Chapter 8: Audio: Sound Pickup

How Microphone Hear:

● Microphone Types by how they hear:

○ Sound-Generating Elements:

■ Dynamic microphone: which is also called moving-coil microphones

■ Condenser microphone: which is called electret microphones and

capacitor microphones, they are more sensitive to physical shock.

■ Phantom Power: supplying power to the mic’s preamp without a battery.

■ Ribbon Microphones: these microphones have the similar in sensitivity

and quality to condenser mics.

○ Pickup Patterns:

■ Pick-up Pattern: territory within which a microphone can hear equally.

■ Polar Pattern: a two-dimensional representation

This lesson explores and explains different aspects of audio pick-up and control in television productions.

Sound Controls and recording:

Major Audio Production Equipment:

● Audio console:

Regardless of any individual models; analog or digital; all audio consoles, or audio control boards, they are built up to perform in five major functions:

■ Input: selective, preamplify, controllable of the volume in various incoming signals. There are multiple inputs on a studio console that accept a variety of sound sources.

■ Mixing: combining and balancing two or more incoming signals. Mixing or combine signals from different various inputs

■ Quality Control: Manipulating the sound characteristics. Shaping the character of sounds

■ Output: routing the combined signals into a specific output. Mixed and quality processed signal then routing to output

■ Monitor: listening to the sounds before or as the signals are actually recorded or broadcasted.

○ Audio Mixer:

■ Differs from an audio console in that it normally serves only the input and mixing the functions for a highly limited number of inputs.

● Audio - Recording Systems:

○ Pocket recorder:

○ Digital Cart system:

○ Larger multi - track recorders

○ CD Players:

Basic Operation for studio audio:

● Audio Control Booth: a soundproof room which is adjusted to a larger program control room

● Audio System calibration

● Clipping in Digital sound

● Live Studio mixing

Basic Operation for Field Audio:

● Keeping Sounds separated

● Using the AGC in ENG/EFP

● Using an XLR pad

● ENG/EFP Mixing: Stereo, Surround sound, and Sound Aesthetics

● Spatial Sound: how sound can help us define screen space

● Stereo Sound: defining the horizontal audio field.

● Surround sound: produces a sound field in front of, sides of, and behind the listener.

● Binaural Sound: method of the sound of the recording that uses two omnidirectional mics stuck into a dummy head.

● Binaural sound for 3D: 7.1 surround sound

Basic Aesthetic Sounds Factors

● Environment:

● Figure/Ground

● Perspective

● Continuity

● Energy

Important points……..

* The major production equipment for studio audio includes the audio console, the patchbay, analog and digital tapebased recording systems (VTR, ATR, and DAT), and tapeless recording systems (digital cart, mini disc and flash memory devices, hard drives with removable or fixed disks, and optical disc systems, such as CDs and DVDs).
* Audio consoles perform five major functions: input—select, preamplify, and control the volume of the various incoming signals; mix—combine and balance two or more incoming signals; quality control—manipulate the sound characteristics; output—route the combined signal to a specific output; and monitor—route the output or specific sounds to a speaker or headphones so that they can be heard.
* The audio control area of a television studio includes the basic audio control booth, which is used for the sound control of daily broadcasts. It houses the audio console, the patchbay, various recording and playback systems, high-quality speakers, a video monitor, and at least one computer that carries the essential in-house information.
* The basic audio operation includes: the audio system calibration, which means that all VU meters in the system must respond in the same way to a specific audio signal (control tone); volume control; and live studio mixing.
* Live studio mixing usually involves combining and balancing sounds while the production is in progress.
* In EFP the key to good field audio is keeping the various sound sources reasonably separate so that they can be properly mixed in postproduction.
* The automatic gain control (AGC) is a convenient means of keeping the volume within acceptable limits, but in its automatic amplification it will not distinguish between important sounds and unwanted sounds.