Composition: Electronic Media I
Sept. 21, 2005
Filtering in Pro Tools

1. The following filtering technologies will be discussed in class:
   a. Bass, Treble, Midrange boost/cut knobs on mixers, home stereo, guitar amplifiers, and other commercial uses.
   b. Classic Filter (see Allis0n in class)
   c. Graphic Equalizer, (see B and K in class)
   d. Voltage-controlled filter (see Moog Synthesizer in class)
   e. Software EQ, see **Pro Tools** discussion below.

2. Basic Filter Theory:
   Source sound passes through a filter. The filter attenuates (reduces, cuts, rejects) selected frequencies, passes selected frequencies unaltered, or boosts (increases, amplifies) selected frequencies.

3. Compositional uses of filters:
   a. To clean up a sound, by removing rumbling bass, heavy midrange, piercing highs, etc.
   b. To modify, in a somewhat crude way, the timbre of a sound, making a dark sound light, and a light sound dark.
   c. To isolate a single sound from a complex signal for later compositional manipulation.

4. Types of Filters:
   a. Band Pass:  . Low fequencies are attenuated, middle frequencies are flat (passed, unaltered), and high frequencies are attenuated. Note the cut-off frequencies, Q (width of the band-pass), amplitude (or gain) of the band-pass, and center frequency. In **Waves**, this situation will be a little different, as discussed in class.

   b. Band Reject: This is the vertical inverse of the Band Pass Filter. Here, the Q represents the width of the band reject. In **Waves**, the Band-Pass function is often used as a band-reject function, as discussed in class.

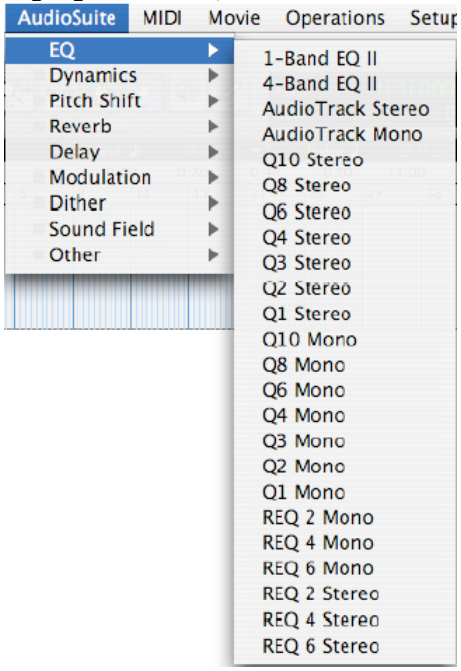
   c. Low Pass:  . High frequencies are attentuated above a cut-off frequency. In **Waves**, any filter plug-in can do this.

   d. High Pass:  . Low frequencies are attentuated below a cut-off frequency. In **Waves**, any filter plug-in can do this.

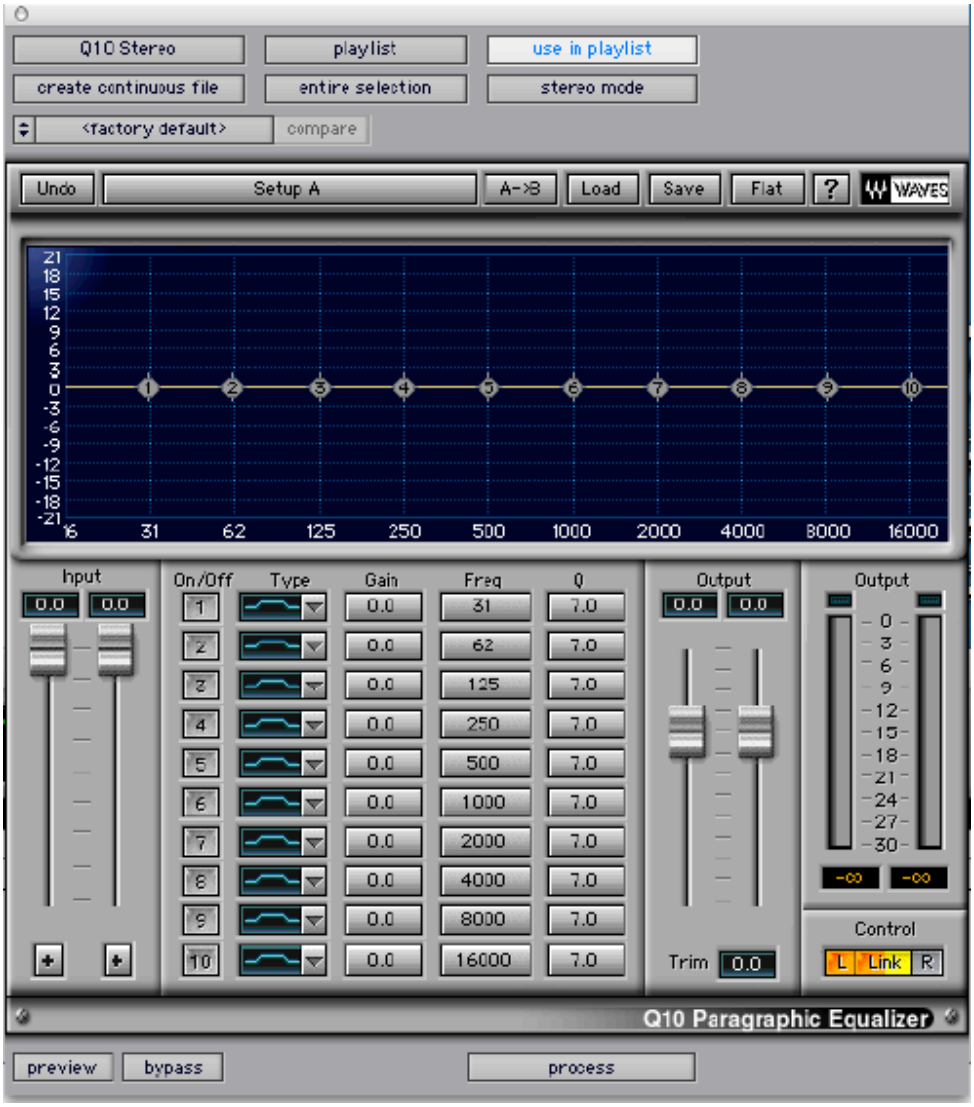
   e. High Shelf:  . High frequencies are boosted above a cut-off frequency. Compare to High Pass.

   f. Low Shelf:  . Low frequencies boosted above a cut-off frequency. Compare to Low Pass.

5. To use a filter in **Pro Tools**, do the following:
   a. Launch **Pro Tools** and import a mono or stereo sound, placing it in the edit window.
   b. Highlight the sound, then select AudioSuite>EQ>Q10 stereo or mono, as shown below:



5. c. A window like the one below will appear:



Note the following controls and function:

Load, Save, Flat:

Graphic Frequency/Time/Amplitude Window:

Input:

On/Off:

Type:

Gain:

Freq:

Q:

Output Sliders:

Output Meters:

Peak Indicators above Output Meters: