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Thinking through the guitar : the sound-cell-texture chain

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Chapter 15 Inverted Stopping Sounds

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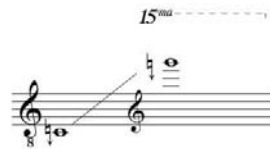
Chapter 15 Inverted Stopping Sounds

Inverted stopping sounds emerge when the string is plucked behind the stopping position or behind the nut. This chapter shows ways in which the composer can handle the characteristics of the inverted stopping sound, use it to build horizontal as well as vertical cells, and finally, how these cells can be creatively combined to form musical textures playable on the guitar.

15.1 Sound

15.1.1 Pitch range

Figure 15.1 Inverted stopping sound range



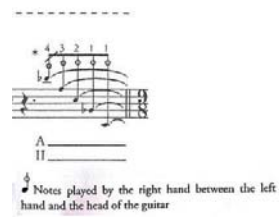
The range of inverted stopping sounds is pictured in Figure 15.1.

Figure 15.2 Pitches on the sixth string in inverted stopping position



When playing inverted stopping sounds, the pitches are not tuned to tempered pitches as a consequence of the fact that the sequence of decreasing fret widths as the pitch goes up for regular stopping positions is also inverted. In Figure 15.2, the pitches on the sixth string are listed with indications above the staff as to which position they can be found in (counting down from position XIX to position II). The pitches on the other strings can be derived from Figure 15.2 based on the interval relationship the string has to the sixth string.

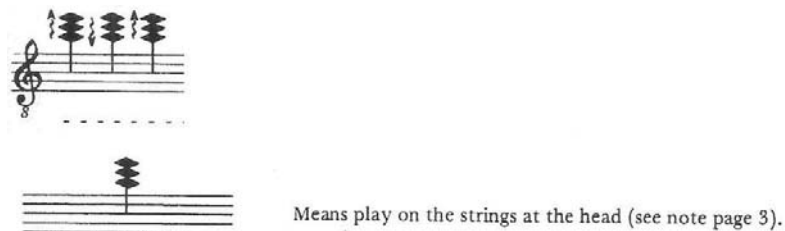
Figure 15.3 Inverted stopping notation



(ESTUDI DE CONCERT NÚM. 7, GASULL)

Inverted plucked sounds are performed by stopping a string and plucking the string behind the stopping position. Usually, the performer reaches with the right hand over the left hand in order to produce inverted plucked sounds, but the string can also be plucked with the left hand instead. Inverted stopping sounds are usually notated with the pitches that would sound if the string were to be plucked in regular position, accompanied by a verbal indication or a symbol (Figure 15.3). In addition to the notation of pitches that would sound if they were plucked in regular position, Gasull uses circles attached to the stems to indicate inverted stopping sounds. When inverted stopping sounds are notated with the pitches that would sound if the string were to be plucked in regular position, it is important to indicate the string on which the stopped note should be held, as identical pitches on different strings lead to different inverted stopping pitches.

Figure 15.4 Playing behind the nut



(SONATA, GINASTERA)

A variation on this sound is to play, pluck or strum behind the nut (Figure 15.4). The string length between the nut and the tuning key roller differs each time the guitar is restrung; for this reason, standard pitches for sounds that are played behind the nut cannot be given. Notes played behind the nut should therefore be notated with alternative noteheads specified in a legend, as in Figure 15.4.

15.1.2 Timbre possibilities

Attack

As is the case for regular plucked notes, the sound quality of inverted stopping sounds can be varied by the way they are attacked. Scoring an inverted stopping sound with the flesh of the thumb leads to a

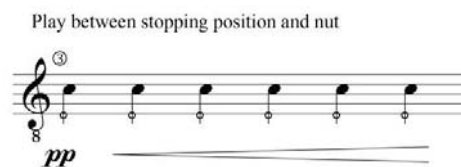
mellower sound as compared to the standard attack with the nail, while an apoyando attack is dynamically more powerful than a tirando attack.

Stopping position

As is the case for regular plucked notes, playing an inverted stopping note from the middle or high range in a high position on a low string changes its timbre. It is important to keep in mind that pitches on different strings that are identical in normal playing position have non-identical pitches when they are played as inverted stopping sounds.

15.1.3 Dynamic range

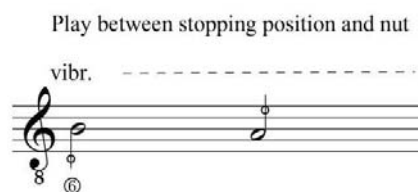
Figure 15.5 Dynamics



The dynamic range of inverted stopping sound is very limited. This is due to the fact that these sounds do not benefit much from the amplification the guitar body provides to other sounds, as the string does not vibrate above the sound hole during the performance of inverted stopping sounds.

