputs prior to the recorder—with ultimate balance at the discretion of the mixer operator. It is obvious that the balance does not have to be in the same proportion as originally performed and instruments with very little carrying power can be raised to dominant solo level if desired. Reverberation can be increased by utilizing additional microphones placed at increasing distances from the source, and, of course, it is possible to have a very close perspective while still maintaining amounts of reverberation normally associated with a distant listening position.

While almost any type of recording can be made with an abundance of microphones and mixing facilities, it must be remembered that the natural reverberation of the hall is used in varying intensities from various positions, and that existing resonances, peaks, and dips caused by local focusing points and hall shape may be recorded also.

It would, therefore, be advantageous to record in surroundings that are free from resonances and, in fact free from excessive reverberation and then, after the recording is completed, add the reverberation as desired. Such an approach is practiced in studio recording and leads us into the second category—that of combining or supplementing the

material that has been previously recorded.

The major difference in this type of operation is that additional mixing and rerecording may take place *after* the original recording is made. In addition to being able to add uncolored reverberation as desired (intensity, decay time, or slope) electronically or acoustically, through rerecording the flexibility of multiple track recording is available. This allows mixing of the individual tracks in the proportions (or directions, for stereo) desired as well as allowing reverberation effects on individual tracks without affecting the content of the other tracks.

The possibilities are many as indicated by the following examples: A common use of separate track reverberation *prior* to mixing and rerecording is that associated with the recording of vocalists. With the voice of the vocalist recorded on a separate track it is possible to add reverberation to this track without affecting the perspective of the accompanying background music on other tracks. Or, conversely, allow a close-mike technique with the singer's voice while adding reverberation to a

tain the effect of a singer that has been recorded with a close-mike technique and reverberation added later, you would have to be two people: one very close to the singer for the proximity effect, and one much farther away (or in another room) to receive the reflected sound for the reverberation effect. Neither position alone would give you the recorded result. For the perspective obtained from the close-miking of a large orchestra, you would be required to place an ear about a foot away from each of several different locations (depending upon the number and level of mikes used) simultaneously and, if reverberation were then added to this recording, you would again be required to be simultaneously in another location much farther removed from the source. If the recording session took place in a relatively small and well-damped studio, there might be no location in the room where you would be able to hear the large amount of reverberation which was added electronically.

Of course, to duplicate the perspective of a single vocalist who has performed two or more parts (melody and harmony) by sound-on-sound methods,

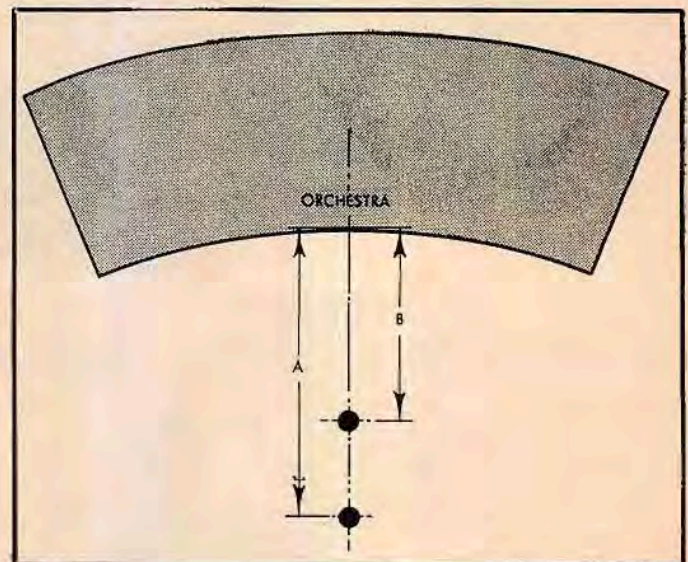


Fig. 2. Recording a large orchestra in a large, live hall with an omnidirectional microphone forces compromise with proximity effect to achieve balance.

background chorus on other tracks. One recording company actually does both with a vocalist during each recording; the vocal track exhibits a close-mike technique through part of the record, and an extreme reverberation effect (approaching echo) on the chorus parts.

Stereo has made possible the technique of alternating channels with the same material. Another form of additive rerecording familiar to most people is the well known sound-on-sound technique.

Now, for a few examples of what would be required in the way of live performance listening in order to duplicate some of the perspectives that are normally used in tape recording. To ob-

a live performance would require the services of a singer with more than one head.

These examples of some perspectives which cannot occur at a live performance, are not given to prove that the methods are bad or good. They merely show what is being done, and what *can* be done in the way of obtaining and creating recorded perspectives.

A good engineer, when provided with the necessary equipment, is capable of providing almost any kind of perspective required. The difficulty of this particular problem is that very few people are capable of defining, *in standard terminology*, the impressions which they wish to receive upon tape playback. Σ