

# 11

## Producing Dialogue

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*Dialogue* is a conversation between two or more people. Obviously, the verbal content of the conversation is essential to meaning, but nonverbal sound in speech also shapes meaning.

### INFLUENCES OF NONVERBAL SPEECH ON MEANING

Chapter 10 has several examples of how the meaning of what is said is often conveyed by the sound of *how* it is said. Other, more dialogue-related, examples follow.

#### Accent

An *accent* can tell you if a character is cultured or crude, an American from rural Minnesota or someone from England, France, or India. It can also color an entire drama. A story set in Russia depicting events that led to the 1917 Bolshevik Revolution with an all-British cast may have superb acting and dialogue, but the refined, rounded, mellifluous British sound may not be so effective as the more guttural Slavic sound and may not give the necessary edge to people and events. Shakespeare played by actors with deep southern drawls would sound unnatural. Films rerecorded from one language to another rarely sound believable.

#### Pace

The *pace* of dialogue can convey nonverbal information about the passion, urgency, or boredom of a situation.

### Influences of Nonverbal Speech on Meaning

For example:

*She:* Go away.

*He:* No.

*She:* Please.

*He:* Can't.

*She:* You must.

*He:* Uh-uh.

Certainly, there is not much verbal content here apart from the obvious. But by pacing the dialogue in different ways, meaning can be not only defined but also changed. Think of the scene played deliberately, with each line and the intervening pauses measured, as opposed to a rapid-fire delivery and no pauses between lines. The deliberately paced sound design can convey more stress or, perhaps, more inner anguish than the faster-paced version. On the other hand, the faster pace can suggest nervousness and urgency.

#### Patterns

Dialogue *patterns* are important to natural-sounding speech and believable characterization. Although dialogue patterns are inherent in the script, a writer must be equally aware of how words should sound. If a character is supposed to be highly educated, the vocabulary, sentence structure, and speech rhythms should reflect erudition. If a character is being formal, vocabulary and sentence structure should be precise, and speech rhythms should sound even and businesslike. Informality would sound looser, more relaxed, and more personal. An actor playing a nineteenth-century character should speak with a vocabulary and syntax that evokes that period to modern ears. That is, unless the character has a modern outlook and temperament, which would make the sound of contemporary vocabulary and sentence structure appropriate.

#### Emphasis

*Emphasis*—stressing a syllable or a word—is important to all speech—narration and dialogue. It often conveys the meaning of what is being said. On paper the words “How are you?” suggest concern for someone’s welfare. But often the words are used as another way of saying “Hello,” or making a perfunctory recognition with no expression of concern. Emphasis is what tells you so. Moreover, it is possible to emphasize the *how*, the *are*, or

the *you* and communicate three different meanings. The words remain the same; the aural emphasis alters the message.

Take the line, “He’d kill us if he got the chance.” If it were delivered with the emphasis on *us*—“He’d kill *us* if he got the chance”—the meaning conveyed would be defensive, that is, unless we kill him first. If the emphasis were on *kill*—“He’d *kill* us if he got the chance”—it suggests that the “us” did something to him first or that the “us” did something that would provoke him if he found it out.

#### Inflection

*Inflection*—altering the pitch or tone of the voice—can also influence verbal meaning. By raising the pitch of the voice at the end of a sentence, a declarative statement becomes a question. Put stress on it, and it becomes an exclamation. Take the sentence “My country, right or wrong.” As a declarative statement, it is a fact. As a question, it introduces skepticism or satiric bite, perhaps even anguish. As an exclamation it becomes an aggressive statement or one of pride.

“So help me God” is usually said at the end of an oath, as a declarative statement with almost equal emphasis on “help me God.” But if a pleading inflection were added to the words “help me” it would underscore the weight of responsibility now borne by the new office holder.

#### Mood

Sound affects the *mood* or feeling of words and sentences. Aside from meaning, the sound of *dine* is more refined than the sound of *eat*. If the idea is to convey an edge to the action, *eat* is the better choice. *Lounge* has a softer, more gradual sound than *bar*. *Bestial* conveys more of a sense of the word’s meaning than *barbaric* because of its harder sounds and shorter, more staccato attacks at the beginning of its two syllables.

In the lines “lurid, rapid, garish, grouped” by poet Robert Lowell and “Strong gongs growing as the guns boom far” by G. K. Chesterton, the sounds in the words not only contribute to the overall meaning but are contained in the other words to further enhance the mood of the line.

Consider the following translations of the same line from Dante’s *Purgatorio*:

“I go among these with my face down.”  
“Among these shades I go in sadness.”



The first sounds graceless and heavy-handed. The sound of the second is more emotional, rhythmic, and vivid.

## RECORDING DIALOGUE

In audio the principal challenge during production is dialogue recording. Sound effects are usually handled in postproduction; music always is. Regardless of the venue—studio or on location—or the medium—radio, television, or film—*recording dialogue that is clear, intelligible, and as noise-free as possible is the production recordist's goal.* Even when dialogue is to be ultimately recorded or rerecorded in postproduction, it is important to preserve an actor's performance on the set, if for no other reasons than for timing and interpretation. (Also see "Automated Dialogue Replacement" later in this chapter.)

## RADIO DRAMATIZATIONS

Dramatizations produced in radio today are played out mostly in commercials and other types of spot announcements. Except for some drama done on public radio and in some colleges, the days of bona fide radio drama have long since passed. What has carried over, however, are many of the microphone and production techniques that were used.

Dramatizations on radio entail creating sound to compel the listener to "see" mental images; to create a "theater of the mind." The stimuli that trigger the imagination are words, sound effects, and music, as well as the methods used to produce these elements. Generating illusions of perspective and movement begin with techniques of miking.

### Single-Microphone Technique

Using one microphone in radio dramatization involves positioning performers at the mic and having them play to it as if it were the ear of the audience. This requires selecting an appropriate microphone and properly mounting it. Creating a sense of perspective and, if necessary, movement makes the "visual" illusion effective. The technique was used in radio drama throughout its heyday, before technology made it easier to use the multimicrophone approach. With a number of mics, performers can be miked separately to allow greater sound control during recording. This has made the multimicrophone approach the technique of choice. Nevertheless, it may be useful to discuss how one microphone can be used effectively in radio dramatizations.

### Microphone Selection and Mounting

The best microphone to use for the single-mic technique is a multidirectional capacitor. Capacitors give the human voice a rich, realistic timbre. Ribbon mics are good for voice, but older models lack the high-frequency response that gives sound its lifelike quality, assuming the medium reproduces those frequencies.

As for moving-coil microphones, several models have excellent voice response, but almost all are either omnidirectional or unidirectional. If the number of performers changes within a dramatization or during a take, it is easier to set up one multidirectional microphone than to change mics every time the situation requires.

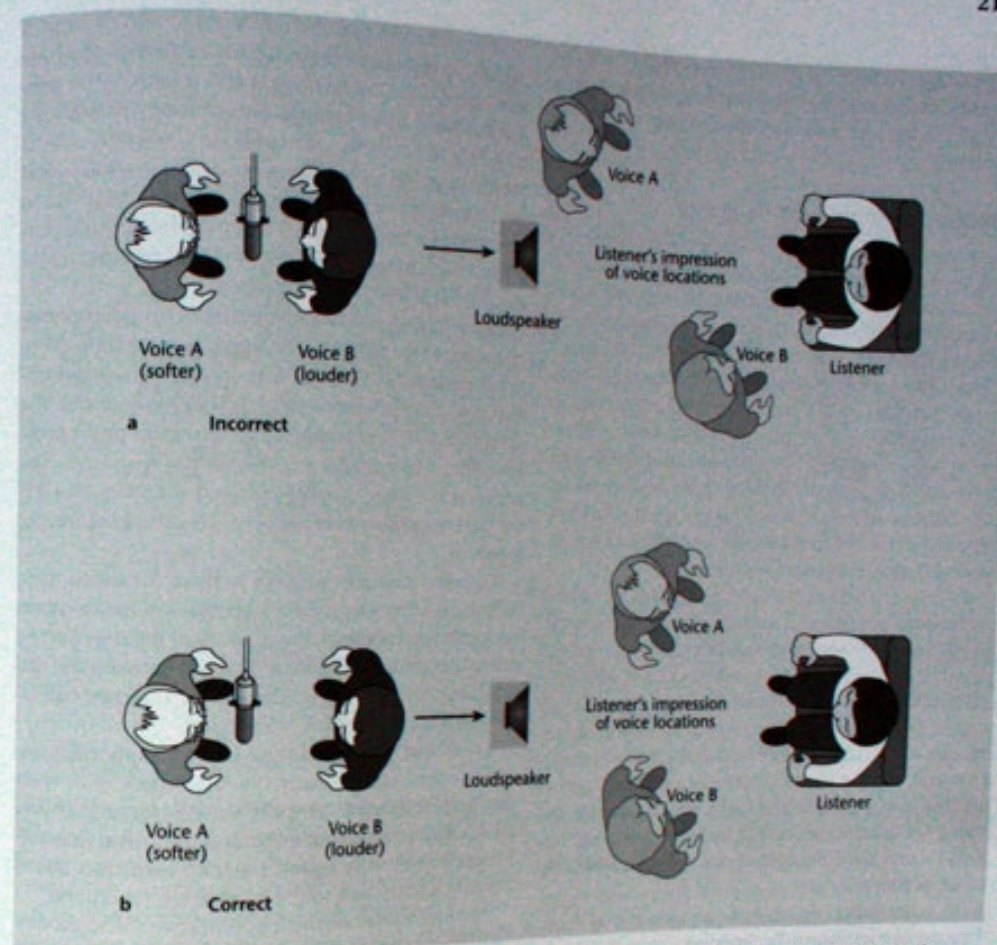
The preferred microphone mount for radio dramatizations is the boom. It gives easy access to the mic, there is no floor stand to get in the way, and, with shock mounting, there is less chance of sound conductance from movement across the studio floor.

Another advantage of the boom is that performers deliver their lines standing, which is better for breathing. It also allows some freedom of movement for performers who like to swing an arm to help their delivery, or both arms if one hand is not holding the script.

### Creating Perspective

To create perspective acoustically, performers are positioned at appropriate distances relative to the mic and to each other, as the dramatic action dictates. If an actor is close to the mic, the audience perceives the sound as near or the space as small, or both, particularly with a directional microphone. If a performer is farther from the mic, the sense of distance increases and the space becomes larger. If a man and woman are on-mic playing opposite each other in a scenario that calls for them to be equally enthusiastic, position the man farther from the microphone than the woman is to compensate for the (usually) more powerful male voice. If they are equidistant from the mic, the man will sound closer than the woman does (see Figure 11-1). The audience's perspective will be from the performer in the closer position. This assumes a relatively quiet, acoustically controlled studio. In a more open ambience, moving an actor too far from the mic to compensate for a stronger voice would also increase the level of his room tone, thereby placing him in an aural frame that is different from that of the more soft-spoken actor.

Maintaining perspective does not always mean keeping voice levels balanced. If a scene requires one character to call to another from a distance, perspective is



**11-1** Balancing two voices with different loudnesses. Positioning the stronger voice farther from the microphone keeps the voices in proper aural perspective relative to the listener. But do not position the stronger voice too far from the mic, or it could take on an ambient quality noticeably different from that of the softer voice.

created by placing on-mic the actor who is supposed to be closer and off-mic the one who is supposed to be farther away.

### Creating Movement

If movement is involved, such as someone leaving or entering a room, there are three ways to create the effect: (1) by moving from the live to the dead side of a directional microphone or vice versa, (2) by turning in place toward or away from the mic, or (3) by walking toward or away from the mic.

Moving the fader up or down—also known as a *board fade*—will also create the effect of coming or going, but not so well as having the performers do it. The difference between the two techniques is that using the fader influences not only the actor's voice level but also the room's acoustics. When a person enters or leaves a room, the space does not change; only the person's position within it changes.

Once the proper aural balances are determined, it is a good idea to mark the studio floor with tape so the performers will know exactly where to stand and how



far to move. Marking the studio floor also assists in traffic control around a microphone when several performers are in a scene and have to yield and take the on-mic position.

### Multimicrophone Technique

With multitrack recording, producing a dramatization can take advantage of all the flexibility that it affords. Performers can be miked separately to allow greater sound control during recording. Then the various tracks can be processed, edited, and mixed in postproduction. Although added sound control is an advantage of this technique, there are also disadvantages: it is more difficult to obtain natural spatial relationships and perspective between performers and the environment; it reduces the opportunity for talent to interact; and it requires the additional time and expense of a postproduction session. Today it is rare not to take some time to process a recording in postproduction, however.

Deciding whether to use the single- or multimicrophone technique in radio dramatizations depends on your aesthetic philosophy and the complexity of the script. All in all single-microphone production, although old-fashioned, has two major advantages: (1) it produces a more believable performance because the talent can interact and (2) it produces a more realistic sound shape. That said, for the sound shaping of individual performances, particularly when using effects, and for the added flexibility in production, including stereo and surround sound, the multimicrophone approach is the technique of choice.

