**Film Synchronized Sound Recording Course Syllabus**

**Part I** **MetaEcho** (10 minutes). Introduction to synchronous recording equipment. The MetaEcho platform includes a complete set of recording equipment (including a shotgun microphone, boom pole, recorder, and monitoring headphones). The instructor introduces the functions and characteristics of various devices in a virtual environment, as well as the conditions for using these devices in synchronous recording, precautions, and their advantages and disadvantages. Additionally, the instructor will personally use these devices in the virtual environment, demonstrating to students how to use the boom pole during shooting, and how to use the microphone to locate sound sources.

**Part I** **PPT** (10 minutes) Introduction to synchronous recording equipment, including the shotgun microphone, boom pole, recorder, and monitoring headphones. The instructor will explain how to use synchronous recording equipment and the features of these devices, illustrated with detailed photos of the process. There are no physical synchronous recording devices present during this process.



Shotgun Microphone



Boom Pole



Sony Recorder



Monitoring Headphones

**Part II** (10 minutes) This section introduces three types of sounds under synchronous recording conditions: human voice, sound effects, and music. Using the sound-producing equipment of the MetaEcho platform, the instructor will demonstrate to students how these different types of sounds are produced and their uniqueness, while also allowing students to observe the synchronous recording process.

Subsequently, the instructor will introduce two concepts.

Concept 1: Peak Level—The concept of peak level is crucial for film synchronous recording because it ensures that the recorded sounds are as close to the original as possible without distortion. This fine adjustment of volume control is essential for the auditory experience of the audience, as controlling the peak level can produce more balanced and realistic audio effects.

Concept 2: RMS Level—RMS Level is an important metric for measuring the average power level of a sound, focusing on the overall loudness and stability of the sound. Unlike peak level, which only reflects the maximum loudness at any instant, RMS Level ensures consistency and naturalness of sound across different scenes, helping to prevent auditory fatigue and providing a more balanced and realistic audio experience. By controlling the RMS Level, it's possible to adjust the intensity of the sound while maintaining clarity, making the auditory experience more comfortable and authentic. The instructor will adjust the peak levels of the recording equipment in the system, record synchronous sounds of human voices and sound effects, and let students experience the differences in sounds at -6dB, -12dB, and -18dB to understand the impact of different peak levels on sound quality and auditory perception.

**Three types of sounds**

1. **Human voice**

The human voice, with its wide range of tones and emotions, serves as the primary means of dialogue and narration in film. It's characterized by its unique ability to convey subtle nuances and emotional depth, making the accurate capture of voice critical in film production.

1. **Sound effect**

Sound effects are artificially created or enhanced sounds that help in storytelling by adding realism or enhancing the film's atmosphere. From the rustling of leaves to the roar of a jet engine, sound effects are meticulously crafted and synchronized to match the on-screen actions, thereby enriching the cinematic experience.

1. **Music**

Music plays a pivotal role in setting the mood, developing characters, and advancing the story. Whether it's a dramatic orchestral score or subtle background music, the emotional impact of music on the audience is profound and multifaceted, making it an indispensable element in film**.**

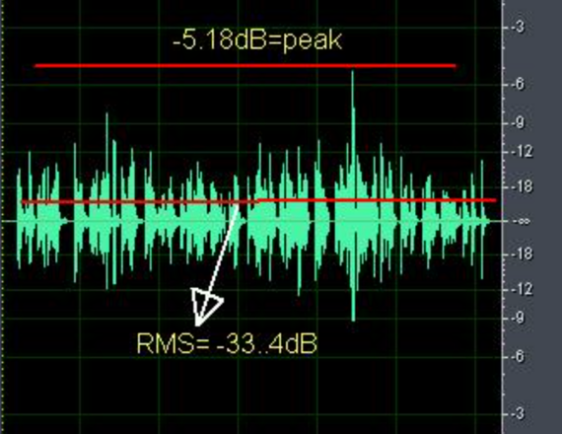
**Two concepts**

1. **Peak Level and Its Importance**

The concept of peak level is crucial in the realm of synchronous recording. It refers to the maximum volume level a sound reaches during recording, measured in decibels (dB). Properly managing peak levels is essential to prevent distortion and ensure that the sound is as true to the original as possible. This adjustment is key to producing a balanced and realistic auditory experience.

1. **RMS Level and Its Importance**

The concept of RMS (Root Mean Square) Level is fundamental in audio production, especially under conditions of synchronous recording. It represents the average power of a sound signal, measured in decibels (dB), over time. Unlike peak levels, which indicate the maximum volume a sound can reach, RMS levels provide a more comprehensive understanding of the sound's perceived loudness and energy. Properly managing RMS levels is crucial for ensuring the audio's overall loudness is consistent and comfortable for the listener, avoiding both fatigue from excessive volume and strain from trying to hear sounds that are too soft. This careful adjustment helps in creating an auditory experience that is both engaging and true to life, enhancing the listener's emotional and immersive experience.

