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

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## Chapter 16 Bottleneck Sounds

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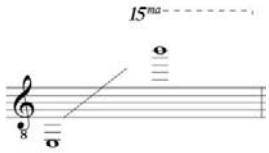
# Chapter 16 Bottleneck Sounds

Bottleneck sounds materialize when a bottleneck or slide is used to play pitches on the guitar. The term bottleneck is preferred here, as it avoids confusion with other practical uses of the word slide (such as glissando, string scratches). This chapter shows ways in which the composer can handle the characteristics of the bottleneck 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.

## 16.1 Sound

### 16.1.1 Pitch range

*Figure 16.1 Bottleneck range*




For bottleneck sounds, a virtually unlimited upward range is available; the closer the bottleneck is positioned to the bridge, the higher the pitch. The approximate highest pitch that is still audible is pictured in the range overview in Figure 16.1. In all ranges, bottleneck sounds are usually performed by applying the bottleneck to a finger of the left hand, lightly touching the string with the bottleneck while attacking the string with the right hand. This attack can be executed through plucking, strumming, rasgueado or tambora. There is no standard notation for bottleneck sounds; a verbal description should therefore be used, such as “bottleneck”, “slide” or “metal slide”.

### 16.1.2 Timbre possibilities

#### Attack

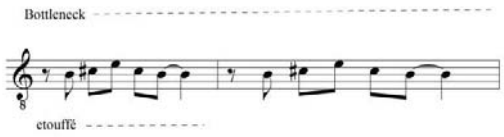
As is the case for regular plucked notes, the sound quality of bottleneck sounds can be varied through the way they are attacked. Scoring a bottleneck sound with the flesh of the thumb leads to a mellower sound as compared to the standard attack with the nail, while an apoyando attack is more powerful dynamically than a tirando attack.

### Stopping position

As is the case for regular plucked notes, playing a bottleneck sound from the middle or high range in a high position on a low string changes its timbre. If the composer wishes a note to be performed on a particular string, an indication to this effect should be provided in the score.

### Etouffé

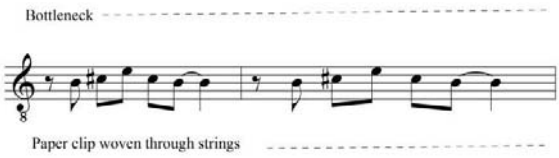
*Figure 16.2 Bottleneck etouffé*




The timbre of bottleneck sounds can be changed by muffling the note. Muffled bottleneck sounds are performed by plucking a note and simultaneously slightly damping it with the side of the right hand (Figure 16.2).

### Prepared guitar

*Figure 16.3 Paper clip preparation*



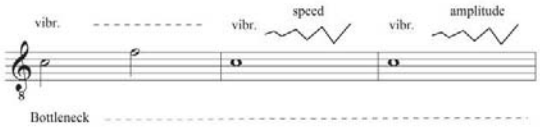

The timbre of bottleneck sounds can be changed by attaching an object to one or more strings, turning the guitar into a prepared guitar (Figure 16.3). Initially, the sound of the bottleneck use is at the forefront, while the paper clip preparation becomes audible during the resonance of the notes. As the paper clip preparation affects the string during resonance, longer note values make the string preparation more audible.

## 16.1.3 Dynamic range

The dynamic range of bottleneck sounds is the same as that of regular plucked notes; they can be performed at very soft dynamic levels, particularly with the tirando attack, as well as at loud dynamic levels, particularly with the apoyando attack. When the bottleneck sound is performed through strumming, rasgueado or tambora, the dynamic range is the same as that of that of method of execution chosen.

### 16.1.4 Vibrato

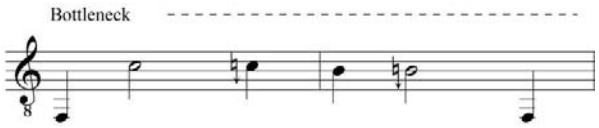
*Figure 16.4 Bottleneck vibrato*




All notes that are performed with a bottleneck can be scored with vibrato. The bottleneck provides the possibility for vibrato with narrow as well as extremely wide amplitudes (Figure 16.4). The vibrato is performed by moving the slide laterally up and down along the string. The vibrato amplitude is virtually unlimited, because, as explained at the outset of this chapter, the pitch range of the string is virtually unlimited when using the bottleneck.