### Stereo Microphone Technique

When stereo placement of the performers is called for, and the multimicrophone technique is employed during recording, spatial placement in the stereo frame is done in postproduction through panning. If the "single" microphone approach is used, the performers must be stereo-miked during recording, otherwise it is difficult to position them in stereo space in postproduction.

A number of the production techniques applicable to monaural radio dramatizations also apply to stereo, but stereo does bring its own set of challenges, not the least of which is *mono compatibility*. Although stereo has been around for many years, and AM and FM radio transmit in stereo, much of the audience still listens in mono, particularly to AM radio. This means that material recorded in stereo must be capable of also being reproduced in mono.

Stereo requires two discrete signals, A (left) and B (right). To reproduce these signals in mono, they are summed:  $A + B$ . *Discrete stereo* is also referred to as *sum-and-difference stereo* because one channel is summed ( $A + B$ ), and the other channel is subtracted ( $A - B$ ). If the stereo signals are in phase when they are added, level can increase 3 to 6 dB; if the signals are out of phase in stereo, they cancel in mono. It is therefore critical during recording to make sure that problems with stereo-to-mono compatibility are anticipated.

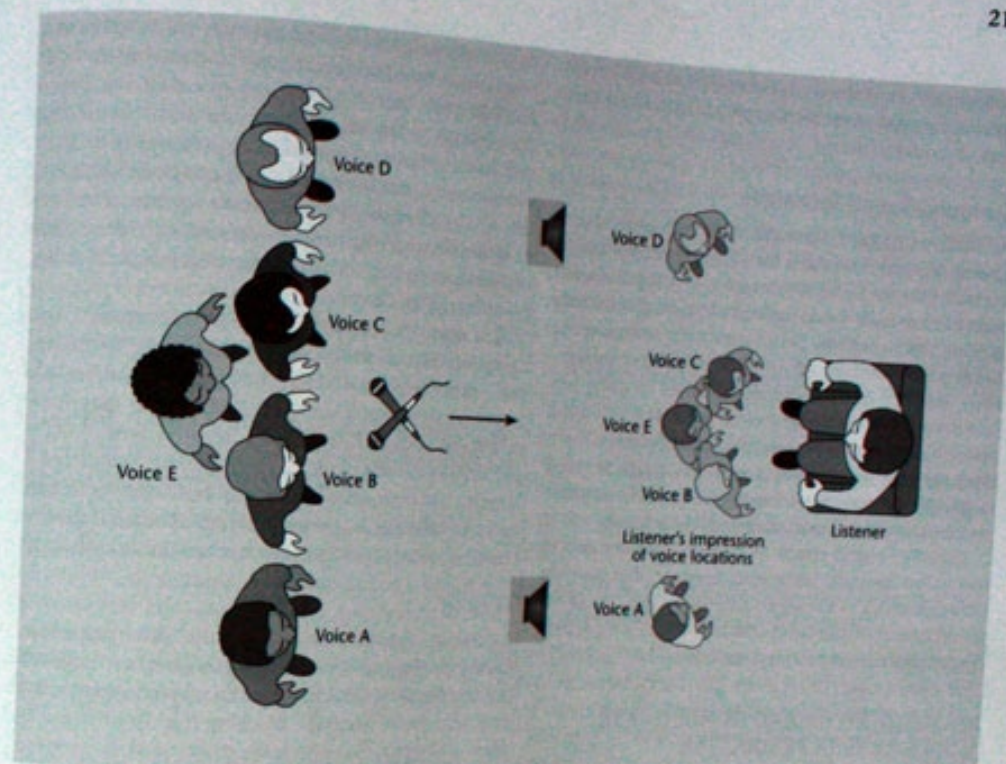
Stereo miking uses two microphones (or microphone capsules) to feed each discrete signal to a separate channel. Sound reaches the mics with intensity and time differences. The difference in arrival time between the signals reaching the two microphones creates phase problems later when combining the signals to mono. The narrower the angle or space between the mics, the less the difference in arrival time between the signals reaching them.

There are a number of ways to mike for stereo. One technique—coincident miking—ensures stereo-to-mono compatibility; another—near-coincident miking—can be mono-compatible if the angle or space between the microphones is not too wide. Coincident and near-coincident arrays are also called *X-Y miking*.

**Coincident miking** positions two microphones, usually directional, in virtually the same space with their diaphragms located vertically on the same axis (see 13-38). This arrangement minimizes the arrival time difference between the signals reaching each mic. Stereo imaging is sharp, and sound localization is accurate.

**Near-coincident miking** positions two microphones, usually directional, horizontally on the same plane, angled a few inches apart. They may be spaced or crossed (see 13-39). The wider angle or space between the mics adds more depth and warmth to the sound, but stereo imaging is not as sharp as it is with the coincident array. As a guideline in radio dramatizations, keep the angle or space between the mics to 90 degrees or less. At more than 90 degrees, not only could mono compatibility be a problem, but the stereo image would be more diffuse.

In stereo miking, the lateral imaging of the stereo field is also important. If the angle between the microphones is too narrow, sound will be concentrated toward the center (between two loudspeakers). If the angle between the mics is too wide, sound will be concentrated to the left and right, with little sound coming from the center, a condition referred to as "hole in the middle." The angle between the microphones is contingent on the width of the sound source: the wider the source, the wider the



11-2 Effects of stereo-miking technique on listener perception.

angle; the narrower the source, the narrower the angle. (If a sound source is too wide for the coincident and near-coincident arrays, as may be the case with orchestral ensembles in concert halls, spaced mics are employed—see Chapter 13.)

In stereo radio dramatizations, performers are usually not widely spaced at a single microphone. The center of the stereo space is where the main action is likely to take place. Too much "ping-pong" of sound left and right can create dislocation of the sound sources, confusing the listener. If action is played left or right of center, it is usually not too wide afield.

Assuming that there are no acute acoustic problems, the inclusive angle between the microphones should be between 60 and 90 degrees. At the least that is a good starting point; further positioning depends on the number of people in a scene and the size of the aural "set."

Using the multimicrophone approach, on-mic spacing is not a factor. Stereo imaging is handled in postproduction.

### Perspective

When positioning performers take care to ensure that they are in the same positions and perspectives as the associated voices. If a script calls for conversation among performers in various parts of a room, they cannot be grouped around the mics—some closer, some farther—in stereo as they would be in mono. To maintain the stereo perspective, each actor should be in about the same position, relative to the others, as he or she would be if the situation were real (see 11-2).

More studio space is required for stereo radio dramatizations than for mono because the dead sides of the mics cannot be used for approaches to and recedes from the mics. To produce the illusion of someone walking from left to right, a performer cannot simply walk in a straight line across the stereo pickup pattern. If that happened, the sound at the center would be disproportionately louder than the sound at the left and right, and the changes in level would be too abrupt. To create a more realistic effect, a performer has to pass the microphones



in a semicircle. Also, studio acoustics should be dry because they are much more apparent with stereo than they are with mono.

### Surround-Sound Technique

As noted in Chapter 9, surround sound adds greater front-to-rear depth and side/rear breadth to aural imaging. A main difference—and advantage—in using surround sound rather than stereo in dramatic radio productions is being able to position performers much as they would be on a stage and recording them from those perspectives. This can be done during recording by using surround-sound microphony (see Chapter 4) or by using conventional multitrack-recording techniques and handling the surround-sound placements through panning in postproduction. See Chapters 13 and 19 for more-detailed coverage of surround-sound techniques.

Handling sound effects in surround can also add to the spatial imaging. Make sure, however, that between the positioning of the actors and the positioning of the sound effects in surround that the overall perspectives do not confuse the listening audience.

### DIALOGUE RECORDING IN MULTI- AND SINGLE-CAMERA PRODUCTION

Recording dialogue that is clear, intelligible, and as noise-free as possible, in the studio or in the field, is the responsibility of the production recordist. *Production recording* preserves the sonic record of a production, regardless of whether the dialogue is to be rerecorded in postproduction. Many things happen in life that are difficult to remember, much less re-create—the precise rhythmic nuance of dialogue, the unplanned cough or sputter that furnished a perfect dramatic highlight, the train that happened to go by at exactly the right moment. The live situation is more real and more delicate than the re-created one.

Capturing dialogue on the set in multicamera or single-camera production usually means employing a boom, body-mounted wireless, or plant microphone, or a combination of the three. The type of mic generally preferred is the capacitor—mini-mic and shotgun.

#### Using the Boom

The important decisions in using a boom are logistical and aesthetic. They involve (1) plotting the best microphone positions and angles for each scene in a produc-

tion to ensure optimal aural balance, (2) keeping the boom out of the lighting pattern so that its shadow does not fall across the set, (3) making sure that the boom does not get in the way of the performers, (4) making sure that the boom can move freely, (5) trying to keep cameras and boom out of the audience's line-of-sight as much as possible, and (6) positioning the boom at mic-to-source distances that are relative to the fields of view of the shots to help maintain acoustic perspective between sound and picture.

It is worth noting that because of the logistical and operational concerns associated with using the boom, many directors use the wireless body mic instead, regardless of whatever sonic advantages the boom may have in a given situation (see "Using Wireless Body Microphones" later in this chapter). Their thinking is that easier is better and more economical; any aesthetic shortcomings can be offset in postproduction. Reality notwithstanding, always try to take the best aesthetic approach.

#### Blocking

In dramatic productions miking decisions are made during the preproduction planning stages when you work out the **blocking**—the movements of performers, cameras, and sound boom(s). Blocking begins with a *floor plan*—a diagram, drawn to scale, showing where scenery, cameras, microphones, and performers will be positioned.

If there is limited physical movement by the performers and the set is small, one boom microphone can usually handle the action, provided the performers are not more than 6 to 9 feet from the mic when they speak. If physical movement is active or the set is large, or both, two booms and sometimes wireless body mics are used. In multicamera staged productions, two booms are standard. When using two booms, one is usually positioned to cover the front and front-left of a set (looking into the set); the other covers the rear and rear-right.

#### Perambulator Boom

In studios it is also necessary to think about the boom mount when blocking. The *perambulator boom*, for instance, is large, bulky, and difficult to move quickly over extended distances, especially when cameras, cables, and set furniture are in the way (see 4-62). It is easier to leave the boom mount in place and swing, extend, or retract the boom arm to cover the action. If the boom has to be moved, use boom movers because it is time-consuming and inconvenient to have the operator come down from the boom seat each time the boom has to be repositioned.

An evident but vital concern is making sure the boom mic does not get into the picture. If it is positioned out-of-shot in a close-up, it would obviously show up in a longer shot if not repositioned. The boom should also be out of an audience's line-of-sight as much as possible. Although TV studios have TV monitors for the audience, it is to the program's advantage to make the audience feel like part of the event, especially with comedy.

If the boom stays just above (or below) the frame line, the acoustic mic-to-source distance should be proportionate to the size of the shot, matching the aural and visual space, which is one of the boom's main aesthetic advantages. Here are a few guidelines to using the boom:

- ▶ Position the boom above and angled in front of the performer's mouth. Remember: sound comes from the mouth, not from the top of the head.
- ▶ Establish mic-to-source operating distance by having the performer raise an arm at a 45-degree angle toward the tip of the microphone and extending a finger; the finger should just touch the mic. Appropriate working distances can be planned from there. For example, if the mic-to-source distance in a close-up is 3 feet, in a medium shot it could be about 6 feet, and in a long shot up to 9 feet.
- ▶ Directional shotgun microphones compress distance between background and foreground. Aim the microphone directly at the performer(s) so as not to increase background sound.
- ▶ Hypercardioid shotgun microphones have considerable rear sensitivity, so avoid pointing the back end toward a source of unwanted noise such as ventilators, parabolic lights, and so on.
- ▶ Capacitor shotguns are high-output, high-sensitivity instruments and therefore can be used at somewhat longer mic-to-source distances than moving-coil mics without degrading sound quality. Also, high-frequency response in moving-coil mics falls off with increased mic-to-source distance.
- ▶ To facilitate learning the shot changes in a multicamera production, provide each boom operator with cue sheets and, if possible, place a TV monitor on the boom (assuming a perambulator boom) or near it. Also provide headphones that feed the program sound to one ear and the director's cues to the other ear. Boom movers should also have access to cue sheets. Rehearse each shot so that the exact mic-to-source distances are established.

▶ Rehearse all boom operations. Even the slightest movements such as turning the head while talking or bending down can require complicated boom movements. For example, as a head turns while talking, the boom has to be panned and the mic rotated at the same time.

▶ If a performer has a tendency to do "head whips" while interacting with other guests or because dialogue interaction calls for it, play the mic in front, keeping movement to a minimum so the speech sound and ambience are consistent.

▶ Have preparatory discussions with the sound recordist or mixer.

▶ Learn about lighting. A boom operator has to know what side of a set to work from so that the boom does not throw a shadow. Outside it is necessary to be opposite the sun side so that the boom shadow falls away from the performer.

▶ Anticipate the performer's movements so that the boom leads, rather than follows, the talent.

▶ Position the boom's base toward the front of the set, not to the side. From the side it is difficult to judge the microphone's height in relation to the cameras because cameras are usually placed in an arc around the front of the set.

