

2 - Microphones and Placement on-set

break-down of lecture time-line

- **types of mics for on-set use - refer Chapter 4 - pages 115 - 122**

Dynamic - handheld, etc

Condenser

Electret-Condenser

Ribbon - not usually, perhaps as a working prop in a radio-station set.

Polar-Response patterns - refer Chapter 4 - pages 123 - 126

Fig-8 - nope, unless in conjunction with a cardioid for stereo recordings

Omni - handheld and Lav

Cardioid - more for music, or effects, than for dialog

Hyper/super-cardioid - dialog mics - close distance and perspective

Shot-gun - interference tube microphones, exterior for dialog and effects.

- **where you would use them**

Handheld or lav mounted on outside of clothing - where audience can accept non-hidden
- presenter-to-camera-style

Dialog mics - Hidden out of frame or on-set, lavs hidden on talent

- **how you would use them**

Fairly obvious - depends on *all* the other factors; location, unwanted noises, who/what is making the wanted noise, ability to position the microphone, lighting, shot size, etc, etc, etc - this is why it's important to get a GOOD boom op instead of a P.A.

¾ hr mark

- **practice - booms**

Students pair-up and practice swinging the boom pole around. Give it a fair chance to restore blood flow and maintain interest

1+ ¼ hr mark - break for 20-30mins

- **factors to consider (shadows, background noises)**

How does this change in use of different types of microphones?

- **practice - lavs**

Students get into groups and practice different mounting techniques for Lavalliere microphones (hiding, attaching neatly to outside of jackets etc)

2+ ¼ hr mark

- **Questions and other general discussion**

2 + ¾ hr mark

- **Watch some of the kong-is-king production diaries if early finish**

Must bring in DVD of the downloaded .mov files

Points of interest - Boom Operating

Things for the students to consider when practicing their boom operating
Free-form teaching - walking amongst the students.

CUE the microphone = angle/aim with no change in its physical location

SWING the microphone = a change in its physical location.

ie: We cue the mic between 2 people having a conversation face to face.
You need to cue *whilst* swinging the mic to catch a new person's dialog.

- **Continuity of background noises**

Keep the boom facing in the same direction throughout the scene (different set-ups).

- **Continuity of perspective**

Not making a MASSIVE change in microphone position between Wide and Close setups. Small change in the distance from source, not too drastic

- **Negation of unwanted sounds**

Can be more important than "ideal" placement (think cardioid neg-facing a computer doing v/o or ADR)

- **Proximity effect**

Extra Bass... YAY! Or BOO!

- **Using close-distance to overcome background noise (relative loudness)**

Keeping the mic close to the source, or increasing the source's volume (no whispering) may make background noises insignificant (especially when used in conjunction with other techniques) - use City pacific Finance TVC as example

- **Using lav to overcome background noise**

See above - the lav is the closest miking you'll ever get. Unfortunately - if it's facing the worst of the background noise, this can work against you - PZM mic using the body as a sound board)

- **Simple shadow avoidance**

Remember, swing from non-key-light-side of camera. This can help to reduce shadows falling onto the cast/in frame. Not always the case though - each set-up is different

- **Working from underneath**

Is sometimes the only way to capture useable dialog in full-sun (also - beach) - still point at the mouth, PRO = less chance of background noises, as you are pointed up. CON = More “in the way” of actors/crew.

- **Stop shaking! - correct (easy) boom-pole use**

“H” position, don’t lock the arms, rest-on-joints (bad advice chiropractic-ally speaking), easier movement of boom-pole. Constantly shift your weight. Separate the upper and lower sections of the body when walking. Front hand as pivot point, back hand controls the cueing of the mic, pull down with the back-hand, push up with the front (long heavy poles)

- **Setting microphone angle on a boom (fish-pole)**

Think about the entire shot - not just the early parts, can be better to start in an un-comfortable position and move into an easier one, than the opposite. Try to hit the mid-chest area of the subject, when done from above - you get a nice sound. <45deg (more shallow than straight down) for less camera noise, avoid shadows, less footsteps, etc... but needs to be very accurate cueing

- **Setting fishpole length**

Same as above - uncomfortable start, also - distance from your boom-position to the character speaking is roughly the length you pole needs to be (Distance + the extra arm-span = Boom pole length)

- **Moving the boom to catch the BEGINNING of a person’s dialog (even if you have to leave the other actor EARLY)**

Sooooooooo Important, the audience will accept the loss of the last part of someone’s lines only if the next-person is ON-MIC for the beginning of their dialog.