### 16.1.5 Pitch bends and microtones

*Figure 16.5 Bottleneck microtones*



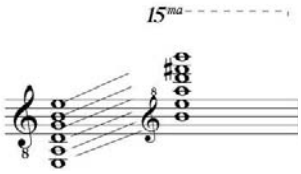

Bottleneck sounds lend themselves very well to scoring with pitch bends and microtones. The use of the bottleneck makes that the performer can escape the equal temperament the frets impose on the guitar's pitch range and makes it possible to intonate any pitch as desired, much in the same way as is possible on bowed string instruments without frets. Other than in the case of stopped notes, bottleneck microtones do not have to be pulled out of tune first in order to produce a microtone (Figure 16.5).

## 16.2 Vertical cells

Bottleneck sounds can be scored as vertical cells of bottleneck sounds alone, or in combination with other sounds.

### 16.2.1 Vertical combinations of bottleneck sounds

*Figure 16.6 Range of vertical cell pitch combinations*



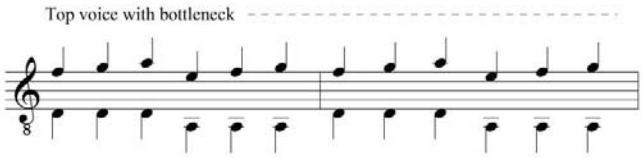

It is possible to score vertical cells of bottleneck sounds of up to six notes. However, due to the vertical position of the bottleneck on the strings, only transpositions of the open string intervals should be scored (Figure 16.6). Between the third and second string, only intervals of a major third should be scored, while between all other adjacent strings only intervals of a perfect fourth should be scored. When a scordatura is used, the interval possibilities change in accordance with the detuning of the strings. It is not necessary to score vertical cells of bottleneck on adjacent strings when they are plucked, as each note is plucked with a single finger.

## 16.2.2 Vertical combinations with other sounds

The most effective vertical combinations of bottleneck sounds are created with regular plucked sounds or harmonics.

### Vertical combinations with regular plucked sounds

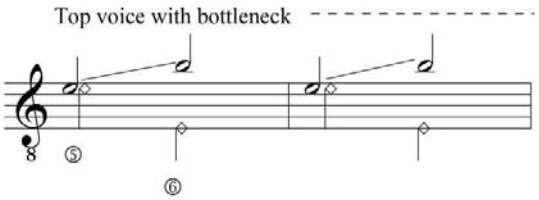
*Figure 16.7 Vertical combinations with regular plucked sounds*




Bottleneck sounds can be effectively combined with regular plucked sounds on a lower string. The lower pitches should either be located on open strings (Figure 16.7) or within the hand span of the bottleneck playing position.

### Vertical combinations with harmonics

*Figure 16.8 Vertical combinations with natural harmonics*




Bottleneck sounds can effectively be combined with natural harmonics on a lower string. The harmonics should lie within the hand span of the bottleneck playing position (Figure 16.8).

# 16.3 Horizontal cells

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

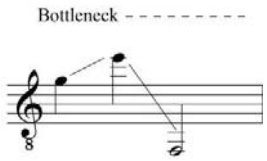
## 16.3.1 Single lines, arpeggios, vertical cell sequences and multiple parts

### Harmonic possibilities

When scoring single lines of bottleneck sounds, the harmonic possibilities are wide as the performer only has to be concerned with the performance of one line. Vertical combinations, arpeggios and multiple parts are more limited in their possibilities, as the intervals must be a transposition of the open string intervals.

### Speed

*Figure 16.9 Remote pitch locations*



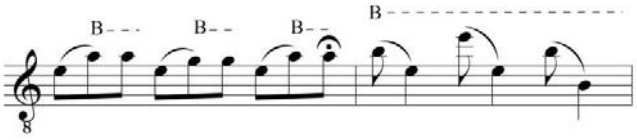

It is possible to create high speeds in horizontal cells of bottleneck sounds, depending on the speed of the type of horizontal cell used. Position changes of bottleneck sounds can be executed faster than position changes of regular plucked notes, broadening the possibilities to score notes at remote locations on the fretboard at relatively high speeds and with glissando articulation (Figure 16.9).

## Articulation

Single line horizontal cells of bottleneck sounds can be scored with a variety of articulations, such as slurs, legato/glissando, accents, and staccato.

