55. Timpani Pitch Assignment

Avoid needless tuning and retuning by having timpani 
sometimes play the 
mediant or dominant position of a chord, rather than relying on the root in every 

One of the most common quandaries in our orchestration forum is usually posed by a student orchestrator asking how quickly the timpani may be retuned. The source of their question lies in their approach to scoring a passage. They want the timpani to hit the root of every chord in a passage where the chords change eight times over four bars. Or they want the timpani to play a series of notes walking up or down by steps.

The answer to their question lies in resonance and overtones. Timpani have a great capacity for playing pitched notes - and yet their great size and depth also lends a certain ambiguity to that same pitch. A timpani note may be off by one or two half-steps from the pitch of the rest of the orchestra, or it may be on the 3rd or 5th of a chord. But so long as the fundamental note of the overall harmony is well-emphasised by the low instruments of the orchestra, then that afore-mentioned note will be heard in its intended place. The complementary overtones, booming resonance, or both help the ear to shape the tone into the overall harmony.

In the first example below, the timpani are doubling a bass line ascending in diatonic steps from G2. The first note is the same in both the bass line and the timpani. The second note of A in the line is doubled by the same G in timpani, and the close proximity of the tones smooths over the difference in pitch (these closer compromises are not recommended above C3). At B♭2, the timpani are still playing G2, not returning to a unison note until the final C.

In the second example, four timpani underpin an eight-chord progression. Note which position each kettle takes in each chord.

For further study in this, you can't beat Beethoven for sheer economy of timpani pitch assignment. His symphonies are full of great examples of timpani scoring using only two kettles at most. In the fourth movement his Symphony no. 7, he manages to use the timpani nearly constantly throughout all the adventuresome modulations. It's a study in the tonal flexibility of timpani, and a great relief to the timpanist in not needing to retune throughout the performance of a very demanding part.

Fig. 55a: Various approaches for assigning different timpani pitches other than the root. Harmonic positions are indicated for implied harmony and given chords, not keys.

Fig. 55b: Beethoven, Symphony no. 7, Movement 4, timpani part with string harmony bars 336-343.