

# *American High* Teacher's Guide

## Lesson One: Creating Great Audio for Video

**Target Audience:** High School Students

**Subject Area:** Media Arts Production

**Objective:** Students will learn the basic concepts necessary to produce broadcast quality audio recordings of human speech (which can then be used in professional radio or television productions).

**Equipment:** Video camera with Microphone Jack  
Lavalier Microphone that is compatible with selected Video Camera  
Headphones for Video Camera  
Tri-pod for Video Camera  
Video monitor with playback cable attached to Video Camera  
Videotape stock that is compatible with selected Video Camera

### **Concepts:**

- (1) In TV, sound is much more important than most people imagine. It doesn't matter how captivating the action or how beautiful the images. If our viewers can't hear what the on-screen person is saying, then we've failed our viewers miserably.
- (2) Source:Ambience Ratio. This is a fancy term that means that the dialogue that we **want** to record (the "Source") exists in a world of competing sounds that we **don't** want to record (the "Ambience"). We want to make this ratio as high as possible.
- (3) Signal: Noise Ratio. This is a fancy term that means that the sound that we **want** to hear when we play back the recording (the "Signal") exists in a system of competing sounds in the sound recording system that we **don't** want to hear (the "Noise"). We want to make this ratio as high as possible as well.

### **Lesson Procedure:**

- (1) **Professional Quality Audio and Video.** Ask your students to name examples of reality TV and "home video" programs on TV. After they make a list, ask them about production quality of different shows--what's the advantage or disadvantage of "home video" programs? Hopefully sound/video quality will come up. Explain that your students are going to learn about ways to create high-quality footage with the same equipment that many amateur or semi-professional videographers use. Screen Show 1 of *American High* ("You Only Live Once") to see that students their age can produce broadcast quality audio. Show selected video diaries from the show: E.g. Morgan's "porno porno porno" manifesto (00:40-01:00), Kiwi talking about his fears (18:47), Sarah talking about how she is torn between wanting Robby to go off to college and the desire to keep him at home (21:35).

- (2) **To illustrate the importance of sound to the video image.** While your students watch, set up the camera about ten feet away from yourself and start recording. Start talking about the concepts you're demonstrating—namely the importance of good sound for TV, Source:Ambience ratio, and mic placement. Place a boom box close to the camera's built in microphone and turn on some music. Play the music loud enough so that it will overpower your voice in the video recording. But not so loud that the students can't hear what you're saying in the room. Walk around the room, turning away from time to time, from the camera's built in microphone. Play the tape back for the students. Your monologue will be unintelligible on playback (while the music is on), making the recording pretty worthless.
- (3) **To illustrate how to get a great Source:Ambience ratio.** At this point your students should understand what is source and what is ambience. Ask them to brainstorm ambient noise sources for different settings--outside/urban, outside/nature, house, office building, etc. They might also look at video segments from American High and reflect on the possible ambient sources the filmmakers had to contend with. In Show #1, look at Robby driving and talking (02:23). Also Robby following Sarah in a crowded hallway (02:58). Ask your students to brainstorm ways to reduce the ambience in these situations. You should then explain that the ratio may also be improved by increasing the source noise. They should talk about ways to do this (lavalier mic pinned to clothing, interviewer with handheld mic getting as close as possible to the interviewee, and using a boom mic) Then, ask students to work together to create examples of poor source: ambience ratio, and an improved ratio in the same setting. Students will learn that the path to a good Source:Ambience ratio includes placing the mic as close as possible to the source, choosing a quiet place, turning off ambience producing appliances, and making the source louder at its origin. Encourage students to listen carefully and be assiduous in their pursuit of a good Source:Ambience ratio.
- (4) **To illustrate how to get a great Signal:Noise ratio.** Create a recording situation with a horrible Signal:Noise ratio and have the students improve upon the situation. Students should be encouraged to wear headphones to monitor the sound critically as they improve the Signal:Noise ratio. For example, set up an interview using a lavalier microphone and an interviewee wearing a jangling metal necklace. Help the students to recognize that the necklace has to go—it's creating unwanted "mic handling" noise. Have the interview fondle the mic cable to create unwanted cable noise that the students can recognize and eliminate. Have students attach the mic to a mic cable with a "short" in it (if you can find one). Encourage students to realize that the unwanted hum, buzz or crackle thus produced can be eliminated by replacing the defective cable with a better one. (If you have a very sophisticated camera with a VU-meter, you can introduce the twin Signal:Noise ratio evils of hiss and distortion.) In summary, students should recognize that the Signal:Noise ratio can be improved by checking out the right gear thoroughly and by making adjustments during the recording.

### **Extension Activity & Evaluation Checklist:**

Allow students to work in pairs to interview one another at another location. Have them bring the tape into the classroom for a group critique. Evaluate each tape in terms of audio quality and intelligibility by addressing what the students did...

#### (1) Source:Ambience Ratio

- a. Did they select a relatively quiet place?
- b. Did they eliminate unwanted ambience? (closing windows, turning off appliances)
- c. Was the microphone placement appropriate?
- d. Did the subject speak loud enough?

#### (2) Signal:Noise Ratio

- a. Did they select a relatively "dead" acoustic environment? Or did they improve upon it?
- b. Was there mic handling noise?
- c. Was there wind noise?
- d. Were there other system noises (buzz, hum, crackle)?
- e. (Was there distortion or hiss?)

### **Recommended Reading and Reference Links:**

Schroepel, Tom. *The Bare Bones Camera Course for Film and Video* available from <TomSchroepel@worldnet.att.net

The Digital Filmmaker's Resource Site: <http://www.2-pop.com/>

Exposure: The Internet Resource for Low Budget Filmmakers:  
<http://www.exposure.co.uk/>

Adita Video, Inc. Links to Video Resources: <http://www.adita.com/links.htm>

Videomaker Magazine's Website: <http://www.videomaker.com/scripts/index.cfm>

**About the Author:** Jonathan Mednick is both an award-winning filmmaker and an experienced educator in the fields of film/television production and media studies. This past year, Mednick was a producer and director on the critically acclaimed PBS TV series *American High*. Mednick's role on *American High* included teaching video production to the students at Highland Park High School and supervising the making of the student-produced video diaries that are featured so prominently in the show. Mednick's latest film, *Dita and the Family Business* -- a personal documentary about the family behind New York City's fabled Bergdorf-Goodman Department Store -- will begin its theatrical run in New York's Film Forum in September 2001. Jonathan Mednick is currently teaches film directing and producing at the University of Central Florida. He has also taught media production at New York University, Wesleyan University, and at the University of Iowa.