### *Slurs*

*Figure 16.10 Bottleneck slurs*

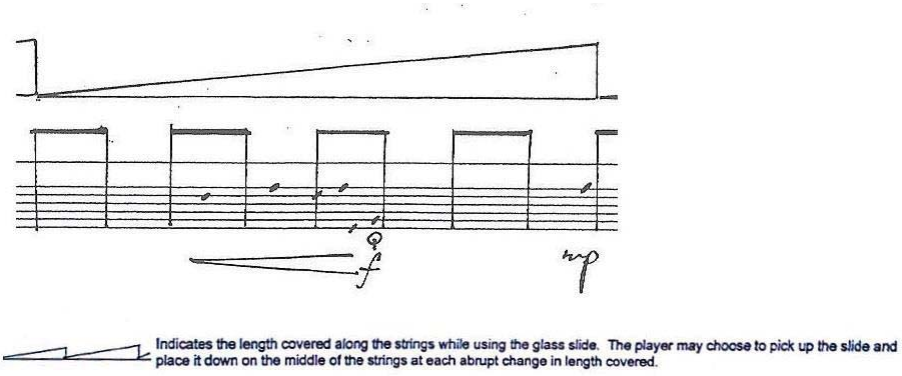



Bottleneck sounds can be scored with ascending and descending slurs (Figure 16.10). An ascending slur starts as a regular plucked note, preferably an open string as this facilitates an accurate execution of the slur. The slur is produced by placing the bottleneck onto the position of the slurred note. A descending slur starts as a bottleneck note; the slur is produced by removing the bottleneck from the string, releasing the sound of the open string.

### *Glissando*

The standard manner of connecting bottleneck sounds is by using the bottleneck to slide from one note to the next (Figure 16.9), creating a glissando articulation. When scoring horizontal cells without glissando, the composer should indicate this with a verbal instruction such as “no glissando”.

*Figure 16.11 Bottleneck sounds combined with Bartok pizzicato and regular plucked sounds*




(AKEPHALE, BARTLETT)

Bartlett uses the scratching sound of the lateral motion of the bottleneck on the strings as a rhythmic basis, and inserts plucked and Bartok pizzicato sounds during the scratching process that subsequently resonate with glissando articulation (Figure 16.11). Bartlett uses visual notation for the amplitude of the

scratching motion and the rhythmic placement of the plucked and Bartok pizzicato sounds. The strings that are to be plucked are indicated through tablature notation, rather than regular notation.

### *Accents*

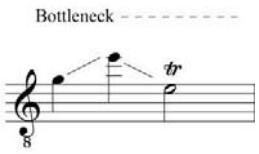
Notes in horizontal cells of bottleneck sounds can be accented. The performer can execute the dynamic accent by plucking the marked note louder than the surrounding notes.

### *Staccato*

Horizontal cells of bottleneck sounds can be scored with staccato articulation. The guitarist performs the staccato by damping the string with the right or left hand.

## Embellishment

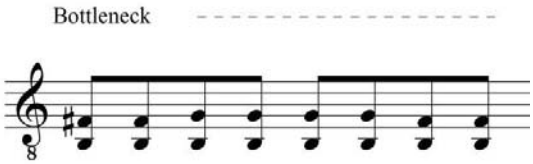
*Figure 16.12 Embellishment*




Embellishments can be used by attaching a pitch glissando to a note in the sequence (Figure 16.12). While the left hand performs the embellishment, the right hand can continue to engage in the performance of other sounds.

## Non-functional writing

*Figure 16.13 Non-functional writing*

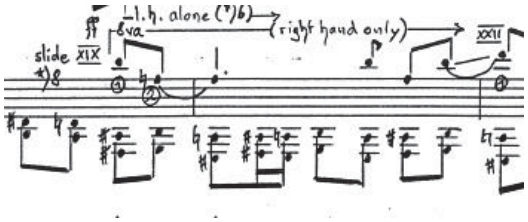



An example of non-functional writing for horizontal cells of bottleneck sounds:

- Vertical cells that are not transpositions of the open string intervals (Figure 16.13)

## Combinations with other sounds

*Figure 16.14 Bottleneck sounds and hammered sounds in Maier*




(CRYSTAL VERMIN, MAIER)

Bottleneck sounds can be scored with other sounds, such as regular plucked sounds, harmonics, hammered sounds and Bartok pizzicatos. Figure 16.14 displays a literature example in which Maier combines bottleneck sounds produced with the right hand alone with hammered notes produced by the left hand alone. These two sounds can be connected at high speeds and performed simultaneously, because each sound is produced with a separate hand.

