DESN 384 Week Six Assignments
Designed Sounds and Foley

Suggested Order of Activities

Listen *to the Lecture Sound Design Overview, while viewing the associated slides. And answer the associated study questions listed at the end of this document.*

Listen *to the short Lecture on Ben Burtt's Famous Designed Sounds.*

On-Line Reading*: follow "web resource links" on drbraukmann.com, examine and be prepared to answer the study questions listed under each link on the web resource links page.*
SD1 Designing Sounds
SD2 The Sound Designer in Major Films
SC3 Recording Foley Sounds

View *the Lecture/Demo Video: Creative Sound Tools Demonstration. And answer the associated study questions listed at the end of this document.*

View *the Lecture/Demo Video: Automation. And answer the associated study questions listed at the end of this document.*

Complete the assignments and upload eight files (7 MP3s and one document)

Assignment Part 1: Bring together recordings + generated sounds + editing tools to create 4 new sounds for an "outer space blockbuster."

*• **Grading Criteria** are outlined in the at the end of assignment 2, and will answer questions you may have.*
*• **Documentation is Required.** Part 3 describes the simple illustrations required for each of your six creations.*

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In this assignment you will design four *never-before-heard* sounds based around *recordings that you will make*. Build up your designed sound with two or more tracks mixed into the final sound, plus effects.

Just like Ben Burtt's designed sounds, the simple recordings you start with might be based on anything from - as examples: an egg breaking, vacuum cleaner running, potted plant being rustled, soda can being rolled, coin being wobbled. Or whatever else your imagination suggests. *Recording these sounds with your own system is important.*

In each case, using your recorded sound as a base, modify it by using such powerful effects (in Audacity) as *change pitch, speed and tempo, reverse, and PaulStretch*. Also *chorus, phaser, echo, or wahwah*, can add interesting textures.

Enhance your sound by ***adding a layer*** of noise and/or tones generated by Audacity. You've used white and pink noise in Audacity. But check out "chirp" "Pluck" and "Risset Drum" also. These dynamic effects change frequency over time.

Manipulate sounds using effect plugins from Audacity or Studio One or Audition. Effects such as *Change Pitch, Change Speed* and *Change Tempo*, produce amazing sounds. Your original recordings (whether egg breaking or vacuum cleaner or ??) should be practically *unrecognizable* by the time you are done.

EQ *automation* (found in Studio 1 or Audition) is a powerful tool to make an EQ effect move up and down the frequency range, or move from boost to cut over time. (For example, try assignment 4 first, and easily create a realistic howling wind.) Other effects in Studio One such as *Ampire*, which can push your sound through an electric-guitar-like distortion box, offer additional creative options.

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The List of Needed Sounds to Choose From
Choose any <u>four</u> of the object or Foley-type sounds listed below A - R, and make your versions of those sounds. Some have specific time requirements. "Dry" means add no reverb.

A. A portable, lunchbox-sized **disintegration ray** that uses vibrating unobtainium crystals to cause concrete in the immediate vicinity to crumble, for instance to make a handy hole in a concrete wall.

B. A personal **transportation device** that uses super-compressed gas to power four little gas motors, one on each wheel. We need 6 seconds of it moving about.

C. A super-fast **handwriting machine** that you can put a ball-point pen into, and will "hand-write" invitations or addresses. It uses little electric motors. One invitation shouldn't take longer than 5 seconds.

D. A **ship cleaning device** that is is pulling sticky Kuiper Belt space leeches off of the hull of our space ship. The leeches love to eat metal and are hard to get off!

F. An air driven **elevator** starting & traveling & coming to a stop - exactly 10 seconds – This would be dry.

G. A 16-rocket **circular shuttle engine** that is mis-firing - exactly 10 sec. – this would be dry.

K. A ***huge*** three-legged **walking machine dragging a bus** - exactly 10 seconds.

M. An **underwater submarine cleaner** accidentally sucking up some large rocks - exactly 10 seconds – This would include some underwater reverberance.

N. A **solar wind generator** that would work, suspended in the atmosphere, on a planet with a thin atmosphere - exactly 10 seconds – This would have to be dry, wouldn't it?

