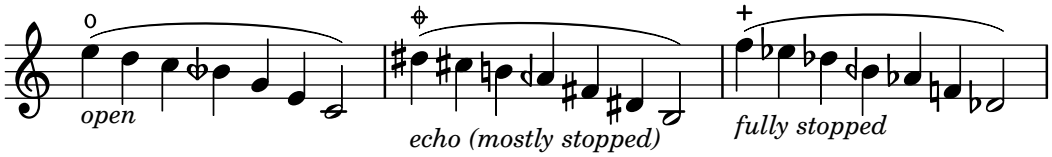
Starting Stopping

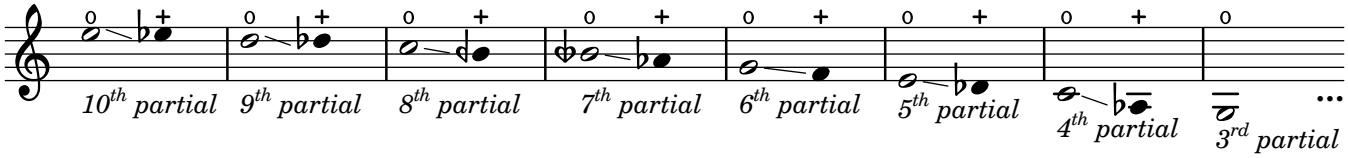
Clay Smalley

One of the most noticeable differences between the horn and other brass instruments is the movement of the right hand in the bell. Historically, this was done on valveless, or *natural,* horns, to reach pitches in between those along the harmonic series. Nowadays, on valve horns, the right hand is mostly used to make fine adjustments to intonation, as well as playing stopped () and echo () tones.

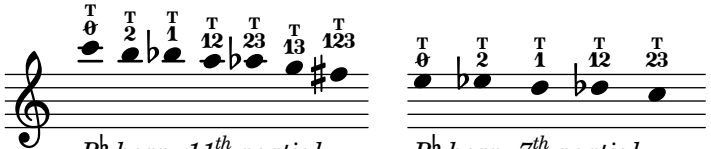
An everlasting source of confusion for new hornists is whether stopping the bell raises or lowers the pitch produced. By playing a long tone and gradually closing the bell, one may notice that the pitch bends down, and one can find a “mostly stopped” position that reliably flattens the horn by a half step. But by sealing off as much of the bell as possible and playing with more pressure, one may notice that the harmonic series has shifted a half step *upward:*

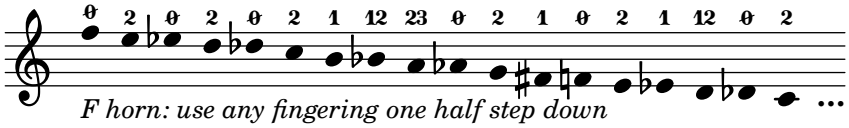


So what is happening here? Each open tone on the F horn indeed has a corresponding stopped tone a half step up, but the stopped tone actually comes from bending down the next highest partial—a hidden barber pole effect. Closing the bell lowers the pitch, all the way down to *one half step above the next lowest partial* (or, on the B♭ horn, a noticeably out-of-tune ¾ step above it). For example, the 5th and 6th partials produce an open E and G, respectively. One half step above the 5th partial's E is F, Which is the stopped tone that the 6th partial's G can be bent down to.



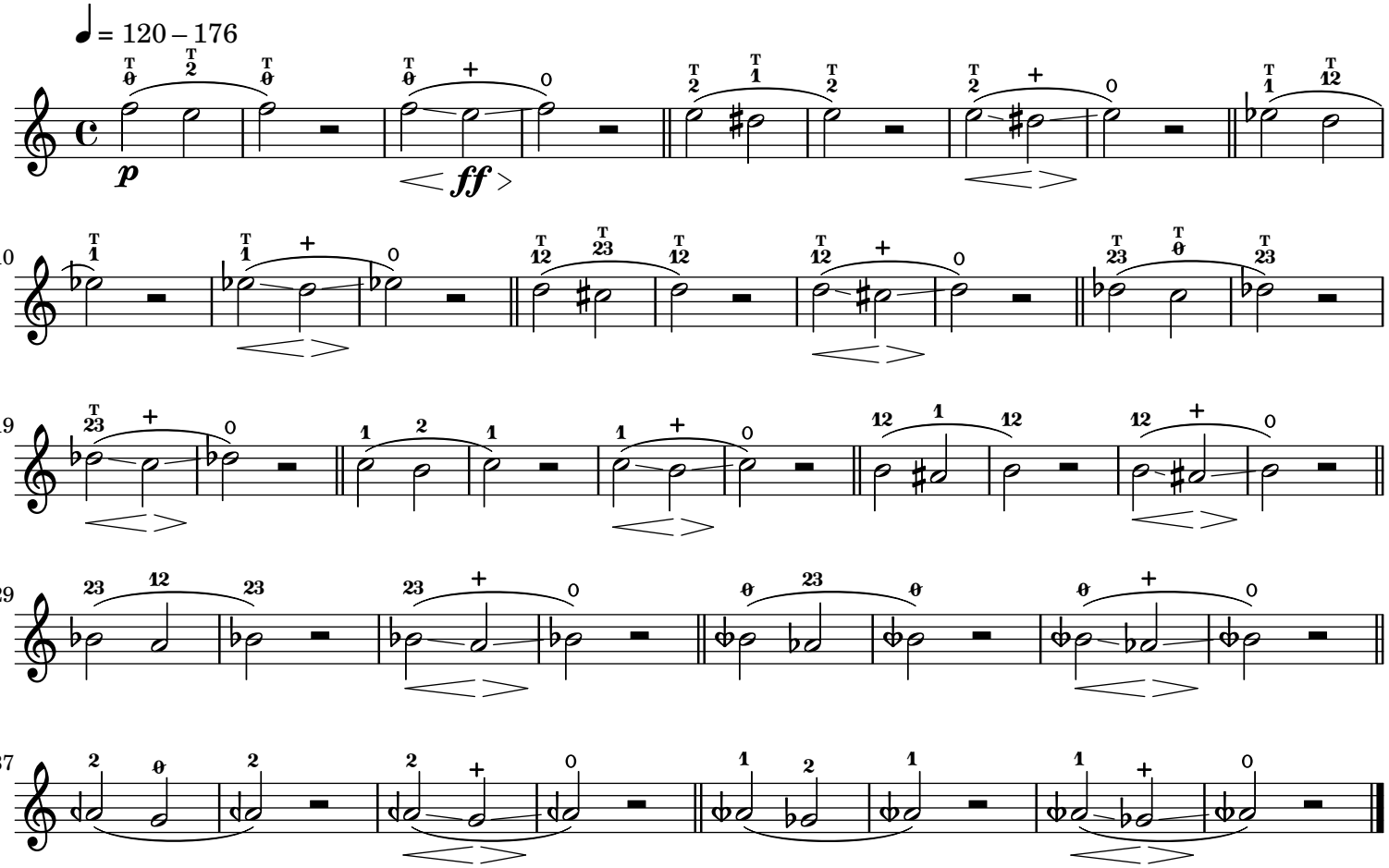
So, on the F horn, **fingering one half step down while stopped** is a useful mnemonic, though certain fingerings can counteract the out-of-tune 7th and 11th partials and bring the stopped B♭ horn back into tune. Since these partials are rarely used otherwise, mnemonics based on more recognizable fingerings for the 8th and 12th partials, respectively, are more common.





