Becoming a master of EQ is like becoming a master painter. Sometimes you just have to throw some paint on a canvas and see how it works. – John Mills (Rochman, 2012)

EQUALIZATION (EQ)

EQ – Another Definition

- Equalization involves selectively boosting or cutting bands of frequencies to improve the performance of a sound reinforcement system. (Rochman, 2012)

Uses of EQ (Bartlett and Bartlett, 2009)

- Improve tone quality
- Create an effect
- Reduce Noise and Leakage
- Compensate for the Fletcher-Munson effect
  - The softer the noise the less bass we hear in it.
- To make a pleasing sound.
- Compensate for microphone placement
- Improve the tonal balance of a mix

Hardware Vs. Software

- In order to EQ, a user will need some type of device that will do the job.
  - Hardware
    - EQ section of a mixer.
    - Outboard Effects Box
  - Software
    - Plug-In in a Digital Audio Workstation.

Learn on Hardware First

- Most everyone has a mixer. It is the car radio. The minimum it will have is bass and treble or high and low. Some fancier cars might have midrange. Use this to start.
- Move to a real mixer board as we have today.
- Once a user has learned how to use hardware, the software side will be easier and more precise.

Guide to Making Your Recordings or Performances Better.

- The ultimate guide is YOUR EARS!!!!! If you like the way it sounds, then it is good. If you hate the way it sounds, then it is bad!!!!
- EQ is not hard and fast, but there are some definite ball park suggestions that make recordings and live performances sound better. Attached is a guide called the EQ Primer by Robert Dennis. Thank you for permission to copy and distribute this article.
  - I use this document all the time in my classroom. It is not set in stone, but will give really good suggestions on how to EQ your recordings or live performances.
- The user must take into consideration their microphone as they are using this guide. If the microphone has a major presence peak at 5khz, the user probably should not boost as much as the guide might say. Again, let your ears tell you what to do.

Types of EQ

- Filters: Attenuates sounds above or below a certain point. (Darby, 18)
  - High Pass Filters – Lets the higher frequencies pass
  - Low Pass Filters – Lets the lower frequencies pass.
  - Band Pass Filters – Lets only a certain range of frequencies pass. Think telephone.
  - Notch – Only cuts a certain range of frequencies
- Shelving EQ: amplifies or attenuates the main frequency selected, plus all frequencies beyond that point. (Darby, 18)
  - These types of equalizers are good for making an instrument sound a little brighter or darker overall, without affecting any one specific frequency. (Darby,18)
  - High and Low settings on the car stereo. What our mixer has.

Types of EQ Continued

- Parametric EQ a.k.a. (Peak/Dip)
  - Boosts or cuts a certain set of frequencies.
- Mixers may only give one or two pots or knobs for EQ. High and Low, just like your car.
  - Gain or Attenuator – Volume
  - Frequency Adjuster (Center point of the adjustment)
  - Bandwidth – How many octaves does it cover? Measured in Q. Bandwidth = Center frequency/Q. Q of 2 = ½ an 8va. Q of 3 = 1/3 of an 8va. (Darby, 19)

How to Use

- First, figure out what your mixer will do. Some mixers do not have all the fancy EQ that you might see other places. Some may be your car, which is a good place practice.
- Second assess your microphones frequency response.
- Third check the placement to see if it is in the right place.
- Fourth, listen to your sound that you are getting out of your performance speakers.
- Fifth adjust the sound coming out of your performance speakers to get the sound you want.

How to Make an Adjustment

- First describe the type of sound that is being produced.
- Second find the definition on the definitions page in the packet.
- Third look to see how to fix it.
- Fourth did it get better or worse.
  - If it sounds better, then the process is over or go on to another part of the sound.
  - If it is worse, try again.

How to Make Adjustments Continued

- Cannot find the problem, and you have a frequency selector? Try this:
  - Set the gain up 5-10 db.
  - Sweep the frequency selector until the desired sound is boosted.
  - Lower the gain back to zero
  - Boost or cut until the sound is pleasing.

How to Make Adjustments Continued

- If the boost or cut is more than ± 6db, then consider recording again.
- Consult the EQ Primer and Shure article for more detailed EQ tips.