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RMS Level and Peak Level

**Part III MetaEcho** (20 minutes) delves deeper into the characteristics of the three types of sounds mentioned in Part II and their synchronous recording techniques. Under the guidance and demonstration of the teacher, students will practice synchronous recording in groups within the MetaEcho platform, and record ambient sounds coming from outside the window in MetaEcho's provided virtual set.

**Part III PPT** (20minutes) delves deeper into the characteristics of the three types of sounds mentioned in Part II and their synchronous recording techniques. Delve deeper into the characteristics of the three types of sounds mentioned in Part II and their synchronous recording techniques. The teacher will play video examples of the three types of sounds in a PowerPoint presentation for the students to observe and learn from.

**Three Types of Voices**

1. **Dialogue:**

Dialogue is the most common type of human voice in film and television, directly reflecting the communication and emotional exchange between characters. When recording dialogue, clarity and the natural expression of the voice are crucial. Special attention should be paid to avoiding background noise interference and ensuring proper microphone placement to capture the best sound quality.

1. **Voiceover:**

Voiceovers are often used to provide background information, explain scenes, or express a character's inner thoughts. The recording of voiceovers requires clear voice and moderate speed, usually done in a quiet environment to ensure the purity and effectiveness of the sound.

1. **Various Character Voices:**

Including characters' laughter, crying, or other special sound effects, recording these sounds needs to capture the subtle differences in characters' emotions, enhancing the emotional depth of the story.

**Three Types of Sound Effects.**

1. **Ambient Sound Effects:**

Such as the sound of wind, rain, or city backgrounds, ambient sound effects set the tone for the scene, creating a realistic atmosphere. When recording ambient sounds, their compatibility with the scene and the appropriateness of their volume should be considered.

1. **Action Sound Effects:**

Such as footsteps, door opening and closing, action sound effects add a sense of dynamism to the scene. These effects are usually recorded synchronously on the set or added in post-production to enhance the realism of visual actions.

1. **Digital Sound Effects:**

Created with audio software, such as thunder, explosions, etc., digital sound effects add special acoustic effects to the scene, enriching the auditory experience.

**Three Types of Music**

1. **Background Music:**

Used to establish the atmosphere of a scene, background music should be closely connected with the scene's mood, helping to express emotions not directly conveyed by dialogue or visuals.

1. **Theme Music:**

The theme music of a film or television production runs throughout, reflecting the core theme and emotional tone of the work.

1. **Mood Music:**

Music that changes according to the needs of the scene, used to strengthen specific emotions or atmospheres, such as tension, sadness, or joy.

**Identification and Management of Environmental Noise**

**1.Identifying Environmental Noise**:

Learn how to recognize different types of background noise.

Noise Management Strategies: Introduce techniques and tools to reduce or eliminate environmental noise. - Line Interference During Recording: Sources of Interference like Electric Hum: Identify and understand common causes of interference.

**2.Interference Mitigation Methods**:

Practice how to reduce line interference, including the selection of equipment and wiring techniques. - Sound Collection Quality : Causes of Sound Distortion: Learn about common factors that lead to sound distortion.

**3.Improving Recording Quality:**

Master techniques to ensure the clarity and quality of recorded sound. - Sound Interference in Live Recording: Noise from Accessories: Identify possible sound interferences caused by actors’ accessories and learn how to avoid them.

**4.On-site Recording Strategies**: Discuss methods to reduce interference from accessories and other on-site factors. -Handling Sound Issues in Actors' Performances

**5.Volume Differences:** Learn how to balance the volume of dialogue between different actors to ensure a uniform recording. Off-axis Recording Issues: Explore the recording issues caused by actors turning their heads or moving, and learn corresponding solutions.

**Part IV** **MetaEcho** (10 minutes) introduces the collaboration between sound recordists and cinematographers. In real-world filming, the closer the microphone is to the actor, the higher the quality of the recorded sound. However, to maintain the aesthetics of the frame, the microphone needs to be kept out of the shot, as the cinematographer adjusts shooting angles and distances based on the needs of the scene. This requires precise coordination between the sound recordist and the cinematographer to ensure high-quality sound recording while avoiding the accidental appearance of the microphone in the frame. Students will simulate this coordination within the MetaEcho system, practicing the synchronous sound recording of dialogue scenes as actors walk through the camera frame.

**Part IV** **PPT** (10 minutes) introduces the collaboration between sound recordists and cinematographers. In actual filming, the closer the microphone is to the actor, the higher the quality of the recorded sound. However, to maintain the aesthetics of the frame, the microphone needs to be kept away from the lens, as the cinematographer adjusts shooting angles and distances based on the needs of the scene. This requires precise coordination between the sound recordist and the cinematographer to ensure high-quality recording while avoiding the accidental appearance of the microphone in the frame. In this part, the teacher will show students images to illustrate this.

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This picture above illustrates how the mic is kept as close to the actors as possible while remaining out of shot.



You can position the mic above the actors heads. You can also position the mic below, aiming upwards, if the shot/scene allows.