15.1.4 Vibrato

Figure 15.6 Vibrato



All inverted stopping sounds can be scored with lateral or vertical vibrato (Figure 15.6). The audibility of a vibrato depends on the dynamic power of the string resonance, which in the case of inverted stopping sounds is very limited. The vibrato is therefore only audible for a short moment immediately following string attack.

15.1.5 Pitch bends and microtones

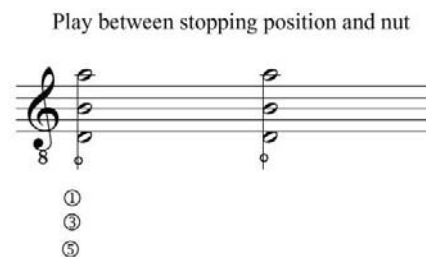
Pitch bends for inverted stopping sounds are to be prescribed in the same manner as for regular plucked notes. Microtones are prescribed in the same manner: they can be attained through a microtonal scordatura, through bending the string, or through one of the many pitches that are already microtones in inverted stopping positions (Figure 15.2).

15.2 Vertical cells

Inverted stopping sounds can be scored as vertical cells of inverted stopping sounds alone, or in combination with other sounds.

15.2.1 Vertical cells of inverted stopping sounds

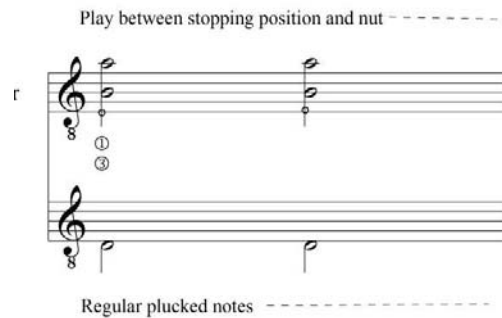
Figure 15.7 Vertical cell



When scoring vertical cells of inverted stopping sounds, it is possible to combine up to four inverted notes, or six when a barré is used. Various spacings are possible, as long as they fit within the hand span of the position in question. It is not necessary to score these vertical cells on adjacent strings, as the performer can perform each string with a different finger of the right hand (Figure 15.7). It is helpful to realize that position changes which do not take place between the leftmost stopping position and the nut on a given string do not cause pitch changes.

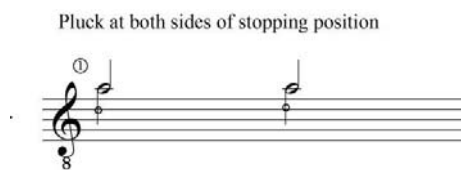
15.2.2 Vertical cell combinations with other sounds

Figure 15.8 Vertical cell of inverted stopping sound combined with regular plucked sound



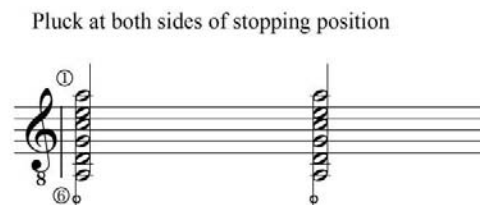
Inverted stopping sounds can be combined with regular plucked sounds, creating a combined vertical cell (Figure 15.8). As is the case with vertical cells of inverted stopping sounds, it is not necessary to score these vertical cells on adjacent strings.

Figure 15.9 Plucking at both sides of stopping position



The advantage of inverted plucking sounds is that a string can be plucked at both sides of the stopping position at the same time (Figure 15.9). In order to perform such a vertical cell, the left hand plucks the string between the stopping position and the bridge, while the right hand plucks the string between the stopping position and the nut, or vice versa. In order to prescribe plucking at both sides of the plucking position, a verbal indication should be used (Figure 15.9).

Figure 15.10 Plucking at both sides of stopping position of a bar chord



When using bar chords, combinations with regular plucked notes make it possible to create vertical cells of up to twelve different pitches (Figure 15.10). Due to the limited dynamic range of inverted stopping sounds, regular plucked sounds are dynamically dominant in such vertical cells.

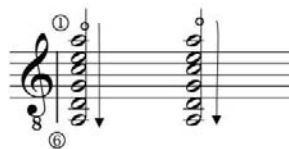
15.3 Horizontal cells

It is possible to create a variety of horizontal cells with inverted plucking sounds, such as single lines, arpeggios, vertical cell sequences (plucked, strummed and rasgueado) and multiple parts. The designs of these horizontal cells are the same as for regular plucked sounds, strummed sounds and rasgueado sounds, with the difference that they are now created with inverted stopping sounds. In this section, aspects that are relevant to all these horizontal cells when built with inverted stopping sounds are discussed.

15.3.1 Single lines, arpeggios, vertical cell sequences and multiple parts

Resonance

Figure 15.11 Downward strumming



The resonance of inverted stopping sounds is minimal; ringing on of notes into the temporal space of subsequent notes only occurs minimally when writing a rapid sequence, for instance in a rapid downward strum (Figure 15.11). In slower sequences, the ringing into the temporal space of subsequent notes does not occur, due to the short resonance of inverted stopping sounds.

