Challenge #3 Supplement
Recording, Engineering, and Mixing

Working with Hakon Hakonnsen (in the folder "Hakon Reaper" on the student file server) OR another multitrack song of similar complexity, do the following:

General Instructions:

1. Add folder tracks to organize your song. Treat the "L" and "R" tracks as one instrument. These letters indicate that the instrument was recorded with two mics – one placed on the left side, and one on the right side. So, for example, the "B3 High L" and "B3 High R" tracks are the same instrument. That means you should add the same effects to both of these! The easiest way to do this is to create a new track and call it "B3 High". Click on the folder symbol to make this a folder track. Move the "B3 High L" and "B3 High R" tracks just below the new "B3 High" track – then click on the folder symbol of the last track in the folder. That will turn the folder symbol of that track red and "close" the folder. (See the image below for an illustration.) When you add compression and other effects, add them to the folder track instead of the individual instrument tracks. That way, the effects will be applied to both the "L" and "R" components of the instrument. Also, as you can see below, the "B3 High" and "B3 Low" folder tracks are themselves grouped together in the "B3 Group" track.

2. Add EQ to all of the instruments. You should put a high-pass filter on most instruments (except bass guitar and the kick drum). Remember, you can add this EQ to your folder tracks, so you don't necessarily need to add EQ to every individual track.
3. Add compression to each of the instruments. Make sure that the compressor is adjusted correctly – take a look at this document to double-check your work. Again – add the compressor to folder tracks that represent the exact same instrument, so you don't have to duplicate your settings on "L" and "R" tracks.
4. Check the volume levels of each track. At no point during a song should a track go "into the red" – the little red light above the track should never be lit. If it does light up, turn the track down a bit. Also watch the master volume – it shouldn't go into the red either! When track volume levels get too high, they become distorted and add a very unpleasant sound to the mix.
5. Use the solo button to listen to each track. If you've added an effect, you should be able to hear it. You can click the check box next to the effect name to turn it on and off so you can compare how the track sounds with and without the effect. If you can't hear a difference when you turn the effect on and off, you either haven't adjusted the effect parameters correctly or you should choose a different effect.
6. Use your ears to determine what sounds good and what doesn't. Solo individual tracks or groups of tracks to really isolate the instruments. When adjusting EQ or other effect parameters, listen carefully to make sure that the changes you make are actually improving the sound of the instrument. Feel free to play around with the adjustments – but ultimately, you should be LISTENING carefully to each track and to the overall sound in order to determine what to keep and what to leave off.
7. Add reverb and delay as send effects – you should add reverb to virtually all the instruments except bass guitar and kick drum; you can add delay to vocals, snare, and electric guitar to start.

Separately, you should work on mixing the drums as a unique subgroup. Here are some tips you can use – and I will go over these in class on Thursday, Oct. 15.

Working with Drum Tracks:
1. Listen to some songs that have drums that you like. You might even consider importing a song into REAPER – you can mute it while you're missing it, then solo it to check your work against it. I've included the Led Zeppelin track called "Houses of the Holy" in the main REAPER folder on the student server.
2. Make sure you have the drums split into logical folder tracks – I would make one folder track for the overheads (OH L and OH R) and one folder track for the toms (Mid Tom and Low Tom). Then, make an overall "Drums" folder track and put the overheads, toms, snare, and kick drum into that folder
3. Add a noise gate (ReaGate) to the kick, the snare, and the toms folder track. Set it so that the sound of each drum sounds natural – but no other noise "leaks" through. Adjust the output levels of the gate so that the sounds are in the -6 to -12 range. **Note – I will go over how to add a gate to the drum tracks on Thursday, Oct. 15, so don't panic if you can't figure out how this works!**

4. Adjust EQ for each of the drums. Play the tracks soloed and with the rest of the drum tracks so you get a feel for how things sound individually and in combination with the other drums. Adjust the output of the EQ so that each track stays in the -6 to -12 range. Kick drum and snare are particularly tough to EQ – especially when you include the overhead mics in the overall mix. You'll have to switch back and forth between soloing these tracks, playing them all together, and playing your sample drum track for comparison. Add EQ to the overhead folder track rather than each overhead track separately – it can often work to cut out all or most of the low frequencies on the overhead track – let the individual mics give you the low end.
5. If you get to tricky parts (like a drum fill), adjust the position arrows and set your song to loop. This will allow you to focus on a relatively small section of your song.
6. Adjust the compression on the kick, snare, and the overhead folder track. You can be pretty aggressive with this compression – set the ratio to 4:1 or 5:1. The overhead folder track can show a compression of 8-10 db; the snare and kick drums might be in the range of 3-5 db (these are ideas only – not failsafe settings!)
7. Adjust the reverb and delay. Put some subtle delay on the snare; add reverb to the snare and overhead folder tracks (don't add reverb or delay to the kick drum; you can try adding some to the toms if they sound a little thin).
8. Try using "DrumReaplacer" to fix the kick drum! This again can be a little tricky – I will show you how to do this on Thursday, Oct. 15, so if you get stuck, don't worry.

Make sure to frequently make comparisons to the Led Zeppelin song (or another song that you feel has a good drum sound). The closer you get, the better your drums will sound once music and vocals are added to the song.

You will have until Tuesday, October 20 to complete this challenge. When you're done, send me your RPP file as an attachment. Use the "Save As" command to rename your project file as "*yourfullname*Challenge3.rpp", with no spaces. For example, if I sent my file, it would be called "danbregarchallenge3.rpp". My e-mail address is dan.bregar@corvallis.k12.or.us. You can send it from your e-mail account or a friend's – as long as the file is named correctly, I'll know who to give the points to.