- **Booming actors of different Height or relative loudness**

Keep closer to the softer (relative loudness) or shorter person, then cue to the louder, or taller person (don’t swing) - they will be the littlest bit softer because of the distance, therefore evening out the levels. (this way the mixer doesn’t need to change the mic-pre gain/noise-floor to compensate for change in levels)

- **Booming a group of people where you DON’T know who’s speaking next**

Need to play a middle position, make small movements to who’s speaking, think overall levels rather than missing beginnings (see above). Better mic would be a rounder pattern, hyper-cardioid rather than a shotgun. Useful in doco situations, reality shows, etc.

How the type of Camera recording equipment affects Booming

Video - no section of the viewfinder allows for seeing the boom without being in picture
Film - depending on the format (super 16/35, anamorphic, etc) there can be a section in the viewfinder/video split OUTSIDE of the film recording area - this section allows the camera operator to see the boom before it's ever recorded on film. Much better for boomies.

Look at the top of screen (Just above the "S") the microphone foam is above the "top of frame-line", but inside the academy frame.



There is still a higher emphasis placed on "good" lighting when film is the recording format, and more time allocated for this lighting. More time means more of a chance to sort out any shadow issues, mic placement, etc.

In my experience, productions that are shooting on video are more likely to try and shoot wide and tight at the same time. This makes boom operation near impossible for the tight shot; which should sound like a close-up, but will end up sounding like the wide. (*Not as true as it was; film shoots are now trying to get in on the craze)

When shooting on video, sound will most likely be expected to give the camera an audio feed. Clapper boards may not need to be used; although a visual/audio ID should still be given. (Clapsticks can help post-production re-establish sync should the editors misalign tracks)

Film shoots should get an audio feed to the video split, though the split rarely moves during a take. Whether this is an advantage or not depends on if the sound recordist is moving with the camera.

Obviously when rolling film there will be a need for sync with the chosen audio recording device - Clapper boards are still in constant use, no matter the level of production. Timecode discussion in Lecture 5.

Video Cameras are physically smaller, and easier to cram into little places, making the DP more likely to try innovative framing. This can be good, or *really bad* for the boom operator.

Video cameras are treated as REALLY quiet cameras even though I've heard video stuff that's MUCH worse than a sync-film camera. Usually it's a high-pitched electronic noise, or the noise of the tape movement, or a cooling fan. Some of the high level HD camcorders are HORRID for sound. Particularly when you add in the other equipment that makes noises (HD monitors, etc)

Film camera noises can be dependant on the clapper-loaders abilities. You'll hear the film movement, or perhaps the film clicking through the camera. Most of the noise will be localized in the magazine, or projected out the front of the lens. Some camera assistants are very-aware of this and will gladly Barney (cover) the camera, and try to muffle other noises; others pretend that there isn't anything wrong at all, or proclaim that there's nothing they can do.

Best I've seen is one assistant who tried to dampen the noise from a rigid filter in front of the lens by using a foam to dampen the vibrations traveling between matte-box and filter (that's dedication to team-work in their job)

Mention ROAD KILL 1st shot of the film, Wide ANGLE CU inside the bus - inches from the lens on a modified ARRI-BL (35mm 2 perf) - ARRRRGHHH! - Wild lines thanks.

Lens Choice and the Boom Operator

Prime lenses (fixed focal length) are important things for a boomie to try and become familiar with. With time it'll become easier to "know" the amount of headroom a 25mm lens (shooting 35mm film) will give on a Mid Shot. Also a fair knowledge of the relative sight-lines of wide lenses and telephoto lenses will assist the boomie when picking a position to boom from.

Eventually you'll be able to start to make decisions when you hear the DP call for a lens change, and actually have it pay off.

Wide-angle lenses mean that there is an increase to the amount of the set that will be seen behind the character (important for shadow avoidance). Booming from straight above may require extra distance from the source, because the sightlines are wider, capturing more of the area.

HOT TIP = shallow out the mic angle and come from more in-front of the character (but be aware of what's in line with the BG of the mic - traffic etc).

*Important note - this is for wide LENSES not wide SHOTS
(you can have a Wide Lens shooting a CU)*

Tighter lenses see less of the background (*B.G), and it's also likely to be out of focus = good for shadows. The decrease in relative headroom, will allow for a more downward angle on the mic.

Another consideration is the lens height - if you've got a wide angle lens that's on a LOW angle, the amount of headroom may be the same as a HIGH angle, but to allow for the framing, more of the air in front of the character will be seen. Again you'll need to move further forward from the character and angle in, or, try from underneath?

Video cameras are more likely to have zoom lenses on them (and the consumer ones don't even have focal lengths). This makes it harder to predict what the camera will see. The smaller imaging surface of the video camera means a deeper focal depth, so any shadow movement in the BG will be caught; and to top it all off, when the mic drops into the viewfinder, it's actually in picture.

Tape stock runs up to 180mins (DV big cassettes) allowing for much longer takes, straining the boomie's energy reserves to the limit. By contrast - 35mm film tops out at 10mins (1000ft mag) before they need to change stock.