O. An oil **pipeline cleaner** that crawls along the inside of a pipe, cleaning it as it goes. This would include the sound bouncing off the inside of the 3' wide pipe - exactly 12 seconds

P. A **cockroach catcher**, a very small robot that tracks down and subdues moderate to large size insects – include exactly 12 seconds of it searching about. – This would be dry.

Q. A **garbage disintegrater** that revs up and smashes the molecular structure, turning anything into a small pellet that then drops into a metal tray.

R. The mating call of a lonesome **pterodactyl with a head cold**. 6 seconds.

Assignment Part 2: Additional Space Sounds – *these <u>can</u> be built of entirely generated noises <u>or</u> include your recording.* ***Do both Y and Z***

Y. We need sound effects for a production about a spaceship on a very long trip that is starting to experience mechanical difficulties. We learn from the script that two systems will be going bad: the *Star Drive* **propulsion system** usually hums along with a gentle low-frequency throbbing sound. However, in this instance it will begin to have some sort of "problem" (a 22nd century version of gears breaking or electrical sparking, for instance) followed by a subtle change from the gently throbbing hum to a *similar* sound that is *almost* OK, but more troubling, and will make the audience notice *something is wrong*. If you were on board the ship, you would begin to worry too when you heard this sound. Produce about 10 seconds of the good drive sound, leading into 15 seconds of the sound turning into the troubling drive sound. Keep it interesting. – This is a dry sound without reverb. Turn in an MP3

Z. For our spaceship production, we need the sound for a space welding unit. It uses a type of laser, and works outside of the spaceship. What should it sound like if this device is being used to fix the hull on the outside and you are listening in the inside? The machine works in repeating cycles that last about 2 seconds long and it moves across the hull left to right and back. How to do a controlled pan in Studio One? Use automation to pan. – Add a bit of reverb to indicate we are in a metallic cylinder with diffuse reflecting surfaces. 15 seconds. Turn in an MP3

Grading for Assignments 1 and 2

• Each sound should be unique but believable. The underlying recording in each sound shouldn't be readily identifiable- - that is, until it is explained in your (part 3) documentation.

• Each of the first four designed sounds must be **made up of at least two** separate sounds, one of which is a recording you have made, and the second can be either another recording you've made, or a generated tone or noise. Of course you can add even more layers of sound.

• Can you use your **voice**? OK, but please no more than twice in all of this week's assignments. Be particularly careful not to end up sounding like a voice.

• Avoid clipping – and **normalize** all sounds at about 60% amplitude. Sounds should be robust, reaching -10 to -3 dB on the peaks.

• Each designed sound should have **smooth** starts/ends. Always use at least a very short fade-in and fade-out. A few milliseconds (about 6 ms) will do.

• Since we will generate six files, please use a **folder** for the week. And in the name of each file, insert a triple letter identifying your choices A through Z. As an example, the elevator sound (F) would be named something like: jb*w6FFF.mp3*

• Save each sound as an MP3

Important Assignment Part 3: For full credit, also turn in a one-page <u>sketched</u> documentation, illustrating the ***parts and effects of*** each of your six designed sounds. See the *Example of Student Designed Sound Documentation* posted.

As in that example, note on the sketch where each part came from (rolled Coke can, or pink noise burst, or "Chirp," and the specific effects you used.

You may: A) Use a picture of the waveform with notations, or B) a simple line drawing of the sound ***envelope,*** with notations. This can be done neatly with pen or pencil and photographed.

This may be a simple illustration, but your grade on parts 1 and 2 will depend greatly on this document <u>explaining</u> your sound design clearly to DrB.

***Short Assignment Part 4 Exercise*:** Re-create the automated EQ howling wind demonstrated in "Automation Demonstration" video: just the wind: no dialog or ocean sounds are needed. **Turn in an MP3.**

Questions on *Sound Design Overview*

Who was Jack Foley? Who is *Ben Burtt*?

What are *Foley* sounds? What are *effects* sounds?

What is *Diegetic sound* in film?
A: Sounds that exist in the scene area. The characters would hear these sounds.

What are examples of *non-diegetic sounds* in film?
A: Film score music, and a narrator.

What is *ambience*?

What are the three general subcategories for a complete *film sound track*?
Dialog, music & sound effects

What does a *production recordist* do?
Records while filming – dialog +

What does a *sound editor* do?
Gathers and creates sound effects.