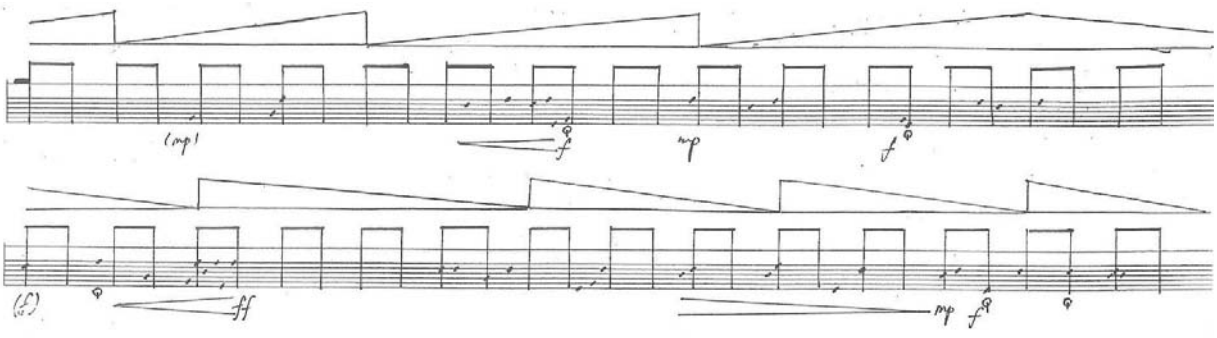
# 16.4 Textures

Textures containing bottleneck sounds are usually scored as continuations of horizontal cells. The following examples are presented primarily for the purpose of illustrating how some textures in repertoire pieces have been put together.

## 16.4.1 Textures as continuations of horizontal cells

### Texture of scratching and glissando bottleneck sounds

*Figure 16.15 Texture of scratching and glissando bottleneck sounds*




(AKEPHALE, BARTLETT)

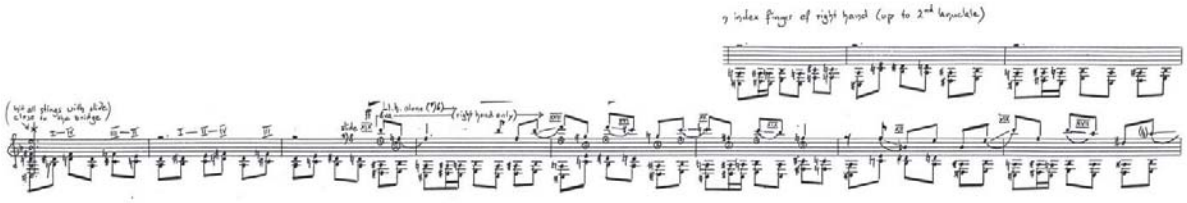
Bartlett continues the horizontal cell of scratching bottleneck sounds and resonating glissando bottleneck sounds for many measures, creating a texture (Figure 16.15). The bottleneck is used as a

gateway to a cleverly composed texture, in which all sounds are subordinate to the continuous waves of the bottleneck glissando. The Bartok pizzicato sounds are used as dynamic outbursts, contrasting with the inherently softer regular plucked sounds. Bartlett, suitably, uses graphic notation, which allows the performer to visually estimate the moments of attack, and visually relate the attacks to the bottleneck waves and the dynamic markings.

## 16.4.2 Textures as combinations of horizontal cells

### Texture of bottleneck sounds, hammered sounds and object tambora

*Figure 16.16 Texture of bottleneck sounds and hammered sounds*



(CRYSTAL VERMIN, MAIER)

Maier combines hammered sounds with object tambora (performed with the bottleneck) and bottleneck sounds, creating a texture (Figure 16.16). In contrast to the texture of Bartlett, the bottleneck sound is a compartment of the texture, rather than a sound that influences all notes that appear in the texture. A scordatura is used (see Figure 11.33), allowing for unusual intervals on the hammered bass notes. The bottleneck is attached to a finger of the right hand, instead of the left hand. The fact that the bass notes are hammered with the left hand allows the performer to create pitches and simultaneously pluck the strings with the right hand. This complex interplay of actions of the right and left hand makes this unusual texture possible, including its unusual combinations of sounds, as well as the large pitch range in which both the low and high range are very actively employed. At the same time, the texture requires careful coordination on the part of the performer for correct execution, as both hands are engaged in very different and unusual actions.