

Extended Techniques for the Flute

All audio examples can be accessed at

https://www.dropbox.com/sh/5xtfdukgyi5ilgv/AACSPn3FnUaIhwzoAluYV_F9a?dl=0

A. Percussive Effects:



- **flutter tonguing**: produces a “tremolo” effect in the sound. There are two types of flutter tonguing: Italian, where the “R” is rolled with the tip of the tongue, and French, where the “R” is rolled in the back of the throat. Typically, one doesn’t specify which flutter tonguing to use, though French flutter works better in the low register, while Italian is more effective in the high register.

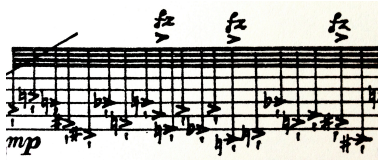
key slap: exaggerated striking of the keys with the fingers, producing a pitched, “tapping” sound. Typically, the lower the note being key-slapped, the more resonant the percussive sound. Notes higher than D5 are not effective for key-slapping. Notes can be key-slapped without any air pressure (resulting in a percussive tapping sound only), or key-slapping can accompany conventional playing, resulting in a “popping” articulation before the beginning of the note. Key slaps with the flute’s aperture sealed sound a *Major 7th* lower than the note fingered.

Conventional playing accompanied by key slaps should be notated thus:



Key slaps with no subsequent air pressure can be notated thus:



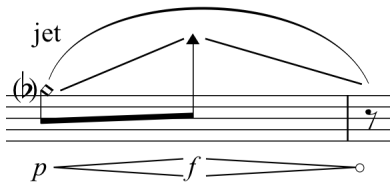


- **pizzicato**: plosive lip or tongue effects, produced by an exaggerated "T" or "P" attack without any subsequent breath pressure.

Recommended listening: Brian Ferneyhough: *Cassandra's Dream Song* (1970)
Lines 1 and 4 of Page One make extensive use of pizzicatos key slaps (including those with the aperture sealed).

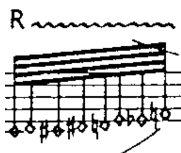


- **tongue ram**: produced by placing the aperture hole between the lips, exhaling forcefully, and stopping the air stream suddenly with the tongue ("ht" would probably be the best way to describe this action phonetically). Because the aperture is covered, tongue rams sound a Major 7th lower than fingered. When writing tongue rams, notate the fingered note, *not* the sounding note.



- **jet whistle**: produced by covering the whole mouthpiece between the lips, and exhaling violently into the instrument. This gives the aural effect of an extremely noisy, aeolian glissando. Jet whistles generally sound a Major 7th lower than the notated fingering.

Recommended listening: Salvatore Sciarrino: *Come vengono prodotti gli incantesimi?*
Page Two of the score alternates between tongue rams and jet whistles, interspersed with overblown harmonics.



- **lion's roar**: covering the whole mouthpiece between the lips, and flutter-tonguing into the flute. Moving the fingers will create the "lion's roar." The larger the flute, the more successful the lion's roar.

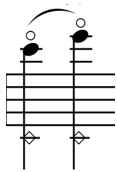
- **unconventional articulations:** generally, any consonant attack other than the typical "T" or "K" (though even these can be used with excessive force, creating an unusual percussive effect). Consonants that work particularly well are "CH", "SH", "SSS", "FFF", "VVV", and the Italian rolled "R" (as in flutter-tonguing). These articulations work especially well when the flutist is executing a "breathy" tone; conventional, "beautiful" flute tone is more difficult to produce with these articulations. Consonants that do not allow the flute to resonate (such as "MMM", "NNN", "L") are not as successful.

Recommended listening: Kaija Saariaho: *Noa Noa* (1990) for flute and electronics. Saariaho depicts the phonemes to be articulated in a separate staff, beneath the flute line.