What does a *sound mixer* do?
Puts together the dialog, music, and effects to form a soundtrack.

Describe a *sound designer's* job?
Get in on the planning for a project
Design sound to enhance all the dir goals

What is done in *preproduction*?
Planning with director

What is a story board?

What is a *sound map*?

What are "*cues*"?

What is the most important entry in a sound map, for a designer?

What are examples of the types of adjectives used in sound maps?

For what purposes does a music cue sheet serve?

What is done in *production*?
A: Record, invent, write the music

What is done in *post-production*?
A: Editing the sound, compress, EQ, etc
Mixing and mastering

What is a "beat" in film production?
A: In the plot, an event, decision, or discovery that changes the actions of the protagonist

What are the guiding principles of sound designers?
A: #1 Support the images
#2 Suggest emotions
#3 Same goals as in mixing...
do not mask, separate freq bands, etc
make key sounds easy to notice
#4 Support the "beats" of the production

What is the difference between a *story board* and a *sound map*?
SB: director's summary, often illustrations
SM: sound plan, includes communication goals and adjectives, cues, scene transitions lists of object sounds, moments of drama

Interesting creative example: How did the Starwars sound designer set up the missile explosion in the asteroid chase scene so that the audience anticipated it? (A technique copied ever since!)

What are several ways to EQ for easier-to-understand dialog?
• *High pass between 100 and 200 Hz, or higher*
• *A slight low pass at 8K Hz sometimes eliminates unnecessary esses and breaths*
• *Boost the whole octave around 1750 Hz*
• *Add +2 dB at 250 Hz for warmth*

How many audio tracks should you expect could be perceived any one moment?
3-4 is enough.

How can you, as a sound recordist, make certain you have consistency from take to take?
Make notes. Use same mics, levels, locations

Questions for Linked Reading: Designing Sounds

What is Nick Metcalfe's job description as a sound designer?

What does the crafting of sound effects and Foley provide for the medium?

How does layering of sounds make them more effective?

What types of elements did the author add to the explosion? •What would he leave off if the explosion was supposed to be farther away?

How can you increase the dramatic content of an impact sound?

How did he enhance the sound of the arrow hitting HARD?

In Pitch Black, how did sound design use contrast to enhance the drama of the ship losing power and starting to fall?

What is a *hard cut*?

What dramatic sounds were heard in the 2001 Space Odyssey extra-vehicular (space walk) scenes?

How is the force of the explosion that almost deafens Capt Miller, in Saving Private Ryan, conveyed?

What are Metcalf's 8 suggestions for efficient editing of sound? (There is a good chance this will appear on a quiz!)

From Linked Reading: Sound Designer in a Major Film

What do you do first to begin a sound design project? (4 or 5 things are recommended).

After acquiring a story board of key events, the author recommends using markers in your DAW that correspond to the story board and your sound map. Where is this tool found in Studio One? How does it work?

Do novice sound designers tend to produce too many or too few sound layers?

How many tracks in an actual commercial film would you allot to atmosphere?

How many to Foley?

How many for spot effects (object sounds, etc)?

When layering atmosphere tracks, besides location, what other characteristics must be planned for?

What happens if the atmosphere mix is too dynamic?

What is the obvious tool to control that?

What makes for "bad Foley"?

When doing footfalls, what should you keep in mind for a complete job?

The main character in Ratatouille, Remy, is small. How did the sound designer adjust the design of sounds that Remy himself would be hearing?

From Linked Reading: Creating Foley Sounds

What created the sound of a dog's paw?

A bird's wings?

Snow footfalls?

Cracking ice?

How many layers did you hear in the hiker in the waterfall scene? Carabineers and ropes. Water pouring. And what else???

Study Questions from Automation

What is automation in a DAW?

What can you control with automation?

What are good examples of automation in use?

Where is automation found in Studio One?

What is an advantage of creating a separate automation track, over simply adding automation to an audio track?

In Studio One, what is a shortcut for showing automation?

Explain what we did to the white noise to make it support the image of a realistic storm. Be specific as to variables and how they were changed.

What is the difference between Change Speed, Change Pitch, and Change Tempo?

How can including noise enhance the impact of a sound effect?