Due to the size of perambulator booms, they may be unwieldy in small sets or difficult to maneuver when relatively frequent repositioning is called for, especially if there is no boom mover. Two alternatives are the tripod (giraffe) boom and the fishpole boom.

#### Tripod (Giraffe) Boom

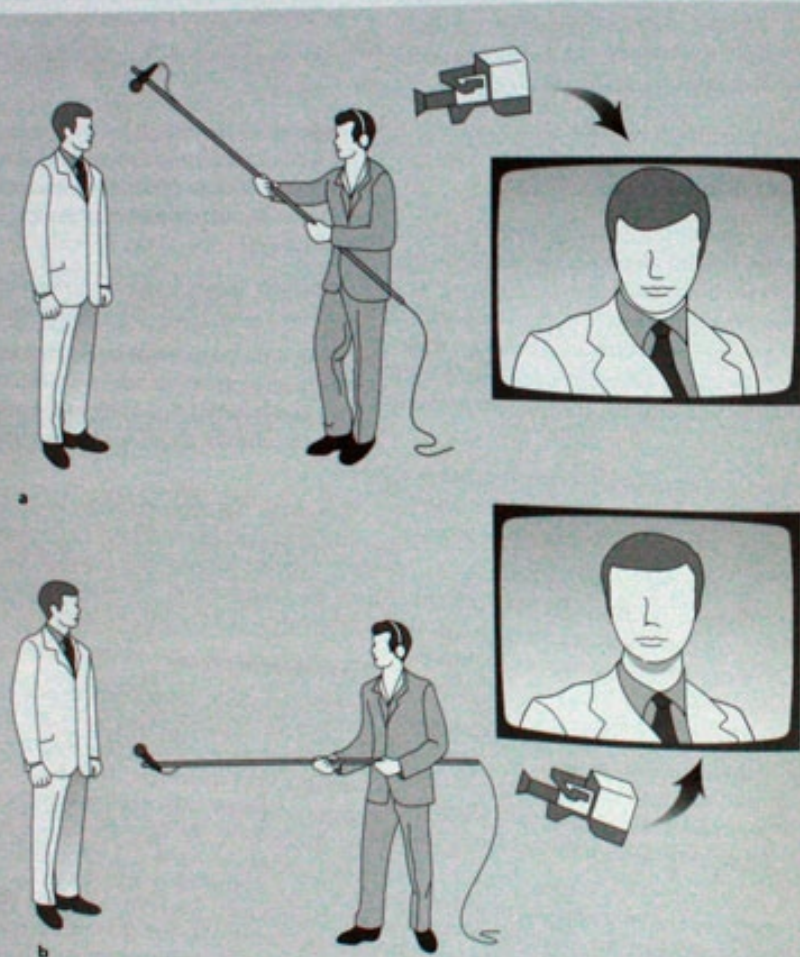
The *tripod*, or *giraffe*, boom is smaller and easier to operate than a perambulator boom (see 4-63). But if it has to be adjusted or moved during shooting, it has more disadvantages than advantages. First, because it is lightweight and therefore subject to shock and vibration likely to be picked up by the microphone, the tripod boom requires a lighter mic and a very good shock mount. Second, it has a limited boom arm reach. Third, once the boom arm has been extended to a particular length, it cannot be extended farther or retracted without interrupting shooting. To change mic-to-source distance during shooting, the entire tripod has to be rolled in or rolled out, and this movement could be audible. Fourth, the height extension is quite limited, presenting the dangers of the boom shadow.



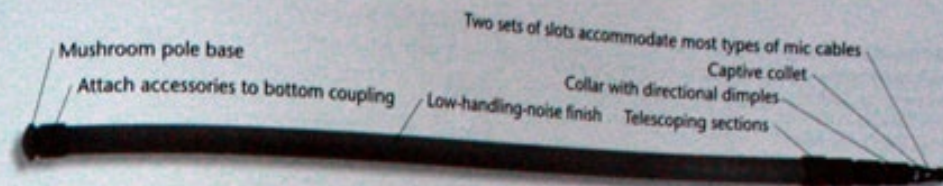
### Fishpole Boom

The *fishpole boom* is used in-studio when larger booms cannot negotiate small spaces, but mostly it is the microphone mount of choice in field production. It is more mobile, easier to manage, takes up less space, and requires fewer crew than wheeled booms. A fishpole is handheld and, therefore, can be moved around a set with relative ease (see 11-3).

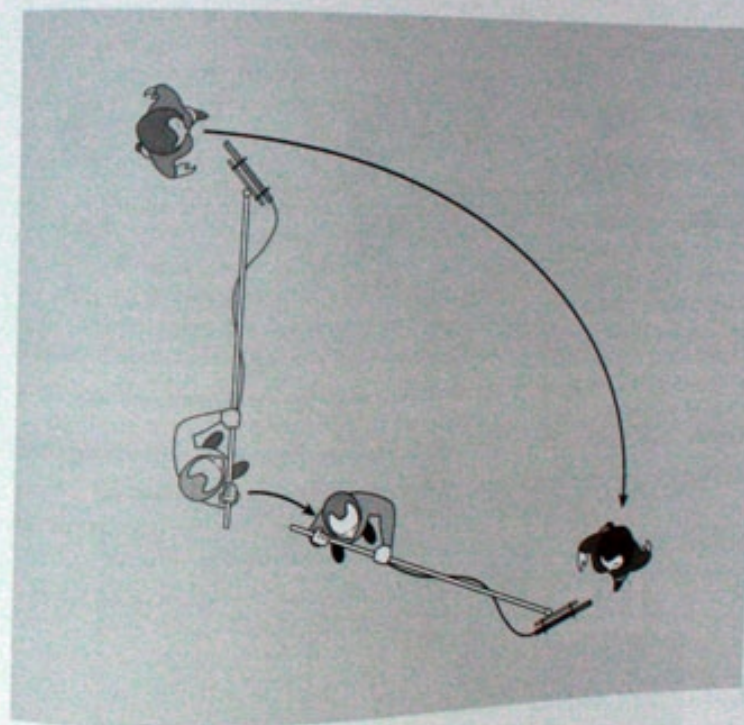
Fishpole booms come in various lengths, and most of them have a telescoping tube that can be extended or retracted (see 11-4). Shorter fishpoles can extend from 16 inches out to more than 6 feet and weigh as little as 11 ounces; medium-sized fishpoles can extend from 23 inches out to 8 feet and weigh about 14 ounces; longer fishpoles can extend from a little less than 3 feet out to more than 16 feet and weigh a little more than a pound.



**11-3** Using a fishpole with a directional microphone pointed at the performer's mouth from (a) above or (b) below. The mic's position depends on the focal length and angle of the shot. Better sound is usually obtained by positioning the mic above the performer because sound rises and the bounce from the floor or ground can brighten the pickup.



**11-4** Fishpole boom and its features.



**11-5** Boom leading subject. Subject movement requires the boom to lead the subject through a space.

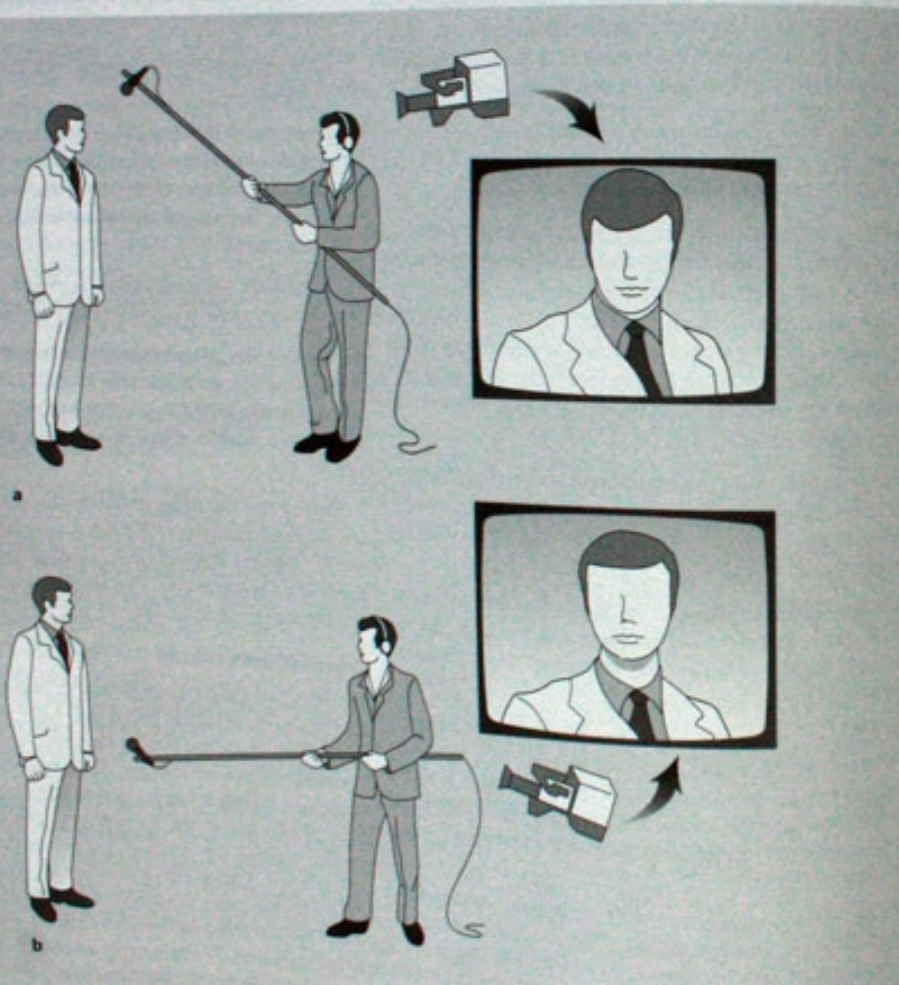
- The fishpole boom does present a few problems. It gets heavy if it has to be carried about the set or held for any length of time, particularly if the mic is a heavy one. It can be difficult to control precisely, particularly in wider shots when it has to be held high. Furthermore, handling noises can be heard if the fishpole operator is not careful.
- The following are some preparational and operational tips for using the fishpole boom, particularly in field production (see 11-5–11-7):
- Operating a fishpole boom is intense and exhausting work. Be well rested and physically conditioned. Build endurance by holding a fishpole for progressively longer periods of time. If one is not available, practice with a bucket or weights at the end of a broom handle.
  - Wear clothing that is comfortable and relatively loose-fitting. Dark clothes help avoid reflections. Because fishpole miking often involves being on your feet for extended periods of time plus a lot of walking and running, forward and backward, sneakers with thick soles are comfortable and quiet.
  - It is politic to remember that in field production the boom operator is the sound department's eyes and ears on the set.



