Composition: Electronic Media I
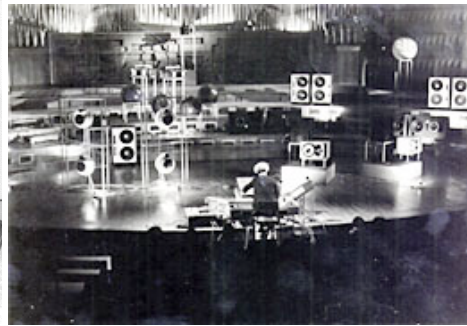**Sept. 26, 2005**
Sound Spatialization

1. The following sound spatialization formats will be discussed in class:
   a. Stereo
   b. Home theatre 5.1
   c. Concert hall surround (see example on the left, below)
   d. Acousmonium (see example in the middle, below)
   e. Sound Garden (see example on the right, below)

   EMS Class 2002   Francois Bayle Acousmonium in Paris   MOTUS Acousmonium in L'Aquila, Italy

2. The following spatialization aesthetic viewpoints will be discussed in class:
   a. Mono
   b. Stereo
   c. Diffusion of mono or stereo on multiple speaker systems
   d. Reverberation of stereo on multiple speaker systems
   e. Surround sound: fixed point-sources and moving point-sources

3. The following types of sound spatialization hardware will be discussed in class:
   a. Stereo CD or computer
   b. ADAT
   c. Multi-channel interface

4. The following audio system components for sound spatialization will be reviewed in class:
   a. Speakers
   b. Amplifiers
   c. Mixer

5. To use 8-channel surround sound in the studios, do the following:
   a. Set the Mackie mixer faders as shown below:
      Channel 1, busses 1-2 selected, pan left
      Channel 2, busses 1-2 selected, pan right
      Channel 3, busses 3-4 selected, pan left
      Channel 4, busses 3-4 selected, pan right
      Channel 5, busses 5-6 selected, pan left
      Channel 6, busses 5-6 selected, pan right
      Channel 7, busses 7-8 selected, pan left
      Channel 8, busses 7-8 selected, pan right

   b. Launch **Pro Tools**, create several mono or stereo tracks, import some mono or stereo soundfiles.

c. Select Display>Edit Window Shows>I/O View. The track controls will be expanded to include the i/o controls shown below.

d. Click on the second button from the top, shown here as "Analog 1-2." The following pop menus will appear:
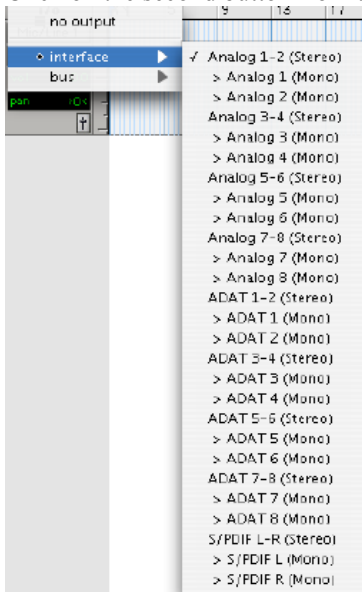

f. Note that output of Analog 1 will be sent to Mackie Channel 1, Analog 2 to Channel 2, Analog 3 to Channel 3, etc.
g. The options of mono vs stereo, ADAT, S/PDIF will be discussed.

6. In-class experimentation with 8-channel spatialization.

7. Create a mono aiff file for each track as follows:
    a. Highlight the time region to be written to an aiff file using the I-beam cursor, as shown in class.
    b. Select File>Bounce to Disk. A window like the one below will appear:
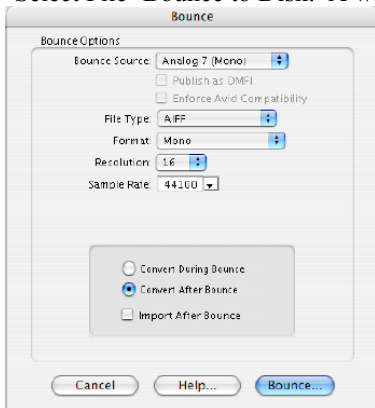
c. Note the following options: Bounce source, File Type, Format, Resolution, Sample rate. Click "Bounce" and keep track of where the new soundfile goes.

8. For performances outside of the studios, create a data CD of your 8 mono aiff soundfiles and label them with diffusion information (Front Left, Rear Right, etc.). The performing venue will then import these files into a multi-channel software/hardware system and assign the tracks to your requested speakers.