With all of this taken into consideration, it's easy to see why boomies prefer film jobs. It's also easy to see why producers like to shoot video (less sync costs, but more radio mic hire costs - so I guess it's not as much of a financial saving as you'd first guess).

Points of interest - Hidden Lavalliere Placement

Can depend on the:

- clothing,
- where the actor is speaking (over their shoulder, to their feet),
- who else is in the scene, Phasing issues
- if they have chest hair,
- many other factors.

Best position

Mid-sternum for most people. If possible mount on outside of the clothing. If not. Then straight on the skin (unless hairy)

Clothing

Natural fibres (like cotton) have less ACOUSTIC and TRANSMISSIVE noise. That is; they are quieter fabrics. Polyesters are noisy in themselves (acoustic) and cause noise within the microphone cable (transmissive). Silks are bad too (Ties, bras)

Can do the ABC rig (taught to me by Guntis, as a favorite of our national broadcaster) Basically get a big piece of Gaff-tape (2" square), centre the mic on one of the edges, and whack it on the inside of the talent's shirt facing outwards, then smooth down the area. The shirt acts as a windscreen. I've found that this method is fairly hit and miss. Very much dependent on the costume.

Alternative - mount between buttons on a shirt and double-side tape it down (to stop clothing rubbing noises). Works well with a Cos 11 if you stick the mic-cage out in the air (watch out for wind noise)

Women (or men with big Pecs)

Attach directly to the skin between the breasts or onto the centre of a Bra. (obviously there are issues here with privacy so sometimes it's best to let the talent do this). You should show them how, on the outside of your clothing so they understand which way the capsule needs to face etc.

Adhesives

Best kind are sticky, don't lose it when wet. (sweat and other liquids)

Mole skin (Dr scholls product) is a smooth/velvety-backed adhesive that is used to reduce blisters. PRO = good for direct application to skin, helps to reduce transmission noises

Surgical tapes (paper or non-paper)

3M make a good non-paper one "transpore" it's sticky, ok on skin or clothing, and clear. (preferred choice)

Paper ones are cheaper, but I find them less useful as they tend to be a lot thinner, and have less stick

Cleaning and prep - alcohol swabs

Use an alcohol swab to clean the skin, it removes the natural oils that cause adhesives to lose their stickiness.

Hair rigs

If the costume is causing issues or chest placement is problematic, then try the hair.

Attach the mic toward the front of the hair-line (forward of the ears) and attach using either spirit gum (make-up glue) or bobby-pins. Run the cable through the hair to the back of the neck, the cable can be painted skin-colour if needed. Attach body-pack transmitter as normal.

Hair rigs are used more frequently in Theatre for singing as the volumes used are higher, and they need a foolproof placement. (*not as concerned with visibility)

The sound from a hair rig is a little more like a boom (*not directly attached to the chest so less presence-boosting is required), the sound will have less bass than the chest placement - some lavs have different “Caps” for different placements.

Whichever way you rig it, the lav sound is still different to the boom, there’s more of a presenter feel to it. You are hearing the talent as if they were addressing you directly.

Note - if the bug/lav is BURIED under many layers of clothing it’ll sound muffled.

Final Words on Lavs

The reason you see body mics on the outside of clothing in News etc is that it’s a foolproof miking situation. You see the person, you hear the person. Great for presentation. However a body mic doesn’t help sell the drama of a fictional scene as good as a well-placed Boom mic (which includes more of the locations ambience).

You will need to play-around with lav placement, as it is dependent on so many variables, that what works in one situation may be the exact opposite of what’s needed in another.

1st AD’s should already be aware of these issues, though you’re lucky if you get ANY time to find the right placement when you’re shooting. Some are good, most don’t understand - therefore ask for more time than you think it’ll take.

Use all your knowledge to narrow-down the potential rigs in your head before you try them. If you know that the costume has a lot of noisy necklaces, or heaps of noisy layers, then make the most of your rigging time by concentrating on a hair rig (make-up/hair are good help here).

INTERESTING PRODUCTION TERM OF THE WEEK

D.F.I. = Different F*cking Idea

Term used when a technician who’s been running like heck to get a particular piece of equipment, returns to discover that the original set-up has changed. (Well actually it’s usually yelled out to the technician BEFORE they return, to try and stop them bringing the equipment with them - and to motivate them to get back as quick as possible to work on the NEW set-up).



MATRIX RELOADED - Twin-Booms to cover A and B cameras (both on matching tight shots) Note the similar relative-distances from speakers mouths.



Microphone positioning on CU in *MATRIX RELOADED*, note the position in-front-of and pointing-in. Helps minimize any camera noises (though I doubt it would be problematic in this set-up), more likely it's to capture the performance without as much SWINGING, just cue once actor hits their mark. (actor swivels on chair into position)