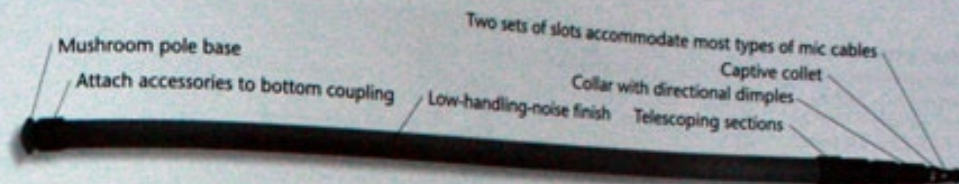
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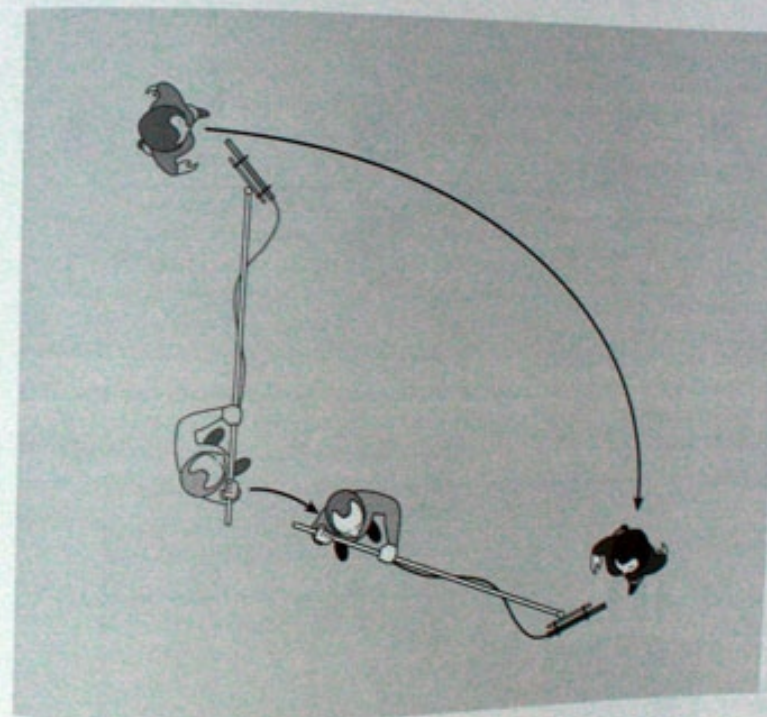
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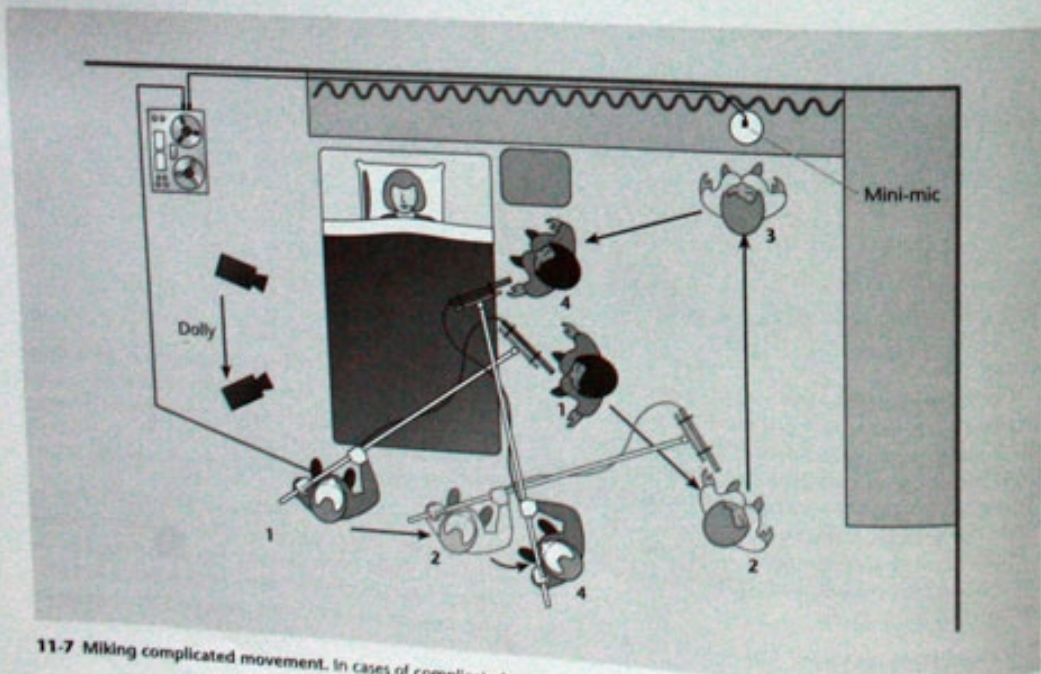
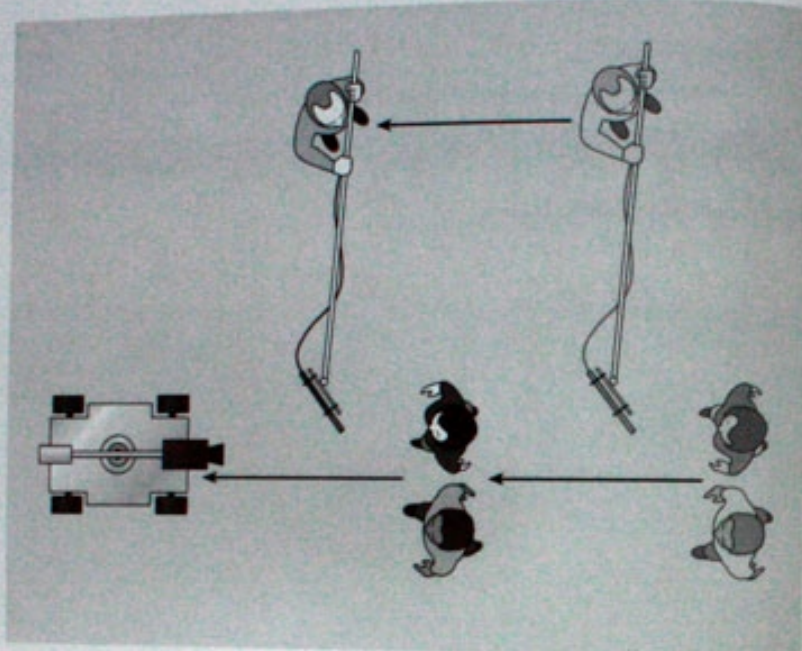
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► Operating a fishpole boom is intense and exhausting work. Be well rested and physically conditioned. Build endurance by holding a fishpole for progressively longer periods of time. If one is not available, practice with a bucket or weights at the end of a broom handle.

► Wear clothing that is comfortable and relatively loose-fitting. Dark clothes help avoid reflections. Because fishpole miking often involves being on your feet for extended periods of time plus a lot of walking and running, forward and backward, sneakers with thick soles are comfortable and quiet.



**11-6 Moving the boom for broad movements.** For broad movements, such as characters moving in front of a dollying camera, the boom operator has to walk backward or sideways when leading.



**11-7 Miking complicated movement.** In cases of complicated movement, a subject may need multiple mic setups.

► Know the script. If one is not available or if last-minute copy changes have been made, learn the body gestures of the performers just before they speak to help anticipate boom movements.

► Always use a windscreen, especially with directional capacitor mics, which are particularly sensitive to even minute air movement. Barrier, mesh-style windscreens are quite effective (see 4-53b), especially with a windjammer (see 4-53d).

► Always use a shock mount. High-quality microphones, particularly capacitors with high sensitivity, are apt to pick up sound conductance through the metal tube. It is a good idea to tape foam rubber around the tube a few inches above the handgrip and below the microphone mount to inhibit sound conductance.

► Use high-quality headphones when operating a fishpole boom. Except for the recordist, who may be some distance away, there is no other way to tell what sounds are being picked up or how they are balanced, particularly in relation to the foreground and background sounds.

► Be sure that there is enough cable and cleared space on the floor if the fishpole mic must move with the performer(s). To avoid the cable problem altogether, and if it is feasible, boom-mount a wireless mic (see 11-8).

► Remove all jewelry before recording and wear gloves to help dampen handling noise.

► If the fishpole has to be held for any length of time, secure a flag holder around the waist and sit the pole end in its pocket. Some longer fishpoles come with a handle grip on the pole to help support it against the body.

The advantage of the boom-mounted microphone on location, as in the studio, is that by varying its distance

to the sound source you can make it reflect the focal length of shots. This advantage applies especially in the field, where there is more likely to be background sound whose relationship to the principal sound source often helps establish the overall sonic environment. This technique is called *perspective miking* because it establishes audio viewpoint. Moreover, it helps convey the mood and style of a production.

If a scene takes place in a seedy hotel room, for example, aiming the microphone at a slight angle to the performer's mouth so that it also picks up more room sound will "cheapen" the sound, thereby better articulating the visual atmosphere. If a scene is to convey an anticipatory atmosphere, widening mic-to-source distance even in a tight shot creates an open sound that encompasses background sounds such as a clock ticking, a board creaking, a drink being poured, an owl hooting, a siren screaming, and so on. (Of course, both of these examples require the director's OK.)

Fishpole booms also permit positional changes to compensate for problems with perspective. In handling a strong voice against a weak one, the mic can be placed closer to the weak voice but aimed at the strong voice, evening out the overall level. In addition to perspective and flexibility, overhead miking in general tends to provide a crisp, natural sound compared with body mics, which are often sterile in texture.

### Perspective

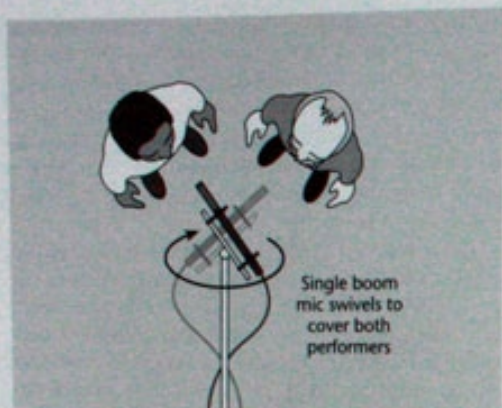
The challenge in operating any boom is to maintain aural perspective while simultaneously keeping the boom mic out of the picture and keeping the performers in the mic's pickup pattern. To create a realistic setting, sound and picture must work together; the aural and visual perspectives should match. If you see two performers talking in the same plane, you should hear them at relatively the same loudness; if you see one performer close up engaged in dialogue with another actor farther away, the performer who is closer should sound louder.

**Performers in the Same Plane** The easiest way to pick up performers talking in the same plane and to maintain their aural relationship is to position the microphone equidistant between them and close enough so that they are on-mic (see 11-9). If one performer walks a short distance away, blocking will have determined either how far the boom can follow, keeping the performer on-mic yet remaining close enough to get back in time to cover the other performer, or whether a second boom should be used (see 11-10 and 11-11).

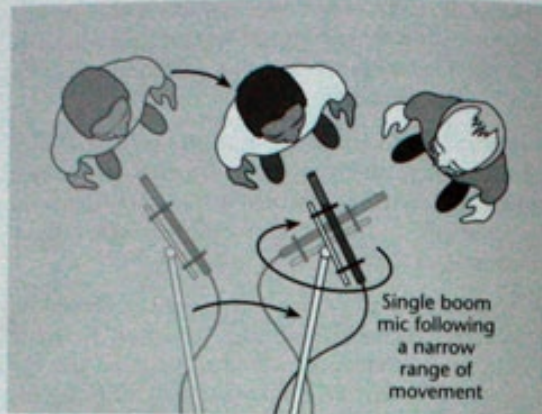


**11-8 Wireless boom with mounted transmitter.**

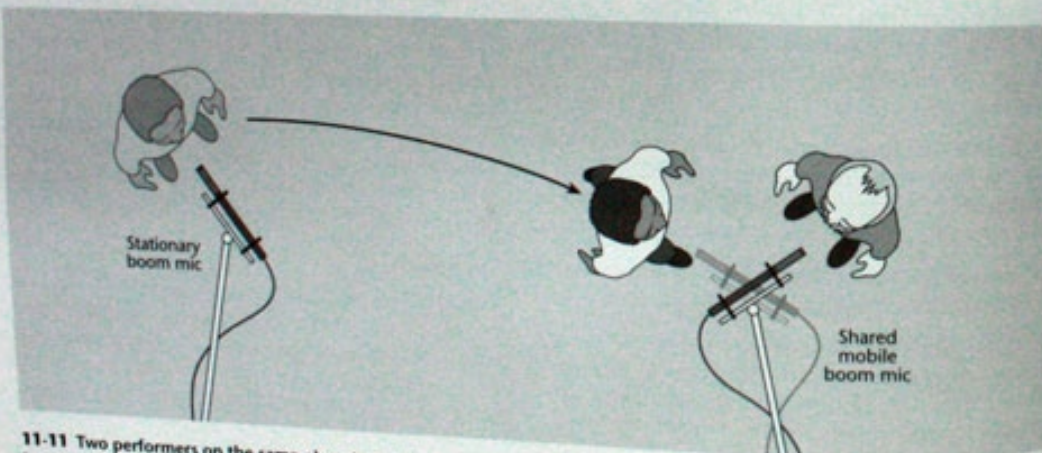




**11-9** Two performers on the same plane. The easiest way to boom-mic them is to place the microphone equidistant between them and swivel it back and forth.



**11-10** Two performers on the same plane but with some movement. One boom mic can be used when there is some movement between performers on the same plane and the distances between them are not wide.



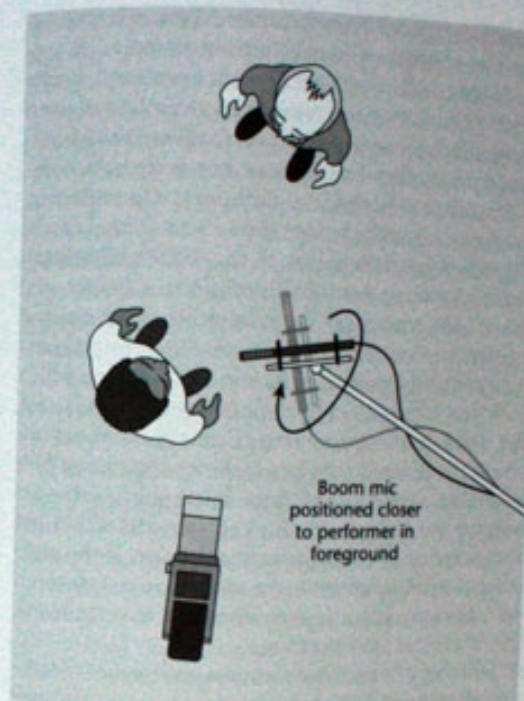
**11-11** Two performers on the same plane but with significant movement. Two boom mics may be needed when blocking calls for more-dynamic movement, as it often does.

**Performers in Different Planes** During a scene it is typical for shots to change from, say, a medium shot of a group with performer A talking, to a close-up of performer A, to a close-up of performer B responding, to another medium shot of the group, to a close-up of performer C talking, and so on. To keep visual and aural perspective consistent, the sound in the medium shot should not be quite as loud as the sound in the close-up.