General Notes regarding percussive effects:

1. When in doubt, keep it in the first octave. Most percussive effects work best when used in the first octave of the flute: B3/C4 - C5/D5. After this, the pitch content of these effects is compromised, or lost entirely.
2. Always notate the fingered note, not the resulting pitch.
3. The bigger the flute, the better the percussive effect. Most percussive effects don't work so well on piccolo. Alto flute and bass flute, however, are very well suited to percussive effects (provided it's kept within the first octave of each instrument).

B. Unconventional Tone Colours / Effects:



- **harmonics.** Each note in the first octave of the flute (B3/C4 – Bb4/B4) is capable of producing the harmonic series by gently accelerating the air speed. Note: the second octave fingerings for E5 to B5 are *the same* fingerings as those used in the first octave (E4 to B4). So these second octave notes don't officially count as harmonics! D4 and D#4, while employing different fingerings than D5 and D#5, produce harmonics at the octave that sound more or less identical to the "proper" D5 and D#5 fingerings.

Observe that the fundamental (ie., fingered note) is typically written as a diamond-head. Also note that the higher the fundamental the fewer harmonic options are available.

Harmonics can also be split to create multiphonics (see section on multiphonics); it's generally very possible to simultaneously play two consecutively occurring harmonics from the same fundamental, to beautiful effect (for example, as in Berio's *Sequenza* for solo flute). One cannot, however, "skip" harmonics; so if a flutist fingers a low C4 fundamental, it's possible to play G5 and C6 simultaneously, or C6 and E6 simultaneously, not it's not possible to play G5 and E6 simultaneously without getting the C6 sounding.

For more information on harmonics, please refer to the Flute Colors site:

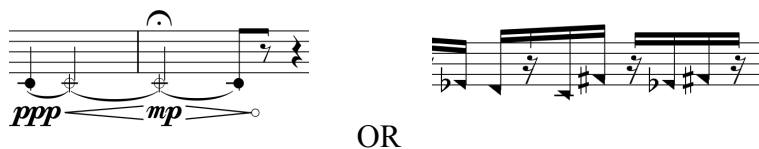
<https://www.flutecolors.com/techniques/harmonics/>

Also, flutist Helen Bledsoe writes an informative article about harmonics:

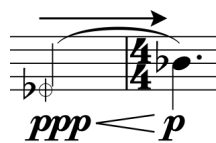
<https://helenbledsoe.com/?p=377>

*Recommended listening: **All'aure in una lontananza** (1977) by **Salvatore Sciarrino**.* In this piece Sciarrino deftly alternates between two fundamental fingerings to produce the same note. The result is a rapid oscillation of timbre while maintaining (more or less) the same pitch. Note: you can also alternate between harmonic fingerings and a “real” note for more timbral diversity.

*Recommended listening: **Hermes** (1984) by **Salvatore Sciarrino**.* The opening of *Hermes*, after a percussive, overblown attack, quietly and gently oscillates through the harmonic series of a fingered low “C”.



- **aeolian tone**, or "gasping"/"breathy" tone: notes with an abnormally diffuse tone quality, generally produced with a wide (or wider) embouchure. The diffuseness of the tone can be controlled in most cases so as to produce “almost normal” sound with a hint of air, through to almost entirely diffuse. Transition from one to the other is typically written with an arrow above the notes affected:



Air can also be blown directly *into* the instrument, sounding roughly a Major 7th lower than fingered. Rapid motion of the fingers can produce a gestural sound similar to the wind rustling through the trees. Changing the angle of the air can produce a harmonic-like effect. Also, changing to a consonant such as “Sshh” or “Hsss” will make this effect louder (though some of the timbral subtlety is lost). It is also possible to *inhale* inside the flute. While the resulting sound is different than that of exhaled air, it makes it possible to create a continuous “wind effect.”