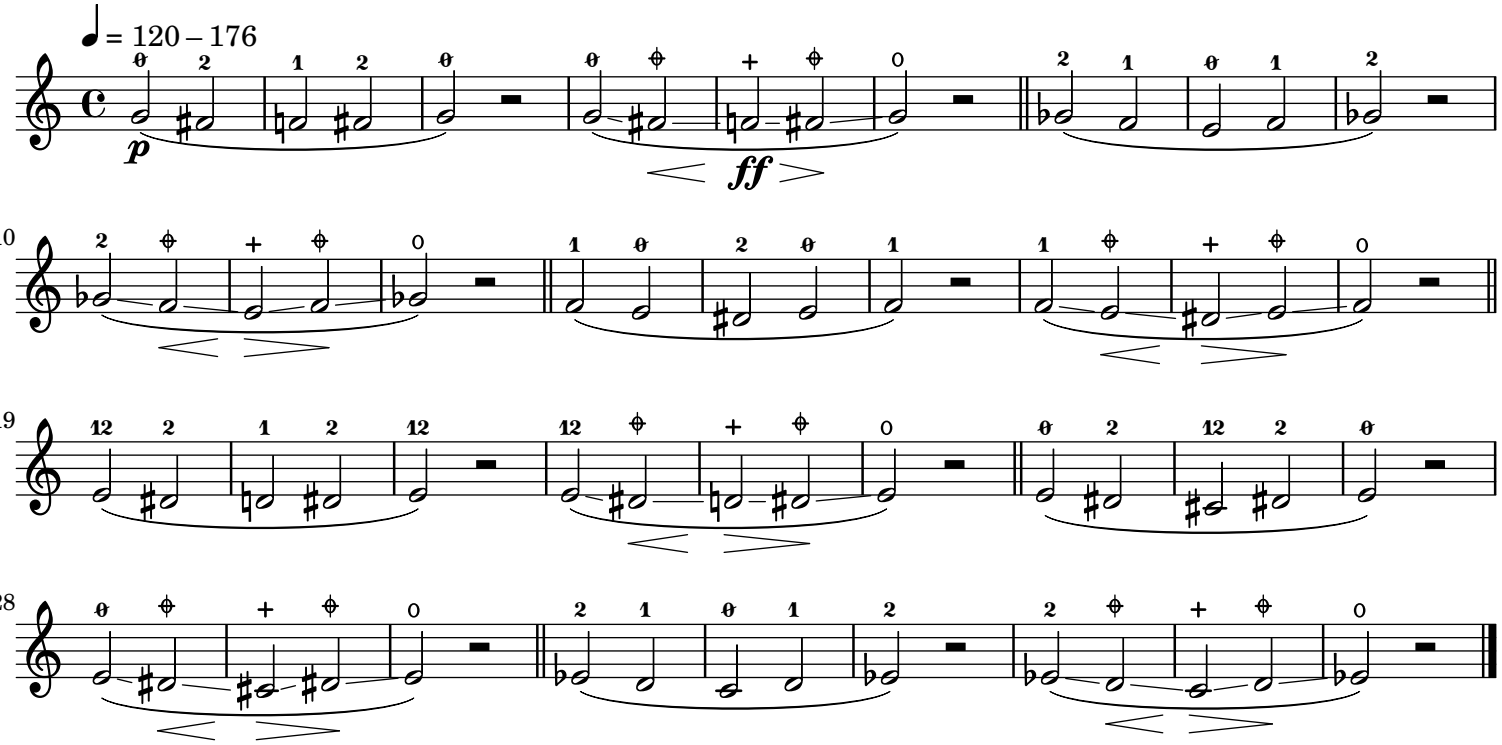
A Short Pitch Bends

Use the suggested fingerings to match intonation between open (0) and stopped (+) tones. Gradually transition from open to stopped and back.



B Long Pitch Bends

Use the suggested fingerings to match intonation between open (0), echo (⊕) and stopped (+) tones.



C Open and Stopped Staccato

Match intonation and dynamics between open and stopped tones.