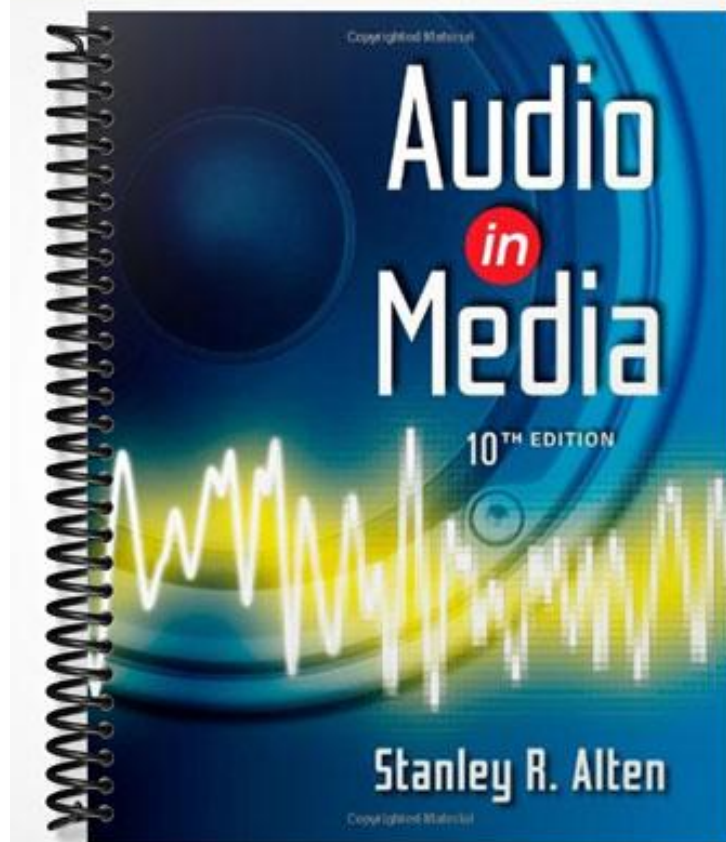


TEST BANK



INSTRUCTOR'S MANUAL WITH TEST ITEMS

FOR STANLEY ALTEN'S

Audio in Media

TENTH EDITION

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About the Manual

This manual was written to assist the instructor in the classroom presentation of material in *Audio in Media*, 10th edition, by Stanley R. Alten. Each chapter in the book has a corresponding chapter of teaching materials in this manual. The teaching materials consist of the chapter's outline, objectives, and key terms, in addition to exercises and test items. The author wishes to acknowledge the contribution of Heather Polinsky and previous editors, some of whose material from the Instructor's Manual to previous editions is used here.

Chapter 1 — Sound in Production

Chapter 1 Outline

1. The Importance of Sound in Production
2. Evaluating the Finished Product
 - A. Intelligibility
 - B. Tonal Balance
 - C. Definition
 - D. Spatial Balance and Perspective
 - E. Dynamic Range
 - F. Clarity
 - G. Airiness
 - H. Acoustical Appropriateness
 - I. Source Quality
3. Production Values

Chapter 1 Objectives

The student should be able to:

1. Recognize the importance of sound to his/her sense of the world around him/her;
2. Recognize the importance of sound to media productions whether they include only aural components or both aural and visual components;
3. Evaluate the basic aural quality of finished media products;
4. Evaluate basic differences in aural quality between similar media products with respect to intelligibility, tonal balance, definition, spatial balance and perspective, dynamic range, clarity, airiness, acoustical appropriateness, and source quality;
5. Identify the basic problems of media products with deficient audio quality and the basic merits of media products with superior audio quality;
6. Understand the importance of production values to a media product.

Chapter 1 Exercises

1. Ask students to identify and describe the sounds that cause different emotions in them—what sounds give comfort, cause anxiety or fear, make them happy.
2. As a homework assignment, ask students to identify 10 sounds and give the cognitive and affective information contained in each. The following table could serve as a guide.

| Sound | Cognitive Information | Affective Information |
|--------------------|------------------------------|------------------------------|
| 1. clock alarm | time to wake up | regret |
| 2. bark | large dog nearby | possible danger |
| 3. thunder clap | storm approaching | anxiety |
| 4. phone ring | someone calling | curiosity |
| 5. school bell | class is over | relief |
| 6. wristwatch beep | 9 o'clock | embarrassment |
| 7. doorbell | unexpected visitor | annoyance |
| 8. tire screech | car suddenly stopping | fear |
| 9. microwave ding | dinner's ready | anticipation |
| 10. kiss | she/he likes me | elation |

3. Pair students and give them an abstract concept (ex. Courage, Satisfaction, Determination, Frustration, Relaxation, Love, Hate, etc.). Have the pairs of students come up with sounds defining the concepts, then share and discuss with the class.
4. Because visual stimuli contain much information, research has shown that this may actually interfere with auditory cognitive processing. One way to introduce students to a critical evaluation of sound is to perform the following class exercise. Ask students to be very quiet for about 60 seconds. Turn off the lights in the classroom but ask students to close their eyes as well and try to identify each sound they hear. The number and variety of sounds that are normally masked is truly amazing. Have students list all of the sounds that they were aware of. Clock ticks, paper rustles, footsteps, and light-fixture hums are examples of some of the sounds discovered by students participating in this exercise.
5. Have students go outside and repeat the exercise above. Have them close their eyes and listen for one or two minutes and then list the sounds they can remember. Insects, birds, water sounds, lawnmowers, and distant speech are examples of sounds that may be discovered by students participating in this exercise.
6. Find a radio drama; there are many to be found on the internet. Have students listen to it and reflect on the images in their minds while listening to the program.