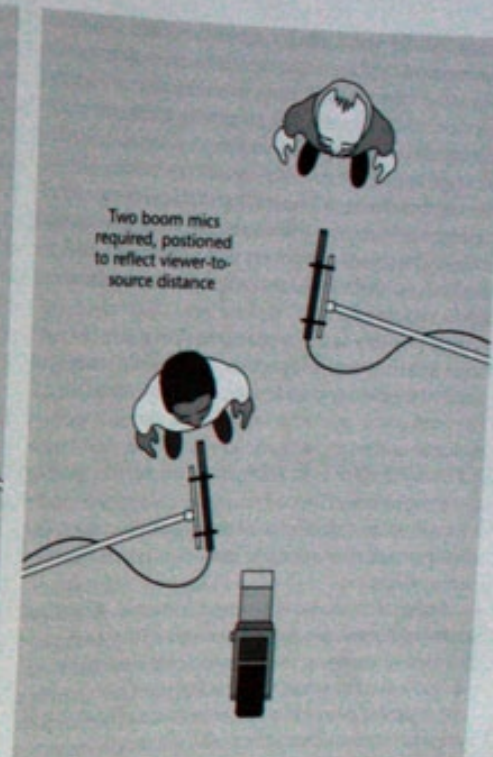
In a medium shot compared with a close-up, for example, the boom has to be higher and therefore farther from the actors. In a long shot compared with a medium

shot, the mic has to be higher and farther still. The aural difference in the mic-to-source distance, reflected by the acoustic change in the loudness level and the proportion of direct to indirect waves, should match the visual difference in the audience-to-source distance.

Regardless of the visual perspective, however, the audience must hear the performers clearly. Someone close up should sound more present than someone farther away, but only to a certain extent. A performer in a close-up shot should not sound "on top of the audience," and the audience should not have to strain to hear a per-



**11-12** Two performers on different planes and close enough to be covered by one boom. The microphone should be placed between the performers, but mic-to-source distance should reflect viewer-to-source distance. In other words, the person who looks closer should be louder.



**11-13** Two performers on different planes and too far apart to be covered by one boom. Two booms should be used. To some extent mic-to-source distance should complement camera-to-source distance.

former in a long shot. The mic also has to be close enough to a performer so that it does not pick up too much ambience. You have to cheat a bit with mic placement to reduce the unwanted reflections so that the difference in loudness levels is obvious but not disconcerting.

Suppose a scene calls for two performers to talk several feet apart. First, the distance between them has to be within the microphone's range. Second, the mic should be between them but closer to the performer in the foreground (see 11-12). Third, if further changes in the loudness level are necessary, the range of the boom arm should be increased to get the mic closer or the performers' positions should be changed. If the performers are too far apart to cover with one boom, use two (see 11-13). Remember, within the same scene and locale, differences in loudness levels should be apparent but not marked. Don't worry about the slight discrepancies between the visual and the aural perspectives. If the audio sounds realistic enough, the psychological effect of the

picture's perspective should make up for the difference between the two.

**Adjusting Microphone Levels at the Console** Another way to change the aural perspective is to use the fader; increasing loudness brings sound closer, and decreasing it moves sound farther away. Unless loudness changes are minor, this technique is not recommended. Using the fader to make level adjustments that are obvious not only affects loudness but changes ambient relationships as well. Remember: the relationship of actors on a set may change, but the space itself does not.

### Using Wireless Body Microphones

Most audio people agree that if a wired microphone can do the job, it is preferable to a wireless mic because it is



more reliable, less subject to interference and noise from motors and cabling, and not vulnerable to dropout. On the other hand, many directors prefer the wireless mic because it liberates the performer from being tethered to a microphone cord. This has been a particular blessing in staged productions where actors are mobile. The advantages of the body mic are that dialogue is clear, intelligible, and present, with a minimum of background sound. The disadvantages are that sonic perspective, regardless of a shot's focal length, is the same and the sound tends to be sterile.

It is possible to compensate for these drawbacks to some extent. There are two basic types of mini-mics used for body miking: proximity-prone and transparent. *Proximity-prone mini-mics* tend to add presence to close dialogue and reject background sound. *Transparent mini-mics* have a more open and natural sound; they pick up more ambience. Their advantage is that sound can be blended more naturally with boom and plant mics. The disadvantage of transparent mini-mics is that they pass more ambience.

Body mics are usually omnidirectional; directional mini-mics have not proved practical. They have to be pointed precisely in the direction of the sound, which, in body-miking actors or in using plant mics, is often not effective. Also remember that sound-canceling ports are what make a mic directional. Clothes or mounting tape could block some of the ports, thereby degrading pickup.

When using a wireless body mic, consider all of the following: aural perspective, microphone placement, number of mics in use at the same time, and sound levels.

### Perspective

The main sonic difference between a body-mounted wireless mic and a boom mic is in creating aural perspective. Remember, with a boom, mic-to-source distance is adjusted with the shot, thereby automatically matching aural/visual perspective (at least in theory). When a wireless mic is attached to the body, mic-to-source distance is close and never varies, regardless of the shot's focal length, which means that aural perspective must be adjusted in postproduction.

### Placement

When body-mounting a wireless microphone for drama, it obviously must be hidden, so the type of fabric and clothing become important factors in deciding what mic to use and where to place it. For this reason a sound designer should make it a point before miking to consult

the person responsible for wardrobe. Remember that cotton does not make as much rustling sound as do synthetic fabrics such as polyester, rayon, nylon, and dacron. Synthetic fabrics are also more likely to build static electricity, which creates interference, than are wool, suede, cotton, and leather. Leather does, however, make noise.

The design of performers' clothing is also important. A microphone can be hidden inside a tie, in the seam of a shirt or blouse, in a pocket, in the collar of a jacket or turtleneck sweater, behind a scarf, under a bodice, and so on. Certain mics are less susceptible than others to interference from such noises as rustling, jostling, and static electricity; you have to test to determine which are which. Obviously, a microphone with a windscreen and shock absorber is better than a mic without one or both, but a windscreen also makes the mic more difficult to hide. Tying a knot in the microphone cable underneath the head of the mic can sometimes, but not always, reduce or eliminate clothing noise. If the proximity of the microphone to the mouth creates problems with sibilance, popping, and *nose blast*, invert the mic (so long as it is omnidirectional).

Clothing style also affects where a mic can be hidden—costumes from different periods and cultures pose different challenges. Hiding a mic on a performer playing an eighteenth-century Austrian prince clothed from neck to ankle in tight-fitting raiment presents one type of problem; hiding a mic on a woman in a low-cut, strapless dress presents another. Here, again, the person handling wardrobe can help. Maybe a pocket for the microphone can be sewn underneath the prince's vest; the bodice of the dress can be tubed and the mic placed inside. It is, of course, easier to hide a microphone in loose-fitting clothes than in tight-fitting ones. Loose-fitting garments also reduce the chance of picking up rustling sounds.

If possible, it is best to have the microphone in the open. Try to mount it in the shadow area of a coat lapel, sew it to the material, or stick it through material to look like a button, tie clasp, or brooch. Use mini-mics that are available in black, which is easier to conceal than gray or shiny metal.

An externally mounted mini-mic can be made inconspicuous by camouflaging it to match wardrobe. Use a marking pen to color small strips of tape or foam windcreens, or both, which are then attached to the mic and clasp, thereby subduing their appearance. An alternative is to use small patches of felt or cloth to cover the mic.

Two types of clothing noise often encountered are contact and acoustic. Contact clothing noise is caused by a garment flapping into or rubbing across the mic

capsule. The solution is to carefully immobilize all clothing that may create this problem by taping down everything on either side of the mic. Try sandwiching the mic between two sticky triangles of tape (formed by folding a strip of tape like a flag, sticky side out). Because contact noise can also be caused when clothing rubs against the mic cable, form a loop near the mic for strain relief, then apply a few lengths of tape along the cable. Try double-faced tape or sticky triangles to immobilize clothing and keep it from rubbing. Another adhesive is the type of caulk used as a weather seal for windows. It bonds to fabric and dampens induced noises from the fabric and cable. Avoid using too much damping material, however; extra material usually means added noise.

Clothing rubbing against itself generates noise; treating the clothing with static guard may solve the problem. A light spray of water can soften starched fabrics. Because synthetic fabrics are much noisier than natural fibers, they should be avoided whenever possible.

It is important never to allow the mic line and the antenna to cross when rigging a wireless body mic, and also to keep the antenna rigid and not looped over itself. A good way to keep the antenna rigid is to affix a rubber band to the tip and then safety-pin the rubber band to the clothing. If the antenna has to run in a direction other than straight up and down or to the side, invert the transmitter pack and let the mic cable, rather than the antenna, loop. Check the performer to make sure that the mic and cable are secure—tape tends to loosen from moisture, and costumes tend to shift from movement—but be careful not to do this too often; many actors are uncomfortable wearing wireless mics, or do not like to be bothered with adjustments, or both. Waterproof sealants and sweat-resistant mics can minimize the moisture problems of loosening tape and degraded transmission.

All of this is well and good, but what can you do when the costume, such as a man's bathing suit or chain mail on a knight, makes it difficult to use a body mic? In the case of the bathing suit, cooperation may be needed from the hairdresser: with skill, a wireless microphone can be hidden in the hair; sound does rise and the body does resonate. For female voices mic placement toward the front hairline is better for their high-frequency response. For the male voice, placing the mic behind the ear or over the ear, attached to a specially made ear clip, is better for low-end pickup. For wigs and hair pieces, there are toupee clips to which a mic can be attached. Avoid placing the mic under the gauze of a wig, however, because of head sweat and reduced high-frequency

response. The chain mail, on the other hand, may be too noisy for any successful body miking, in which case either take a more conventional miking approach or record the dialogue in postproduction.

Still another reason for working with wardrobe is to arrange with the costumer when to mount the body mic on the performer. The best time is usually when the performer is dressing at the start of the production day, even if the microphone will not be needed right away. By mounting the mic before production starts, the performer has more time to get used to it, and shooting does not have to be interrupted to put it in place when it is needed. Moreover, a performer has a great deal to think about, and disrupting concentration to body-mount a microphone is not a good idea.

### Using Two or More Wireless Microphones

The use of two or more wireless microphone systems in the same immediate area requires that they be on different and, preferably, widely separated frequencies to avoid interference. The wireless systems and microphones should be of similar make and model to ensure sonic consistency. If this is not possible and only different systems and mics are available, each performer should be given the same make and model to use throughout production so at least the individual's sound is uniform.

An ever-present problem with body mics is noise, not only from fabric but also from props in a pocket that may jingle or rustle, such as coins, keys, or paper. For example, suppose two (or more) actors using wireless mics are exchanging dialogue at relatively close proximity. Actor A is nervously jangling coins, and the sound is interfering with the pickup of his dialogue. Assuming the pocket containing the coins is closer to the body mic than it is to the mouth, actor A's dialogue probably is also being picked up by actor B's mic, but with the sound of the coins not as loud. In postproduction the recording from actor B's microphone can be used in place of the recording from actor A's mic. This enables continued use of the wireless systems, which may be desirable for logistical or other reasons. This technique also helps solve problems of unwanted or unintelligible overlapping dialogue.

### Controlling Levels

A frequent problem in recording dialogue is trying to maintain suitable levels when performers are speaking at different and varying loudnesses. If sound is too loud, at different and varying loudnesses. If sound is too quiet, level is "in the red"; if sound is too quiet, level is "in the mud." Controlling levels both to avoid distortion, par-



ticularly with digital sound, and to keep sound above the noise floor yet still preserve the relative dynamics of the performers is handled in different ways, depending on the miking.

Suppose that in a scene a distraught man is alternately sobbing and shouting at a woman, who is responding in a quiet, controlled voice, trying to calm him. In such a scene, the level changes would be wide and acute and difficult to ride. Putting a limiter on the sound is not always preferred or recommended because it can reduce sound quality. Nor may it be possible through blocking to place the microphones properly to compensate for the widely fluctuating levels. And it is imprudent to depend completely on postproduction to fix problems that occur in sound recording during production. By then the sound may be beyond repair because either it is distorted or the signal-to-noise ratio is unacceptable. Thus, to handle the widely varying sound levels, either boom or body mics may be employed.

When using the boom, recordists in a situation like this may set the level on the loudest sound emitted, in this case the man's shouts. If the shouts are set at, say, zero level (100 percent of modulation), it ensures that, at worst, the peaks will only momentarily get into the red. This makes riding levels less critical in situations where the dynamic range is wide and changes quickly, and it keeps both dialogue and ambience in perspective. Because there is no headroom with digital sound, it may be necessary to set an appropriate limit on the audio level. Or, as was suggested earlier in this chapter, the mic can be placed closer to the weaker voice but aimed at the strong voice, evening out the overall level.

In terms of perspective, by setting a maximum loudness level, the woman's level will be quite a bit lower than the man's because she has a less powerful voice and is speaking quietly. But increasing her loudness level during the quiet interchanges will also increase her ambience disproportionately to the man's. This creates different background noise levels between the two performers as well as different spatial relationships. If quieter levels are at or below the noise floor, slight adjustments in microphone selection or placement, performer placement, or voice projection can be made, or compression can be used. (Another alternative to using the boom is to shoot and mike the scene entirely from the woman's perspective.)

With the body mic, handling the scene is somewhat easier. Because each performer is individually miked, it is possible to set and control levels separately. If in the

scene the woman also has to shout at the man, perhaps to admonish him to stop feeling sorry for himself, another option is to put two wireless mics on each performer. Levels for one pair of mics would be set for the louder dialogue, and levels for the other pair set for the quieter dialogue. The production mixer then has four faders to worry about, but overall sound quality will probably be better, and the editor has more to work with in postproduction.

