

TROMBONE TREATMENTS

Because the trombone changes pitch by means of a slide rather than valves, it is possible to create pitch changes that glide into each other. In classical music, this is rarely done and in fact, most composers do not want the instrument to slide into the next note at all. Consequently, the player will make subtle breaks in between the notes as the slide is moved from one position to the next. A good player can do this very subtly with little separation. However, regardless of the musician's talent, the physics of the instrument mandate a slight break when changing positions of the slide. For maximum realism, this can be replicated in your MIDI orchestrations. This is done by inserting slight breaks between legato notes. These breaks should only be a few milliseconds long. They usually occur after a slight decrescendo in the legato note preceding the break. Remember that the trombonist can produce many pitches in one slide position by altering lip pressure, so you should not put a break in between every pair of legato notes. The phrases below show the original phrase and the new phrase complete with the modifications to volume and the slight breaks.



The original legato line recorded with overlap.



Inserting slight breaks by shortening the ends of notes



Inserting slight volume volume decreases before the breaks.

Make sure you use separate samples for bass and tenor trombone lines. Although the range of the two instruments is virtually the same today (using the F, D and G \flat triggers to extend its range), the larger sizes of the bass trombone's bore and bell make the tone fuller and much more robust. In fact, the lowest range of the tenor trombone is thin and somewhat anemic-sounding. If your library does not include bass trombone samples, you can modify your tenor presets slightly to produce a new presets that will be used for the bass trombone. We accomplish this by lowering the entire keymap of the tenor trombone's set of samples



by a whole-step or a half-step and then saving this as a new preset for the bass trombone. Then, when you use the two instruments together, any unison notes will feature two samples and the bass trombone will sound slightly fuller. However, this technique only works when individual samples are mapped to each note throughout the range. Then, change the EQ of the instrument by slightly adding more low and lower-mid frequencies and change the panning very slightly. You can also use the same principles to create a second tenor trombone patch by changing the keymap *upward* by a half- or whole-step. This will allow you to have a distinct sound for each of the two tenor trombone parts.

Trombones are great for adding power and impact to a loud phrase. This can be done in a number of ways. Try using them in a rhythmic way in conjunction with snare, bass drum or timpani. When used in this manner, they can also help propel the orchestra along.

2 Trombones

Bass Trombone

ff

ff

In an accompaniment, let the trombones play three-note chords using half-notes, as in the phrase below. Make sure that you break up the chords by inserting an occasional “breath break.” When all three of the instruments break at the same time (typically by putting an eighth-rest at the end of every two measures or so), you will create a cohesiveness that will easily mimic the sound of a live section playing the same phrase and articulations.



Three-part phrase (each color is one part) with breath breaks before measure 3 and 4.

Using trombones in unison will produce a huge and powerful sound that can be used for melodies (often doubling the French horns or trumpets) or as an accompaniment feature. See below for more details on how to achieve this sound.

MAKING ONE SAMPLE SOUND LIKE THREE

Brass instruments are often called upon to play in unison: Unison groupings such as three trombones, three trumpets, or four or more French horns are common. Treating the instruments in unison will provide an intense and penetrating sound that is usually reserved for *ff* or *fff* phrases. In order to achieve this sound, you must either...

- use samples whose source material contains the actual recorded sound of the unison instruments,
- use a separate but stock patch for each instrument, or
- modify a single set of stock patches in order to obtain separate samples for each note (e.g. three different samples for each note, representing the three unison instruments playing together).

The first and second approaches are easier to achieve success with. The only negative aspect to the first is that you will be playing the same samples over and over and therefore the



internal tunings that occur naturally when two or more musicians play in unison will be the same each time you play the same note. This redundancy may or may not be a problem. The second and third approaches work very well in that they allow you to change the articulation, note-on and note-off timing and velocity, volume and all other attributes of each instrument independently. However because of these options, they are more difficult to use.

