

# Live Recording Project

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*Fundamentals of Sound Engineering, Spring 2009*

## Deadlines:

Pre-recording plan: By 5PM one week prior to the recording time.

Recording: Student recordings will be submitted automatically as they are recorded. Students can sign up in pairs for recording times, which will be scheduled periodically throughout the term.

Post-recording evaluation: June 3, 2009 by 5 PM Pacific Time, although it may be turned in sooner for feedback prior to final submission.

Deadlines are firm. No late work will be accepted unless prior approval has been given. **Students are required to submit an electronic copy** of their work to [earsnw@gmail.com](mailto:earsnw@gmail.com) as a .doc, .docx, .rtf, or .pdf file. Please do not turn in paper copies unless you are having extreme technical difficulties and have contacted your instructor.

We are aware of the programs that corrupt email attachments to make it appear like a technical error caused the file not to transmit. Students are responsible for checking the validity of the file transmission. Corrupted email attachments or server errors will not be taken as an excuse for turning in an assignment past its due date.

Confirmation of receipt and attachment viability will be given as soon as possible, but may not come in time if the assignment is submitted within 2 hours of the due date.

## Purpose:

Through this assignment, students will learn to mix in a live setting, to select and use microphones intelligently and artistically, and will learn to critically evaluate their own mixes.

## Pre-Recording plan (30% of overall grade):

In order to evaluate the mix objectively, rather than based on how it appeals to the instructors' tastes, the mix will be graded based on how well the student's goals are achieved. These goals will be specified prior to the recording to insure that students come to the session prepared.

Students will know the band they are to record well in advance, and should do some research on their intended sound beforehand. Students should also research techniques that have been successful for the instruments they will be recording and the genre of the band. Students will also need to research the microphones available to them. Many of these microphones are ubiquitous in live and studio environments, so it is quite important that students be familiar with their characteristics. Students should first consult the manufacturer's literature for specifications and usage suggestions. Microphone techniques will be given lengthy focus in lecture, but students should also seek information on how successful producers have used these microphones in their work.

The product to be submitted (electronically) should be a word-processed, 500-1,000 word statement of the following:

- The sound they hope to achieve, and how they plan on doing so. This statement should be rooted in research of successful approaches to mixing the instruments and genre of the student's assigned band.
- The microphones they plan on using, and how they plan on using them. Illustrations may be helpful for this portion (i.e. an overhead plot of the recording environment with the performer and microphone positions, and an illustration of mic positioning for an instrument). Again, the decisions for how to mic a voice should be rooted in research. Since the microphone technique will be decided in pairs, students should state any compromises or disagreements that arose in this process.

A grade will be assigned based on the rubric at the end of this document.

### **Recording (40% of overall grade):**

Students will have 1 hour to mic and record a local band. Students will work in pairs to mic performers, but will create their own mix using a Yamaha LS9 console. The mix will be evaluated for balance, clarity, dynamics, spatial qualities, and tasteful application (or conscious lack thereof) of effects. Students will be notified of the group they are to record at least two weeks in advance in order to allow for educated microphone selection and planning. The entire process will be recorded by the instructor, and a copy will be given to the student in order to write their post-mix evaluation.

Due to equipment limitations, overdubbing will not be possible. Your recording must be accomplished in a single take, which is much more similar to the live setting than the studio setting.

Students will be limited to 16 microphone/DI input channels, plus 2 stereo effects returns. The LS9 is equipped with 2 dynamics processors, and parametric EQ on each input channel. There is also 1 dynamics processor and parametric EQ on the mix bus. EQ, effects and dynamics processors are often best in moderation, and will likely not be needed on every channel.

A grade will be assigned as per the rubric at the end of this document.

### **Post-recording evaluation (30% of overall grade):**

Students must submit a critical evaluation of their own recording. In this, students must describe how effective their techniques were in achieving the desired sound specified prior to the recording. Students must provide a critique of their mix with respect to balance, clarity, dynamics, spatial qualities, and ambience. Finally, students should state how they would approach the project differently if they had the chance to do the recording again.

This evaluation must be 500 to 1,500 words, and should be submitted electronically. You must cite your sources of information on recording techniques and microphone applications. The specifications of the microphones will be considered common knowledge and need not be cited.

A grade will be assigned as per the rubric at the end of this document.

### **Microphones available:**

The microphones in the following table will be available. Radial DI boxes are also available, as are two pop screens. Students will need to look up information on these microphones in order to develop a plan for microphone

application. Since students two students will be using the same microphone setup, prior collaboration will be in order to give the most possible time to focus on the recording itself.