7. Watch an impacting scene of a movie without sound. Discuss what the sounds that the students heard in their minds. Then, watch the scene with the sound.
8. Play radio and/or television commercials of varying quality and grade the quality of each spot. Have students discuss what is done well and what needs work. Point out that when there are no problems, it sounds normal—good production value goes unnoticed.
9. As homework, have students play their favorite song and describe the aural qualities that they like about the music to begin to get students to critically listen to the production value of music.
10. Using the above exercise for a class exercise, you can have students play their favorite songs and have other students articulate why they like and do not like the songs based on aural qualities to example how production value is a matter of taste and the biases that brings.

Chapter 1 Test Items

1. The senses of sound and vision:
 - a. are independent and separate from each other.
 - * b. are complementary and support each other.
 - c. cannot operate without each other.
 - d. are not important to media production.
2. Hearing sounds often creates mental images when visual images are not present.
 - * a. true
 - b. false
3. Audio equipment, such as loudspeakers, will never affect the aural quality of a media product.
 - a. true
 - * b. false
4. The tonal balance of a finished media production refers to:
 - a. the ability to distinguish the words and meaning.
 - b. the definition of the different sound elements.
 - c. the audibility of the loudest and softest sounds.
 - * d. the relative constancy of bass, midrange and treble frequencies.

5. When all sonic elements are unambiguously localized and well-placed in the stereo or surround sound field then proper ____ has been achieved.
 - a. dynamic range
 - b. source quality
 - * c. spatial balance and perspective
 - d. tonal balance

6. The range between the softest and the loudest signal a system can reproduce without distortion is:
 - a. acoustical appropriateness.
 - * b. dynamic range.
 - c. source quality.
 - d. spatial balance and perspective.

7. Which of the following best describes clarity when evaluating the sound of a media product?
 - a. the ability to distinguish the words and meaning
 - * b. noise-free and distortion-free recording
 - c. appropriateness of the acoustic environment for the recording
 - d. relative constancy of bass, midrange and treble frequencies

8. Which of the following is true about creating good production value:
 - * a. If the production is quick and good then it will not be cheap.
 - b. If the production is cheap and good then it can be quick.
 - c. If the production is quick and cheap then it can be good.
 - d. If the production is good then it can be quick or cheap.

Chapter 2 — Sound and Hearing

Chapter 2 Outline

1. The Sound Wave
2. Frequency and Pitch
3. Amplitude and Loudness
 - A. The Decibel
4. The Healthy Ear
5. Frequency and Loudness
 - A. Equal Loudness Principle
 - B. Masking
6. Velocity
7. Wavelength
8. Acoustical Phase
9. Timbre
10. Sound Envelope
11. Analog and Digital Sound
12. The Healthy Ear
13. Hearing Loss
 - A. Safeguards against Hearing Loss

Chapter 2 Objectives

The student should be able to:

1. Explain the principles of a sound wave;

2. Identify various components of physical sound and their corresponding psychological correlates;
3. Describe the frequency ranges of the 10 octaves audible to human hearing and their sonic characteristics;
4. Explain the equal loudness principle;
6. Explain how the acoustic phase relationships of sound waves affect amplitude;
7. Describe the four stages of the sound envelope;
8. Recognize timbre;
9. Explain the relationship of frequency and pitch;
10. Describe the basic difference between analog and digital audio processes;
11. Describe the basic process of human hearing and the ear;
12. Recognize the signs and symptoms of hearing loss and how to prevent them.

Chapter 2 Key Terms

| | |
|--------------------------|-------------------------------|
| sound wave | upper bass |
| elasticity | midrange |
| compression | upper midrange |
| rarefaction | treble |
| frequency | amplitude |
| cycles per second (cps) | decibel (dB) |
| hertz (Hz) | sound pressure level (dB-SPL) |
| kilohertz (kHz) | threshold of hearing |
| low end | threshold of pain |
| infrasonic | dynamic range |
| high end | equal loudness principle |
| ultrasonic | weighting network |
| pitch | phon |
| fundamental frequency | masking |
| sound frequency spectrum | velocity |
| octave | wavelength |
| bass | acoustical phase |
| low bass | constructive interference |

destructive interference
sine wave (pure tone)
waveform
timbre
inharmonic overtone
sound envelope
attack
initial decay
sustain
analytical listening
release
pulse-code modulation (PCM)
analog-to-digital converter (ADC)
digital-to-analog converter (DAC)
outer ear
middle ear
inner ear
temporary threshold shift (TTS)
decibel
tinnitus