If you don't have separate patches for each instrument, you must modify your patches to create new ones so that they can be used for unisons without simply duplicating the same sample for each note. If, for instance, you layer three identical samples on one part, you will not achieve the richness and variation that occurs naturally. Also, this may produce, phasing problems or other unwanted side effects. To obtain three different lines from the same set of samples, you can do one of four things:

- As mentioned above, you can reassign the same set of samples to different keymaps. This is a common approach used by developers and will result in a different sample playing the same note. For three instruments, lower one mapping by one half-step and raise another mapping by one half-step. Then as you play three unisons, you are triggering three different samples.
- If your patches have four or more velocity layers, you can play each of the three lines so that a different layer (and therefore a different sample) is played on each note. If the patch does not have enough layers, then this approach might not give you the best results, since lower velocities will be softer and contain fewer high frequencies. By modifying the velocity curve of your master controller, you should be able to limit the output velocity to a specific range. This will allow you to trigger only a specific group of layers. The more velocity layers present, the better the result.
- You can use slightly different articulations on each instrument, thereby resulting in a different sample sounding for each of the three voices.
- You can vary the sample start points inside your sampler and then resave these changes as a new preset. If your sampler won't accommodate this, you can use a wave editor and change the sample start point, resave



each sample with a new name and then bring these new samples into the sampler to create a new preset. While the samples will have the same timbre, unisons will not produce the same artifacts as those described above since the sample waves are not exactly in sync. You will typically need to add a small delay in the amplifier envelope to avoid hearing the click that occurs when a sample starts somewhere other than a zero-crossing.

Unisons are a good place to layer sounds between two libraries. Use the recommendations discussed earlier when doing this.

USE OF THE TUBA AND BASS TROMBONE

The tuba is the largest brass instrument in the orchestra and is responsible for the bass voice in the section. The bass trombone is the next largest instrument, and it too can provide the bass voice when needed. Comparing the two, the bass trombone has a sound that is more focused, while the tuba's tone is more round and full, with less focus. The tuba and bass trombone often double parts in both unison and octaves. Like the cello and double bass in the string family, these two instruments produce different timbres and effects dependent on what is written for them. For instance, if you leave the tuba out completely from a brass choir passage, you can still have adequate representation of the bass part with the bass trombone, though the sound will not be as full. If you add a unison tuba to the bass trombone, you will have more of the fundamental represented and the composite tone will be less focused and more round.

If you leave out the bass trombone, then the overall fundamental tone will be much more round. It could even be said that in this situation, the tuba is subtle, producing an obvious fundamental without being invasive. In quiet settings, the tuba sound can be quite subdued since it is capable of producing dynamics as low as *pp*. This is especially useful in its lower octave. Try using it as a bass voice with the French horns in a quiet passage. This produces an excellent result, since the tuba's tone is very similar to the horn's at lower dynamics. Here are some chords using tuba and four horns.



In large tutti sections, the tuba and double basses can be doubled. However, the tuba will usually play a less busy part if the basses are playing a more detailed line as shown below.

When tuba is used with the basses, make sure that both instruments are playing the same notes. This will assure that the fundamental (or other tone) is reinforced. Using two different notes in the same low range results in an overly thick and muddy orchestration.

Because the tuba's tone is very round, it can be used to double the double basses even when no other brass instruments are playing. This results in a much more solid low end.

The size of the tuba makes playing extremely fast lines somewhat difficult, but the instrument is more agile than you might think. Be careful not to write overly fast lines, especially those incorporating large jumps. The size also means that it requires a large amount of breath to play. This limits the number and length of notes that can be played with one breath. A tuba player would need to have small breaks inserted between long passages of notes in order to take a breath. Add small breaks in the form of rests within your parts to emulate this.

Doubling the tuba and bass trombone at the octave will produce a deep and rich sound since the tuba's fundamental is heard but the tone also gives a strength to the bass trombone's note (as this note will be the first overtone of the tuba's fundamental). This doubling approach is appropriate in many settings, from moderately loud through extremely loud. A somewhat unusual approach is to put the tuba an octave above the bass trombone. This produces a very different sound, with more emphasis on the upper tuba fundamental, but with the focus of the trombone's tone in the lower octave.