Microphone Brand	Model	Number Available	Type and primary use
Shure	Beta 58 A	6	Vocal dynamic
Shure	Beta 57 A	6	Instrument Dynamic
Shure	Beta 87 C	2	Vocal condenser
Shure	Beta 98		
Shure	D/S	4	Rim-mount percussion condenser
Shure	SM 81	1	Condenser
Shure	Beta 91	1	Boundary-mount condenser - kick drum
Shure	SM 57	4	Instrument Dynamic
Shure	SM 58	4	Vocal Dynamic
AKG	C430	2	Condenser
Audio Technica	AE2500	1	Dual-element kick-drum mic, requires 2 channels and includes dynamic and cardioid transducers
Audix	OM2	4	Vocal dynamic
Audix	OM5	1	Vocal dynamic
Audix	D6	2	Dynamic low frequency
Audix	I5	1	Dynamic instrument
Audix	F10	4	Dynamic instrument
Audix	F12	1	Dynamic Instrument
Audix	F15	5	Condenser
EV	RE20	2	Dynamic, ubiquitous in broadcast

### Suggested approach to the mix:

After scheduling a recording time, you will be told what group you will be recording, and what their instrumental makeup is. Demo recordings will be available, and you will be given the contact information for the artist to discuss their vision for the sound. Based on this information, you and your microphone setup partner should research some techniques for recording similar groups and develop a microphone application strategy. If you have vastly different ideas of how to mic the band, you will have to compromise. Recording times and partner pairings will not be modified without extenuating circumstances.

Before the recording, you should familiarize yourself with the general approach to a live mix. This will be covered in the lecture and in the readings, but it is in your best interest to be completely ready in order to *quickly* get to the finer touches on your mix. With only 1 hour, you will have to set up the microphones and set rough levels very quickly in order to achieve a high-quality mix.

With only 1 hour, you will not be able to make a studio-quality recording, nor will you be expected to. The most important thing to establish quickly will be balance. As you mix, be conscious of how each voice sits next to the others in the mix. Make sure that everything is audible at first. If you decide to bring something up, down, or out completely, make a note of it, as missing or over-the-top voices will be a major factor in your final grade.

The next thing to consider is the overall quality of each voice’s sound. EQ and dynamics adjustments should be made in order to make each voice sound natural and musically tasteful. Changing the properties of any voice will necessitate readjustment of the overall mix, and you should be very conscious of how changing the qualities of one voice affect the sound of other voices and the overall mix.

The last consideration you will likely have time to address is the interference between similar voices. EQ and panning changes can give each voice a unique place in the mix and is an important part of the sonic image you create.

It is unlikely that you will have time to apply effects to the voices in your mix. This should be the last thing you attempt, as it is the most minor component of your grade. It is also somewhat less intuitive than basic mixing to apply effects on the LS9. Students are encouraged to come in during office hours to learn how to apply effects and change their parameters if they plan on using effects in their mix, or to simply familiarize themselves with the equipment.

**Rubric:**

	Points possible	Points earned	Notes
<b>Pre-Recording Plan (30%)</b>			
Statement of intent	15		The statement should reflect research into the band's sound and intent, as well as techniques that have been successful in similar situations. The desired overall balance, overall spatial image, and quality of each voice should be addressed.
Microphone application plan	15		The microphone application plan should reflect familiarity with the available microphones' specifications and sonic characteristics. A clear, logical, and well-supported plan has been presented.
<b>Recording (40%)</b>			
Balance	20		When mixing, be sure each voice is audible, and that it is balanced in level with respect to the other voices in the mix. The mix should sound musical--address this in your pre and post-mix evaluation, and be sure to state what you wanted to stand out in the mix, and where everything else was intended to rest. Your score in this category will be based on the agreement between your intended balance (from your pre-mix plan), and the balance you actually achieve in your mix.
Quality of the voices	15		Every voice should have the appropriate frequency content and should sound natural. The dynamics should be appropriately controlled, but not unnaturally so. If an unnatural sound or dynamic range was an artistic goal of yours, be sure to state so, and state what your artistic intent was.

Spatial sound image and mix quality	5	Similar-sounding voices tend to compete with each other for space in the mix. Your score for this category will be a measure of how effectively you situate the voices in space, and how through balancing, EQ, etc. you give each voice definition in the mix.
Tasteful and artistic use of effects	3	3 extra points can be gained through use of effects that enhance your mix. Save this until the rest of the mix is satisfactory.
<b>Recording Evaluation (30%)</b>		
Objective evaluation of mix balance	10	Describe the relationship of the voices in the mix. State what stands out, and what is in the background. Is anything difficult to discern? How well did you meet the balance goals you set before recording?
Evaluation of individual voice quality in the mix	10	How does each voice sound in the mix? Does anything sound unnatural?--if that wasn't your intent, why do you think it sounded that way?
Evaluation of spatial qualities and ambience	5	What is the overall sonic image you have created, and how does that fit with the goals you set before mixing?
Future improvements	5	Have you identified where you went wrong and what you could do to improve the next mix?
<b>Total percentage</b>	<b>0</b>	