Here are some other tips to keep in mind when considering or using wireless body mics:

- ▶ When complex movement is called for, do not automatically choose a wireless body mic before considering whether good boom work can meet the challenge. Remember that a boom-mounted microphone produces a more realistic sound.
- ▶ Because wireless mics are subject to interference from noise, avoid using them in heavy-traffic areas, such as downtown streets, parking lots, major highways, airports, or in areas where there are frequent RF transmissions.
- ▶ Place the receiver properly—in line-of-sight with the transmitter and as close to the set as possible.
- ▶ Check transmission frequencies to make sure that no one else in the area is using your band(s).
- ▶ Do a sound check by walking around the same area(s) the performers will be using.
- ▶ Adjust the transmitter's gain control for each performer.
- ▶ Always power down; that is, do not turn off the transmitter without turning off the receiver. Otherwise, the receiver will keep looking for a signal and could lock into unpleasant VHF white noise. (*White noise* is a wideband noise that contains equal energy at each frequency, as opposed to *pink noise*, which is wideband noise that maintains constant energy per octave. Both types of noise are generally used for testing electronic audio equipment.)
- ▶ Bring backup wireless systems and plenty of fresh batteries, preferably longer-lasting lithium batteries.

## Plant Microphones

*Plant microphones*, also called *fixed mics*, are positioned around a set to cover action that cannot be easily picked up with a boom or a body mic or to provide fill sound.

A plant mic can be either a conventional size or, preferably, a miniature capacitor. Plant mics can be hidden practically anywhere—in flowers, on a desktop nameplate, in a doorway, on the edge of a windowsill, on an automobile visor, or in a plant, which is where the term originated.

Because a plant mic is almost always used along with the main boom or body mic, beware of phasing from overlapping sound. Also, if possible, try to match the perspective sound quality of the main and plant mics; that will probably be easier to do with a boom mic than with a body mic.

## Multiple Miking with Different Microphone Mounts

As pointed out earlier, miking dialogue for staged productions might involve using a combination of approaches, incorporating boom, body, and plant microphones.

For example, in a single-camera production a master shot and then various perspectives of the shot are recorded in separate takes. A master shot is a single shot of an entire scene from a far-enough distance to cover all the action. Suppose the scene is a party in a large living room, where host and hostess are mingling with guests and exchanging pleasantries. The master shot would be a wide shot of the room and party, taking in all the action. Other takes might consist of a group shot with host, hostess, and a few guests and three-, two-, and one-shots of the host and hostess in a selected exchange with one person in the group.

To take advantage of all the sonic possibilities, the sound of each take should be recorded. By audio-recording as many takes as possible, the various sonic qualities and perspectives provide the editor with more options in cutting sound and picture. For example, the master shot could be miked from overhead, using boundary mics with hemispheric, or stereo, pickup to capture the overall hubbub. Directional overhead mics could be added for more-selective, but still open, pickup of particular interactions among host and hostess and certain guests or groups of guests. The middle-side (M-S) mic is yet another alternative. The directional capsule can be used to pick up selective sounds, and its side capsules used to pick up the more-open sounds. The advantage of the M-S mic is that middle and side imaging can be handled separately in the mix, so using the M-S mic during production recording does not necessarily commit the mixer to

its entire pickup in postproduction. The same is not true with conventional stereo miking.

Wireless mics attached to host and hostess would record their dialogue for close-ups to be shot later. In the group shot, a boom with an omnidirectional or wide-angle pattern could be used for the overall pickup to provide a more open sonic perspective than is provided by the directional overhead mics. For the tighter three-, two-, and one-shots, body-mounted wireless mics provide the sonic complement to these closer cutaways. Also, with a multitrack recorder there is no reason not to continue using the overhead mics for each take to provide additional recordings of the ambient party sounds.

The point is that in a single-camera production, shooting each scene several times to record as many different visual perspectives as possible is part and parcel of the technique. Each shot often requires time to reposition the camera, change the lighting, adjust the performers' clothes, recomb hair, and touch up makeup. If such pains are taken for the picture, similar time and attention should be given to the sound so that the audio recorded also has as many different perspectives as possible. Although enlightened directors do this, even today too many directors still give sound short shrift, to the detriment of the finished product. (See "How Directors Can Help the Audio Crew" later in this chapter.)

By the standards of most multicamera productions for television, the length of each continuous shot recorded in a single-camera production is often relatively short. Long takes are uncommon, because when performer and camera movement change appreciably, it is often also necessary to reposition performers, crew, and equipment. But long takes over relatively far-flung distances are done from time to time.

A key to such takes, in addition to having mics strategically mounted and located, is placement of recorders. Clearly more than one recorder is necessary to handle a long take over some distance. Where the recorders are placed is dictated by the length of mic cable runs or the transmission range of a wireless mic system, or both, and if necessary where recorders and operators can be hidden.

## FIELD PRODUCTION

In production always be prepared. Time is money, to say nothing of the physical and psychological angst caused by unnecessary delay. This applies even more so to field production, where away from the security of the studio,



if something can go wrong, it will. And it applies to dialogue as well as to other materials produced in the field, such as news and sports, which are discussed in Chapter 12.

## Preproduction Planning

Before actual production gets under way, decisions are made about the production site, the equipment, and any specific needs. Some of these decisions may be out of the sound person's control. But even as a consultant, the sound person can facilitate the preparation and production of audio by anticipating problems and needs and by being ready to provide knowledgeable advice when asked. The importance of proper preparation for on-location production cannot be overemphasized. Consider the loss of time and money, to say nothing of the inconvenience to all the people involved, if you hold up production or have to accommodate a less-than-desirable situation because the sound crew is short a person or someone brought the wrong microphone, forgot the batteries for the recorder, neglected to pack the tool kit, planned to mount a heavy camera crane on soil too soft to hold it, chose a shooting site several days in advance of production without realizing that a building nearby was slated for demolition on the day of recording, scouted the shooting site at noon although the script called for the scene to take place at dusk, or selected a shooting site filled with ragweed without checking whether any of the key people were allergic to pollen. Planning to shoot on location is a careful, meticulous procedure involving more than just decisions about production and in the long run worth whatever time it takes.

## Selecting a Location

In selecting a site, sound designers prefer one with suitable acoustics indoors and no distracting sounds outdoors, although these qualities are rarely found away from the controlled environment of the studio. The first thing to understand about a production site is that directors are interested in what it looks like, not what it sounds like. The second thing to understand is: be prepared to deal with unwanted sound. If possible, try to reduce the difficulties by suggesting to the director those sites with the fewest sound problems. But keep in mind that where you shoot is determined by the demands of the picture, not of the sound.

Because the main challenge in doing a production on location is to record the principal sound source with little

or no sonic leakage from either the acoustics or the other sound sources, it is of considerable help to the sound crew if the location site is evaluated with noise control in mind and judging the site on what is possible to achieve in neutralizing unwanted sound.

## Dealing with Unwanted Sound

Unwanted sound is generated by many sources. Some are obvious; others not so obvious: the low-frequency rumble from traffic that becomes a midrange hiss on a wet day, blowing sound from wind, clatter from a nearby office, buzz from fluorescent lights, excessive reverb from rooms that are too live, jet roar from planes that fly over the production area, noise from construction, church bells that ring on the hour, a far-off foghorn, clanking pipes, creaking floorboards, refrigerators, computers, machinery, chirping from birds, barking from dogs, and so on.

Being aware of the problems is not enough, however—you have to know what, if anything, to do about them. For example, you can usually roll off low-frequency rumble from traffic, but the midrange hiss from wet tires on a wet surface is difficult to equalize out. Gentle wind presents little problem for a mic equipped with a pop filter and a windscreen. With capacitor mics these filters will not completely offset the effect of noise from strong winds, although the mesh-style zeppelin windscreen and windjammer are quite effective, especially when they are used together. If a room is reverberant, you can make it less so by placing a lot of sound-absorbent material in the area and using tight, highly directional miking; but these techniques may not work in large, extremely reverberant spaces. If the director insists on a site where sound problems cannot be neutralized, plan to rerecord the audio in the studio during postproduction. Consider the air conditioning: without A/C control background sound will change from shot to shot.

If possible, schedule shooting during times when high-noise sites are less noisy. In locations where there are popular night spots, shopping areas, and other types of clamor, plan to shoot after hours.

Two other considerations in choosing a production site with audio in mind are (1) the available space—make sure the fishpole operator has enough room to move with the action and maneuver the boom; and (2) the power supply—if the production site does not have enough power outlets or wattage, or if the circuits are noisy, plan to bring the main and backup power supplies.

## Prerecorded Material

Any prerecorded announcements, sound effects, or music used during production must be included in preproduction planning. Also plan for the equipment to be used to play them: disc player, recorder, cartridge player, and so on.

## Other Equipment and Materials

Anticipating the need for less-obvious but nevertheless important equipment and materials is also part of preproduction planning. The following are among the necessary items to have handy, where appropriate (also see Chapter 12):

- ▶ AC power checker
- ▶ Adjustable wrench
- ▶ Backup microphones and mic accessories, such as cables, connectors, windscreens, and shock mounts
- ▶ Batteries for every piece of equipment using them
- ▶ C-clamp, pony clips, and various clips for body-mounted mics
- ▶ Clip leads
- ▶ Colored acrylic pens to camouflage body-mounted mics
- ▶ Cotton swabs
- ▶ Demagnetizer
- ▶ Disk drives
- ▶ Drill and drill bits
- ▶ Flashlight or lantern light
- ▶ Fuses
- ▶ Head cleaner
- ▶ Headphones and headphone amp
- ▶ Knee bench
- ▶ Log sheets or a laptop computer to record time, location, and content of production information
- ▶ Lubes and glues
- ▶ Measuring tape
- ▶ Multimeter

- ▶ Nut drivers
- ▶ Oscillator
- ▶ Oscilloscope
- ▶ Pens and paper
- ▶ Pocket knife
- ▶ Recording tape (if appropriate)
- ▶ Rope
- ▶ Scripts and rundown sheets
- ▶ Soldering pencil
- ▶ Stopwatch
- ▶ Tape—duct, masking, and water- (sweat-) proof
- ▶ Time code generator and reader
- ▶ Tool kit with ruler, needle-nose and regular pliers, wire cutters, Phillips-head and conventional screwdrivers, hammer, awl, and file/saw
- ▶ Vise grip

## Blocking and Rehearsing

Despite the considerable flexibility that modern technology provides in producing staged material, scenes are still shot one at a time, out of sequence, and often in segments. Each shot is blocked and lit, and camera movements are rehearsed. Just as the visual elements must be painstakingly planned and practiced, so too should the audio. For each shot microphone positions are blocked, movements are rehearsed, and sound balances are determined.

The responsibilities of the sound people are in some ways perhaps greater than those of the crew responsible for producing the picture. The sound crew is often left on its own, not because the director does not care (although this is sometimes the case) but because audio is usually the one major production component of film and TV that a director is likely to know least about. As a result, blocking and rehearsing become all the more important for the audio people. The director may proceed with shooting when the pictorial elements are in place and assume that, or not bother to check if, sound is ready. It had better be! As pointed out earlier, too many directors who would understand a delay if a light had to be repositioned would have little patience if a similar delay were due to an audio problem.



## Production Dialogue Recording

Recording dialogue on the set is known as **production recording**. It was discussed earlier in this chapter, and most of the same considerations that apply to studio recording also apply to field recording, including the challenge of getting the sound right with little leeway for experimentation, refinement, or, should something go wrong, repair. Perhaps one difference between studio and field production recording is the additional pressure that comes from being away from the security of the studio, particularly when a director has an aesthetic distaste for rerecording dialogue in postproduction and indicates a strong desire to use the original sound in the final mix. Being flexible and imaginative in solving problems is essential to good production recording.

Suppose a director wants to shoot a scene with constrained action in a very large stone-and-marble room using a boom, but does not want to rerecord the dialogue in postproduction. The reverberation is so dense, however, that the actors cannot pick up cues from one another. Clearly, the walls and ceiling cannot be acoustically treated—the room is far too large. What the production recordist did in this actual situation was devise a canopy secured to four extendable legs and position it over the action. In addition, a rolling, absorbent, 20-foot-high baffle was used to reduce the length of the room and therefore the reverberant space. It should be noted that this type of solution would not have worked had the scene required a lot of movement.

Suppose that a director wants an actor to sing while revving a racecar engine on a racetrack. Clearly, the engine sound will drown out the singing. But with a noise-canceling mic on the actor, the singing can be recorded loud and clear. Because of the inverse square law (see Chapter 12), if the sound-pressure level of a sound source is high enough, it is possible to close-mike the source and reduce leakage.

These are the success stories. There are conditions in which no amount of ingenuity can make it possible to record much usable dialogue on the set, regardless of a director's intent; for example, when the shooting schedule is so tight that the construction on one part of the set has to continue while action is shot on another part of the set, or on the day of shooting an unanticipated paving crew is digging up a nearby street with a jackhammer and it is not possible to reschedule another shooting date. In which cases most, if not all, of the dialogue has to be rerecorded in postproduction (See "Automated Dialogue Replacement" later in this chapter.)