Harmonic possibilities

The harmonic possibilities of inverted stopping sounds can be derived from Appendix A with the difference that the notes are now plucked between the stopping position and nut, producing other pitches, as demonstrated in Figure 15.2.

Speed

Figure 15.12 Speed

Play between stopping position and nut

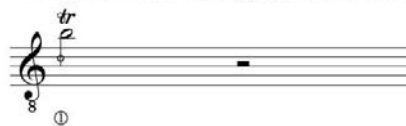


It is possible to create high speeds in horizontal cells of inverted stopping sounds, depending on the speed of the type of horizontal cell used. However, horizontal cells of inverted stopping sounds in which position changes take place greatly reduce the maximum speed, as the performer is in an awkward position for coordinating position changes. The most effective rapid changes are scored over one string in a single line horizontal cell of inverted plucked sounds with fingering changes that fit within the hand span (Figure 15.12).

Embellishment

Figure 15.13 Trill

Trill performed between stopping position and nut



Embellishments can be scored by attaching a left hand trill, performed between the stopping position and the nut, to a note in the sequence. In this case, the right hand can continue performing other sounds while the left hand performs the embellishment.

Non-functional writing

Figure 15.14 Non-functional writing

Play behind stopping position



Examples of non-functional writing for horizontal cells of inverted stopping sounds:

- *Fortissimo* scoring of inverted stopping sounds (Figure 15.14)

- Rapid string and position changes

Combinations with other sounds

Figure 15.15 Combination with muffled plucked sounds

*) Close first and second string near the bridge by right hand finger in order not to let them sound at all. Play only by left hand finger notes which are written on the middle line, and the left side of the string will sound (between the finger and the nut). The notes produced by this method are written on the upper line. The right side of the string (between the finger and the bridge saddle) must not sound at all.

(PORCELAIN TOWER, KOSHKIN)

Inverted stopping sounds can be scored with other sounds. An example from the literature is pictured in Figure 15.15, where Koshkin combines muffled plucked sounds with inverted stopping sounds. These two sounds can be performed simultaneously, as the muffled plucked sounds are performed with the right hand alone, whereas the inverted stopping sounds are performed with the left hand.

15.4 Textures

In the guitar repertoire, both continuations and combinations of horizontal cells containing inverted stopping sounds are found. The following examples are presented primarily for the purpose of illustrating how textures in repertoire pieces have been put together.

15.4.1 Textures as continuations of horizontal cells

Texture of muffled plucked sounds and inverted stopping sounds

Figure 15.16 Texture combining plucked sounds and inverted stopping sounds

(THE PORCELAIN TOWER, KOSHKIN)

Koshkin continues his combination of plucked sounds and inverted stopping sounds for many measures, creating a texture (Figure 15.16). This innovative texture derives its characteristic sound from the combination of tuned (regular plucked sounds) and untuned pitches (inverted stopping sounds). Koshkin keeps the basses, performed as regular plucked sounds, on open strings in order not to interfere with the performance of the inverted stopping sounds. The scoring of low pitched regular plucked sounds in combination with inverted stopping sounds gives him a very wide pitch range, which is successfully employed in this texture.

15.4.2 Textures as combinations of horizontal cells

Single line/arpeggio texture of plucked sounds interrupted by playing behind the nut

Figure 15.17 Single line/arpeggio texture with interruption

The musical score consists of two staves. The first staff begins with a treble clef, a key signature of one sharp (F#), and a 5/8 time signature. It starts with a 'naturale' marking and a 'C2' chord. The notes are: G2 (p), A2 (p), B2 (p), C3 (i), D3 (m), E3 (a), F#3 (2), G3 (3), A3 (4), B3 (2), C4 (4), D4 (2), E4 (4), F#4 (1), G4 (4), A4 (2), B4 (1), C5 (4), D5 (2), E5 (1), F#5 (4), G5 (2), A5 (1), B5 (4), C6 (2), D6 (1), E6 (4), F#6 (2), G6 (1). Dynamics include 'p' and 'mf'. Fingerings are indicated by letters i, m, a, and numbers 1-4. A section marked 'mf' includes a note plucked behind the nut, indicated by a vertical line and the instruction '* at the head upon the six strings'. The score is labeled '(SONATA, GINASTERA)'.

Ginastera uses vertical cells plucked behind the nut as an effect interrupting a single line/arpeggio horizontal cell of plucked sounds (Figure 15.17). Notes plucked behind the nut do not appear often in the guitar repertoire, and just as the sudden appearance of the whistling sound in Figure 14.18 of the previous chapter, this passage derives its memorability from the oddness of the appearance of plucking behind the nut at the height of a crescendo. Ginastera scores the regular plucked notes immediately preceding the behind-the-nut plucking sounds as descending slurs, thus allowing the performer to move the right hand to the appropriate playing position for these notes.