Chapter 2 Exercises

1. In class, strike a tuning fork and hold the end against objects like a desk or cabinet. This demonstration illustrates the principle of resonance and conductance of a sound wave.
2. Using a parametric equalizer, boost and attenuate various frequencies throughout the frequency spectrum and note their effects on sound.
3. Demonstrate the SPL of various sound sources using a sound-pressure-level meter.
4. Demonstrate the equal loudness principle by playing a recording at low and high sound levels and listening to how perception of the bass and treble are affected.
5. Demonstrate the in-phase and out-of-phase conditions using two sine waves and miking two acoustic sound sources.
6. Demonstrate the sound of speakers being both in phase and out of phase by wiring a pair of speakers both correctly and incorrectly.
7. Utilizing a digital audio workstation or audio console, demonstrate the process of phase reversal.
8. Listen to different sounds and instruments to demonstrate differences in sound envelopes. Examples might include drums, violins, cellos, etc.
9. Demonstrate the waveforms of various sounds utilizing a digital audio workstation and comparing and contrasting waveforms
10. Take a piano recording and edit out the attacks of the notes.
11. Show students examples of different types of earplugs. Discuss the various types in relation to their construction, effectiveness, cost, and application.
12. Students should listen to and record sounds in nature such as birds, water, insects, etc., and make analytical and critical listening summaries
13. Compare music from an analog source (vinyl record or analog tape) and a digital source (CD, computer, etc.).

14. Have students compare downloaded MP3 and CD versions of the same songs for audio quality. A discussion of the downloading phenomenon should spark enthusiasm for this exercise.

Chapter 2 Test Items

1. A sound wave is a vibrational disturbance of:
 - * a. molecules.
 - b. electromagnetic radiation.
 - c. electrostatic radiation.
 - d. a transverse wave.

2. Sound propagates through the air because:
 - a. it is omnidirectional.
 - b. it has no tangible structure.
 - * c. of the elasticity of air.
 - d. it cannot travel through any other medium.

3. The point in a sound wave at which a partial vacuum occurs is the point of:
 - a. compression.
 - * b. rarefaction.
 - c. elasticity.
 - d. propagation.

4. The number of times in a second a vibration completes one cycle is known as its:
 - a. attack.
 - b. velocity.
 - * c. frequency.
 - d. amplitude.

5. The frequency of a sound wave is perceived as:
- * a. pitch.
 - b. velocity.
 - c. loudness.
 - d. wavelength.
6. Hertz is the term used to designate:
- a. octave.
 - b. velocity.
 - * c. cycles per second.
 - d. tempo.
7. The frequencies between 20 Hz and 80 Hz are considered the:
- * a. (low) bass.
 - b. midrange.
 - c. presence range.
 - d. treble.
8. Most precisely, pitch:
- a. is the same as frequency
 - b. is a term used by musicians while audio professionals use the term frequency
 - * c. is the psychological perception of frequency
 - d. or frequency are the same as amplitude
9. Acoustic sound pressure level (SPL) is measured logarithmically:
- a. to account for variations in pitch.
 - b. because frequency is expressed as a logarithm.
 - c. because of periodic changes in atmospheric pressure.
 - * d. to compress loudness measurement into manageable figures.
10. The range of the difference in decibels between the quietest and loudest sound is called:
- a. envelope.
 - * b. dynamic range.
 - c. timbre.
 - d. sound pressure level.
11. The equal loudness curves demonstrate the human ear's relative sensitivity to:
- * a. midrange frequencies.
 - b. high frequencies.
 - c. low frequencies.
 - d. bass frequencies.

12. The response curve of the human ear is relatively flat or equally sensitive from the bass through the treble ranges.
- a. true
 - * b. false
13. Each frequency has a wavelength.
- * a. true
 - b. false
14. The time relationship between two or more sound waves at a given point in their cycles is called:
- * a. acoustical phase.
 - b. cycles per second.
 - c. wavelength.
 - d. sound pressure level.
15. The elements of a sound envelope are?
- * a. attack, initial decay, sustain, release
 - b. timbre, frequency, pitch, amplitude
 - c. dynamics, frequency, velocity
 - d. decay, pitch, masking
16. Analog recording systems transduce acoustic energy into:
- a. finely tuned vibrating air molecules.
 - b. electrical and chemical signals to be sent to the brain.
 - * c. continuous electrical signal capable of extremely fine resolution.
 - d. computerized binary code.
17. Digital audio systems transforms audio signals into:
- a. harmonics and overtones.
 - * b. binary code.
 - c. pure tones.
 - d. electrical energy.
18. Prolonged exposure to loud sound can bring on:
- a. the threshold of pain.
 - b. cochlear synapsis.
 - c. inner ear syndrome.
 - * d. tinnitus.

19. The human ear converts mechanical vibrations into electrical and chemical signals to be sent to the brain. The part of the ear that begins this transformation is the:
- a. auditory cortex.
 - * b. cochlea.
 - c. incus.
 - d. tympanum.
20. Premature hearing loss is a significant problem for American teenagers and adults.
- * a. true
 - b. false