That said, actors generally prefer the natural environment and interactions on the set to the sterile environment of the automated dialogue recording studio. As good as postproduction can be, most believe that it cannot quite capture the dozens of tiny sounds that correspond to physical movements, such as soft exhales of anxiety, the caress of a touch, the rustling of a shirt, or an arm brushing against a tree branch. Although ADR may save time and money, it is no substitute for the real thing.

## Signal Processing and Production Recording

Signal processing is rarely used during production recording except for, perhaps, bass roll-off and a slight midrange boost to help punch dialogue. Anything else, such as compression, heavy equalization, and so on, is usually done in postproduction. Productions shot with a single camera are done out of sequence and with different takes of most scenes; prematurely processing sound on the set could cause myriad matching problems, particularly with stereo and surround sound. Spatial imaging should be left to postproduction. To attempt it during production recording makes little sense because there is no way to know how a scene will ultimately be edited.

The only "processing" usually done in production recording is riding the mic level and balancing the loudness extremes of each actor. It is important to perform these operations with smooth and imperceptible changes using a top-quality mixer whose controls are easy to see and access. Slight gain adjustments on mixers of mediocre quality are often too apparent in the recording, especially with digital audio.

## Recording

Regardless of the microphone used during production, audio pickup is only half the sound equation. Recording is the other half. And the more tracks there are available, the better the chances of both producing usable audio from the set and providing the sound editor with more choices in postproduction.

Today this is less of a problem than ever before. With single-system recording, digital video cameras have at least four high-quality audio tracks available. For double-system recording, a single modular multitrack unit provides eight tracks of digital-quality audio. Road-worthy hard-disk recorders also furnish multiple tracks (see 11-14). Even R-DATs, with a minimum of two tracks, can be used for split-track recording. In addition to their digital-quality sound, these various recorders are available



**11-14 Portable hard-disk field recorder (front and right side views).** This model is a multidisk (up to three disks can be recorded at the same time), multiformat recorder. It is capable of real-time 10-track, 24-bit, 192-kHz recording with 123-dB dynamic range and can deliver two disks with different sampling rates to postproduction. Among its other features are FireWire disk recording, internal 16-input and 16-bus digital mixer for surround recording, scene and take data documentation, and quick identification of takes and false starts. A fully charged battery has a three-hour running time.

in models with time code, slate, search-to-cue functions, and 20- or 24-bit audio. One cautionary word about using any recorder for double-system audio: make sure that the transfer facility has the same type of unit for dubbing the synchronized production recording to whatever medium the sound editor is to work with—tape, film, or hard disk.

The advantages of multitrack recording on the set are obvious: It facilitates various miking arrangements and therefore allows better control of dialogue, background, and even sound-effect recording. For example, take a simple outdoor scene in which a couple is walking in the countryside and focal lengths vary from wide shots to close-ups. One approach could be to use two body mics for the couple and a separate microphone—omni-

directional or boundary mic—to pick up background sound. Recording the three tracks separately not only allows control of each sonic element during production and postproduction but also reduces the need for the extra step of dialogue rerecording, potentially at least.

In dramatic productions, because scenes are often shot a few times from different perspectives, the preceding example may be shot as a master scene of the couple, then as close-ups from the man's and woman's perspectives. This allows an editor to cut from shots of the couple to individual shots of their interaction.

As for miking, because the master scene would be shot wider than the one-shot close-ups, clip-on boundary mics could be used as the body microphones. The audio would be more open and would include more background sound



than would that of the typical mini-mic, thus better reflecting the wider focal lengths of the shot. During the one-shots the boundary mic could be changed to a mini-mic to sonically articulate the closer focal lengths and reduce background sound. A separate microphone to record background sound could still be employed for added flexibility in mixing. The microphone's pickup pattern may be omnidirectional, directional, or hemispherical, depending on the quality of the background sound required. Indeed, all three pickups may be recorded on separate tracks to further increase flexibility in the mix, but be careful of additive ambience in combining the tracks.

Having the luxury of recording one source per track also presents its own set of challenges. For one, it takes more time to plan and set up. For another, monitoring several inputs at once in multitrack recording is difficult. An approach some recordists take is to adjust and sample all input levels before a shot, establish the headroom level, and then watch the meters during recording, laying down the tracks at optimum loudness. Another approach is to use muting. Even in multitrack production recording, it is unlikely that several tracks will be recorded at the same time. Once a principal track has been recorded, it can be muted during the recording of another track. The danger in this, however, is that if a muted track is being used for cueing purposes, the recordist could miss the cue. A way to avoid this problem is to simply lower the levels of the previously recorded track so that they are audible but not competing with the level of the track being recorded. Even so, this solution still takes bifurcated concentration and nimble fingers.

Regardless of the venue, it is always wise to record plenty of ambience of the performance area. This is of great help in solving problems of matching during postproduction editing (see Chapter 18).

All of the above is well and good for most conventionally produced programs. The so-called reality shows are another story; they present a unique challenge. As more than one production recordist has suggested, the problems of dealing with sound environments in less-than-hospitable locations and the unpredictable actions of the participants. Adding, "Where could you find grown men and women hunched over a computer screen trying to decipher one word of dialogue for hours and hours?"<sup>1</sup>

1. David John Farinella, "An Altered Audio Reality," *Post Magazine*, January 2003, p. 52.

In reality programs dialogue from the participants is usually handled with wireless body mics and the fixed mics on the digital video cameras (see 12-10). But plenty of postproduction signal processing is inevitable to clean up dialogue that is full of different types of noise, such as varying background sounds, unintelligible words, overlapping lines, and clicks, pops, and mic knocks. As talented and proficient as the productions' recordists are, without postproduction most if not all of the production audio from reality programs would be unusable.

## Production Sound-Effect Recording

Although most sound effects in a staged production are handled in post, some directors prefer to use as many sounds recorded on the set as possible. They feel that because those sounds were recorded in their actual ambient environment and perspective in relation to the sound of the dialogue, they are more realistic than sounds postproduced. Inasmuch as sound-effect production is covered in Chapter 16, in the interest of coherence all sound-effect production is discussed there.

## Noise Reduction

Because noise is an ever-present annoyance, the value of noise reduction cannot be overemphasized, especially in relation to dialogue and field recording, particularly with analog audio. Even though digital signal processing (DSP) is a powerful ally in eliminating noise from a recording during postproduction, it saves considerable time and expense in the long run if noise reduction is attended to throughout the production process. In addition to DSP, which is implemented "after the fact," there are a number of ways to deal with it "before (and during) the fact."

Use only the highest-quality microphones and recording equipment. With directional mics make sure they have excellent off-axis rejection. Remember that many capacitor mics have high output, so it is ordinarily unnecessary to increase their levels appreciably during quiet interchanges, thereby avoiding a boost in background noise. The output of moving-coil mics may be too low to pick up quiet levels without noise. Moreover, capacitor mics do not have to be brought as close to a sound source, so you avoid the dangers of popping and sibilance.

Equalization also helps. By rolling off the low frequencies, noise from ventilation systems and room rumble are reduced. (Some directors have the air-conditioning turned off during shooting.) Cutting the high frequen-

cies reduces hiss. With dialogue it is possible to use a relatively narrow frequency range because the speaking voice has little low- and high-frequency content.

Putting gentle compression on a voice raises the quieter levels above the noise floor. Using a noise gate can also reduce ambient noise level, but take care that its action is not perceptible. A de-esser reduces sibilance, but be careful of too much signal processing during recording because (1) once it is part of a recording, it is very difficult to remove, and (2) the more electronic devices in the signal chain, the worse the signal-to-noise ratio. That said, use whatever miking technique or signal processing is necessary to reduce rumble, AC hum, buzz, and hiss—they are unacceptable in a recording. Better to deal with these problems during production recording than to leave them to postproduction. Keep in mind, however, that any signal processing during recording should be conservative and knowledgeably applied, otherwise it will cause more problems than it solves.

A main source of acoustic noise is the sets. Art directors can eliminate many potential noise problems by following a few principles of acoustic design, such as constructing sets whose walls are not parallel, using absorptive materials (including sound-absorbing paint), and building flooring that does not squeak—unless the director wants this effect.

Directors can also help reduce ambient noise by not blocking action near a flat surface or, worse, a corner. Regardless of the quality of the microphone and the effectiveness of the sound-absorbing materials, it is difficult to avoid signal degradation when sound bounces from walls and corners into a mic at close range. Too much sound absorption is not good, either. Heavy carpeting on a set, for example, could make sound lifeless.

In field recording most venues, no matter how carefully chosen with sound in mind, have background noise problems from wind, traffic, ventilating units, and so on. Although the point has been made before, it bears repeating: most background noise, once it becomes part of a recording, is difficult if not impossible to remove without altering the sound quality of the program material.

## HOW DIRECTORS CAN HELP THE AUDIO CREW

During a shoot the activities of most folks on the set are readily apparent. Everyone knows what the director, assistant director, camera person, costumer, electrician, and so on, do. Film and video are dominated by visual

considerations. It takes more people to produce picture than it does to produce sound. Except for handling the microphones, the recorder, and any audio playback equipment needed for cues, what the few people in the sound crew do is a mystery to most of the other production personnel. Whereas the visual aspects of filming or videotaping can be seen by everyone, only the sound mixer and the microphone handler can hear what is being recorded. Moreover, a director will usually understand if there is a request to delay shooting because a shadow needs to be eliminated; asking for a delay to eliminate a hum, however, may not be met with quite the same response.

If the director enlightens the entire picture-producing team on how to avoid or minimize audio problems, it goes a long way toward audio efficiency and economy, not only in production but in postproduction as well.

Preproduction, discussed earlier in this chapter, is a good place to start. On the set the camera person can use a sound absorbing blimp to mask camera noise. The lighting director can mount lights high enough to allow sufficient headroom for the boom operator and prevent noise from the lights from being picked up by the microphones. Special-effect techs should keep noise-making devices, such as a rain machine or a fan to blow curtains or foliage, away from the reach of microphones or baffled to muffle their sound. As noted earlier, wardrobe can avoid noisy fabrics, consider the impact of jewelry, and design clothing for easier placement of a body mic. Props can reduce noise, for example, by putting a pad under a tablecloth to muffle dish and utensil sounds, by using fake ice cubes in drinking glasses to reduce clinking sounds, and by spraying shopping bags with water mist to prevent paper crackle. Grips can reduce dolly squeaks, put talcum powder around the rubber wheels, secure fixtures that rattle, and oil noisy hinges. The assistant director or designated overseer should arrange with local officials to have traffic cleared and make sure no noise-generating public works project is scheduled near the performance area at the time of shooting. The audio crew can help itself in a number of ways already pointed out in this chapter, including recording all takes—whether usable or not—to make editing easier and to always have a sync reference to work with. Production personnel should be equipped with walkie-talkies so they can coordinate their activities, particularly if the set is far-flung.<sup>2</sup>

2. Based on John Coffey, "To: Directors, From: Your Sound Department," *Mix*, February 2001, p. 141.



## PRODUCTION RECORDING AND THE SOUND EDITOR

Production recordists can be of considerable help in giving sound editors flexibility by how they record dialogue on the set. This is no small consideration given the pressures, expense, and usually limited time of postproduction. In other words, multitrack recording is often better than split-track recording. If a scene or show uses one or two mics, there is no problem recording split-track. But when a shot uses several mics, a multitrack recorder provides more possibilities for track assignments and for recording dialogue with minimal sonic encumbrance from other pickups.

## AUTOMATED DIALOGUE REPLACEMENT

Although this section of the book covers production, and automated dialogue replacement is handled in postproduction, in the interest of continuity it makes sense to include in a single chapter all the ways in which dialogue is handled.

In *automated dialogue replacement (ADR)*, also known as *automatic dialogue replacement*, dialogue is recorded or rerecorded, depending on the outcome of the production recording or the director's aesthetic prefer-

ence, or both. Generally, there are two schools of thought about ADR.

Some directors believe that an original performance is preferable to a re-created one and that the background sounds that are part of the dramatic action are a natural part of the sonic environment, just as shadow is a natural part of light. They therefore prefer to use the dialogue and other sounds recorded during production, assuming that pickup is tight enough that the intelligibility of the dialogue and the sonic balances are acceptable. Other directors prefer dialogue recorded with a minimum of background sound. They want to control the ambience and other elements separately in postproduction, where they can also hone an actor's performance. Regardless of preference, however, there are times when ADR is the only way to capture dialogue, as it usually is, for example, in far-flung battle and chase scenes, scenes involving considerable actor movement, and scenes that require several microphones.

### Purpose and Process

Automated dialogue replacement is done in a dialogue recording studio, a relatively dry room (reverberation time is at most 0.4 second for average-sized studios) with a screen and microphone(s) (see 11-15). The control room

is separate from the studio. As the picture is displayed on the screen, the performer, wearing headphones, stands before a microphone and synchronizes the dialogue to his or her mouth and lip movements on the screen. Relatively dry rooms are necessary so that the background sound added later can be laid in with as little prerecorded ambience as possible. Too dry a studio, however, absorbs the vitality of an actor's performance and could create a claustrophobic feeling.

Not only is ambience kept to a minimum in ADR, but audio enhancements are also minimal to give the sound editor and the rerecording mixer the most latitude possible. Compression or a microphone pad may be applied to keep a signal from overmodulating. Sometimes spare equalization is employed to smooth intercut dialogue and transitions.

The *automated* in automated dialogue replacement refers to the computer-controlled aspect of the procedure. The equipment is programmed to start, shuttle between cue points, and stop automatically. The computer also puts the recorder in *record* or *playback* and selects the desired playback track(s) in a multitrack recording. Cue points are designated in time code or feet and frames.

Dialogue rerecording is also referred to as *looping* because the process once involved putting the dialogue sequences into short film loops so they could be repeated again and again without interruption. Each short section was rehearsed until the actor's dialogue was in sync with the picture and then recorded. The procedure is still the same, only today it is automated and the picture medium may be videotape or computer.

In ADR there are a few points and procedures worth remembering:

- ▶ Screen and analyze the scenes to be recorded and break them down line by line.
- ▶ Study the actor's tone, pitch, and emotion in the production recording.
- ▶ Note such things as dialogue that is to be shouted, whispered, and so on.
- ▶ Get to know what the performer's normal speaking voice sounds like because voice quality is quite different between a first take early in the day and a take 12 hours later.
- ▶ Another reason to get to know what the performer sounds like normally is to gauge scenes calling for projected or quiet delivery—you'll have an idea of what adjustments to make in microphone placement.

The ADR studio is a sterile setting for a performance. The acoustics are dry; there is no set to help create a mood or establish a sense of environment, and there is rarely interaction among actors—they usually record their dialogue one at a time.

When it comes to ADR, the distinction is made between performers and trained actors. Performers often have a problem becoming the character in the absence of people on the set and a camera to play to. A trained actor, on the other hand, has an easier time adjusting to ADR's sterile environment.

For all talent, but particularly for the performers in ADR, listen carefully to delivery in relation to believability and how a performance will sound after background audio is added. For example, if a scene calls for an actor to talk loudly over the noise of, say, a racecar, the dialogue's force and accentuation have to be convincing. Also, the dialogue may sound sufficiently loud in the quietness of the studio, but once the racecar sound is added the delivery may not be forceful enough.

Adding the sound of a scene's background environment to the actor's headphone mix sometimes helps enliven the performance. It may not be possible to use the precise background called for in the picture, but adding some presence helps counteract the sterility of the studio.

Recordkeeping is an often-overlooked but very important part of ADR (and of the production process in general). Keeping accurate records of track assignments and making notes about each take is not only necessary to avoid confusion but of immeasurable help to the editors and mixers, who will be working with the dialogue tracks later in postproduction. A director may choose the reading of a particular line even though the beginning of a word may not be as crisp as it should be. By noting that in the record, an editor can try to find the same sound, delivered more crisply, elsewhere in the recording and edit it in, or the mixer may be able to use equalization to add the desired amount of crispness—all with the director's approval, of course.

The five elements generally considered to be most important in ADR are pitch, tone, rhythm, emotion, and sync. The goals are to maintain consistency and to make the dialogue sound as though it was the original.

### Microphone Selection and Technique

Keeping in mind that there are as many opinions about how to deal with mics and miking technique as there are ADR supervisors, it is generally agreed that the micro-



ADR 1 at Sun Studios, Copenhagen

11-15 Automated dialogue recording studio.



phone used on the set does not have to be the same in ADR. Because the purpose of ADR is to record the clearest, cleanest dialogue (in a good, synched performance, of course), only the finest mics are chosen. The particular mic will vary according to the situation. For example, recording an intimate, warm sound may call for a large-diaphragm capacitor. If the tone is not sufficiently robust, a second mic may be positioned between the mouth and the sternum to add a chestier sound. Extremely tight dialogue may require a shotgun to close down the dry acoustics even more. Screams may necessitate a moving-coil mic.

Ordinarily, ADR involves straight-on recording. Such elements as perspective and signal processing are added later. Movement, however, may be attended to through mic positioning or by having the actor move. These techniques are used more to move the voice around a bit for level to achieve some of the naturalness of the production recording. For example, if on the set an actor walks into a scene and then comes through the camera, in ADR the actor can start a bit off-mic and then walk to the mic.

## Loop Groups

In scenes calling for background voices, called walla, loop groups are used. **Walla** consists of spoken words to create ambient crowd sound usually without anything discernible being said. A **loop group** comprises everyone from professional actors who do walla for a living, or some part thereof, to anyone who happens to be around and is hired by the postproduction or ADR supervisor.

The function of a loop group is to provide whatever type of background sound the script calls for, from moans and kisses to all types of crowd audio for restaurant scenes, mobs, sporting events, office hubbub, and so on. Using a loop group is far less expensive than paying principal actors to do what is, essentially, making sounds.

During actual shooting, a loop group will mouth the words, instead of actually saying them, so their background does not interfere with the actors' production recording. The loop group adds the words in ADR. Usually, whatever is being said is kept at a low level just to convey a sense of location and atmosphere.

When certain words are designed to come through, these *callouts* are edited into holes where there is no dialogue or into shots with little visual or aural action. For example, in a fight scene when the favorite has his opponent against the ropes, the callout may be "Knock him

out!" Or if the champ is on the canvas, the callout may be "Get up, you bum!" In a restaurant scene, in addition to the background conversational walla, you may hear callouts such as, "Would you care for another cup of coffee?" or "Thank you, come again."

A common loop group assignment is to cover non-specific sounds for an actor, such as breaths, groans, and grunts. Again, it is much cheaper than having an A-list actor do them.

## Automated Dialogue Replacement in the Field

Developments in computer hardware and software technology have made it possible to do automated dialogue replacement in the field by combining such resources as a hard-disk recorder with a laptop computer using specially designed dialogue-recording software. This is particularly useful in productions that are shot mostly on location and in locales that are not close to a studio.

The ability to handle ADR in the field saves considerable time in postproduction. It is also advantageous to the actors, who can redo their lines relatively soon after a take. This helps ensure a fresher performance instead of having to wait until all shooting is completed before doing the dialogue replacement in-studio.

## Dialogue Rerecording: Pros and Cons

Dialogue rerecording frees picture from sound and gives the director more control. When there is a choice between using the original dialogue or rerecording it, directors and sound designers disagree about the benefits of looping. The question becomes: are the added sonic control and assurance of first-rate audio quality and refined performance worth the loss of spontaneity and the unexpected?

On the one hand, regardless of the subject and style of the material, art is illusion, so there is no reason not to use whatever means necessary to produce the most polished, well-crafted product possible. Every sonic detail must be produced with the same care and precision as every visual detail. Anything less than excellent sound (and picture) quality reduces the effect of the illusion.

Dialogue replacement also provides a director with more flexibility in shaping the sound of the dialogue. For example, for a character, say, in jail speaking within hard-surfaced areas of metal and concrete, the sound should be hard-edged and icy. The character is then

## MAIN POINTS

released out in the world and in the more natural, open environment should have a warmer, less contained sound. Producing these sonic differences and maintaining their consistencies in the two different environments is more easily handled in the controlled acoustics of an ADR studio.

On the other hand, quality of performance is more important than quality of sound; "natural" is more realistic and, hence, more effective. Because actors, as a rule, do not like to re-create their performances in a rerecording studio, dialogue looping is rarely as good as the original performance recording. Even though lines sound different as a shooting day goes on, because the actor's voice changes, the difference between a production line and a looped line is always much greater than the difference between two production lines.

Actors generally prefer the natural environment and interactions on the set to the sterile environment of the ADR studio. As good as postproduction can be, many believe that it cannot quite capture the dozens of tiny sounds that correspond to physical movements, such as soft gasps of anxiety, a sniff, or the rustle of a newspaper page against the edge of the table. Although ADR gives directors complete control and often saves time and money, most actors agree that it is no substitute for the real thing.

## MAIN POINTS

- ▶ Influences of nonverbal speech on meaning include accent, pace, patterns, emphasis, inflection, and mood.
- ▶ The principal challenge during production is recording dialogue that is clear, intelligible, and as noise-free as possible.
- ▶ Dramatizations on radio involve creating a "theater of the mind," using sound to impel the listener to "see" the action.
- ▶ To create perspective using one microphone in radio dramatization, performers are positioned at appropriate distances relative to the mic and to one another, as the dramatic action dictates.
- ▶ Using the multimicrophone technique in radio dramatization, perspective is created in the postproduction mix.
- ▶ For stereo radio dramatizations, coincident or near-coincident microphone arrays are usually employed. Coincident miking positions two microphones, usually directional (or a stereo mic), in virtually the same space,

with their diaphragms located vertically on the same axis. Near-coincident miking positions two mics, usually directional, horizontally on the same plane, angled a few inches apart.

- ▶ A main difference and advantage of surround-sound miking radio dramatizations is being able to position performers much as they would be on a stage and recording them from those perspectives or recording them conventionally and creating those perspectives in postproduction.
- ▶ Recording dialogue on the set of a multi- or single-camera production usually means employing a boom, body-mounted wireless, or plant microphone, or a combination of the three. The microphones of choice are usually the mini- and shotgun capacitor mics.
- ▶ The main sonic difference between the boom and body-mounted microphones is perspective. The boom better reproduces the mic-to-source distances that are relative to the shots' fields of view. This helps maintain acoustic perspective between sound and picture. On the other hand, the body-mounted mic always picks up dialogue that is clear and present with a minimum of background sound, but sonic perspective remains the same regardless of a shot's focal length.
- ▶ Miking decisions are made in preproduction planning during blocking, when the movements of performers and cameras are worked out.
- ▶ The challenge in operating a boom is to maintain aural perspective while simultaneously keeping the performers in the mic's pickup pattern and, of course, the mic out of the frame.
- ▶ Care must be taken when using a body mic to ensure that it is inconspicuous and that it does not pick up the sound of clothes rustling. Cotton does not make as much rustling sound as do synthetic fabrics.
- ▶ Plant, or fixed, microphones are positioned around a set to cover action that cannot easily be picked up with a boom or body mic.
- ▶ Preproduction planning is essential in any production, but especially so when working in the field, away from the security and resources of the studio. Preproduction planning involves selecting a location; determining how to deal with unwanted sound; preparing, in advance, prerecorded material; and anticipating all the main and backup equipment needs.
- ▶ In production, recording the clearest, most intelligible noise-free dialogue is the primary challenge of the production recordist, regardless of a director's intention to use it or redo it in postproduction.
- ▶ Dealing with unwanted sound on the set is an ever-present challenge to the audio crew. But being aware of problems is not enough—you have to know what, if anything, to do about them.



- ▶ Be wary of employing signal processing during production recording. It affects the dialogue audio throughout postproduction.
- ▶ The value of noise reduction throughout the production process cannot be overemphasized, especially in relation to dialogue and field recording.
- ▶ If the director enlightens the entire picture-producing team on how to avoid or minimize audio problems, it goes a long way toward audio efficiency and economy, not only in production but in postproduction as well.
- ▶ Production recordists can be of considerable help in giving sound editors flexibility by how they record dialogue on the set.
- ▶ In automated dialogue replacement, dialogue is recorded or rerecorded in postproduction so there is complete control over the acoustic environment in which the dialogue sits. Any background sound, ambience, or sound effects are added to the dialogue track(s) later.
- ▶ ADR is done in a dialogue recording studio, a relatively dry room with a screen and a microphone.
- ▶ ADR frees picture from sound and gives the director more flexibility and control. On the other hand, it involves re-creating a performance, which is not as natural or as authentic as the real thing.
- ▶ The five elements generally considered to be most important in ADR are pitch, tone, rhythm, emotion, and sync.
- ▶ In scenes calling for background voices, called walla, loop groups are used.

# 12

## Field Production: News and Sports

### IN THIS CHAPTER

Electronic News Gathering

Electronic Field Production

Multicamera EFP

Production is a challenge no matter where it takes place. But in the field, away from a controlled studio environment, it presents its own particular problems, especially given the immediate and relatively immediate demands of live and live-on-tape broadcasting. Yet field production is almost as commonplace as studio production. Producers go on location—or on a *remote*, as broadcasters often refer to field production—to cover news and sports, to do a disc jockey program promoting a sponsor, to heighten realism in a drama, to add authenticity to a setting, or to provide surroundings that are difficult or impossible to reproduce in a studio.

Field production for radio and television can be grouped into two basic categories: electronic news gathering (ENG) and electronic field production (EFP). ENG uses highly portable equipment to cover news for live or imminent broadcast. EFP involves more-complex productions, such as sports, parades, and awards programs.

### ELECTRONIC NEWS GATHERING

*Electronic news gathering (ENG)* refers to radio or TV news gathered or broadcast in the field. ENG covers broadcast news as it is happening.

#### Radio ENG

*Radio ENG* (often abbreviated *RENG*) is relatively uncomplicated to produce and can be broadcast on the spot with comparative logistical ease. It usually involves a reporter with portable recording and, if necessary, transmitting equipment. At its most basic, all that the radio