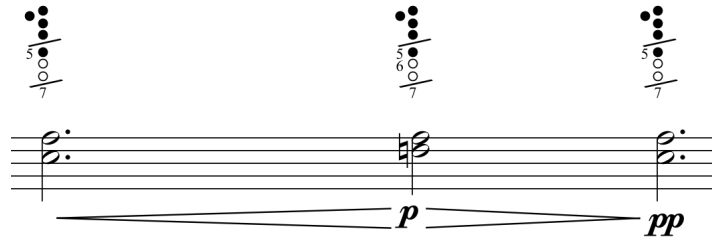


- **whistle tones**: by fingering the fundamental, and blowing gently across the aperture, the flutist can create the individual partials of notes, sounding very

high, pure, and extremely soft. Generally, it is difficult (though not impossible) to sustain isolated notes, as whistle tones naturally tend to oscillate one to another. The first octave of the flute (B^3 to $C\sharp^5$) produces the most successful (ie, the loudest, richest) whistle tones.

Recommended listening: Gilles Tremblay: *Envol* (1984)

Page One of the score opens with aeolian attacks, and ends with whistle tones.



- **multiphonics:** the simultaneous sounding of two or more notes. Multiphonics on the flute can be as simple as splitting an octave, so that the fundamental and the first harmonic sound at once, or can be as complex as to include anywhere between four and twelve(!) notes at a time (though it can be difficult, or even impossible, to get all the notes to sound simultaneously – for especially complex multiphonics it's common to oscillate between notes). Robert Dick's *The Other Flute* (Multiple Breath Music Company, 1989) gives one of the most extensive lists of flute multiphonics. Note: always provide the fingerings for multiphonics.

C. Microtones and Glissandi

- **microtones:** the flute is particularly successful at producing quarter tones and microtones, from D^4 upwards (notes lower than this, from B^3 to $C\sharp^4$, can be manipulated with the embouchure to produce microtones, but these generally tend to be inaccurate and timbrally inconsistent). Generally, it is not necessary to notate fingerings for quartertones. However, if you are composing with extremely small microtones, or are working with a flute player who is unfamiliar with playing microtones, you may wish to provide a chart (eg. as provided in Robert Dick's *The Other Flute*) in the preface of the score. The accepted symbols for quarter tone accidentals are:

Quarter tone sharp:

Three-quarter tone sharp:

Quarter tone flat:

Three-quarter tone flat:

Recommended listening: **Karlheinz Stockhausen: Xi** (1987)

Here, microtonal writing is interspersed with vocal effects.

glissando: there are two ways of producing glissandi on the flute: 1.) by modifying the embouchure and/or direction of the air stream (this, however, also compromises the tone quality), or 2.) by gradually sliding the fingers on and off the keys of an open-hole flute. Generally, glissando techniques are more limited on the flute than on other instruments (such as strings, or even clarinet), but intervals of up to a third or a fourth are possible in particular registers. As a rule, it is easier to glissando *down* rather than up.

Recommended listening: **Michael Finnissy: *Sikangnuqa*** (1979)

This unusual and virtuosic piece makes liberal use of both lip and finger glissandi, though they are not always idiomatic for the instrument.

Note: Microtones and glissandi (especially of a virtuosic nature) are most successful on the standard concert flute. Piccolo, alto flute and bass flute are all closed-hole instruments, and while these techniques are certainly possible on these instruments, they do tend to be less idiomatic. Check with a flutist first.

D. Vocal Effects: (See also Unconventional Articulations)

Singing, as well as the recitation of texts, is not uncommon in avant-garde flute music. In *Laconisme de l'aile*, Saariaho incorporates the text from a poem by Saint-Jean Perse, transforming the consonants of words into unorthodox articulations on the flute. Singing can be used in conjunction with normal flute playing to create a duo between flute and voice, or with multiphonics, to create three- or four-part harmony. A couple things to consider: 1.) It's always considerate to provide the option of singing an octave higher/lower, to accommodate varying vocal ranges. 2.) If you are using a separate staff for vocal writing, please note that it traditionally goes *beneath* the flute line.

Recommended listening: **Andrew Ford: *Female Nude*** (1993)

Andrew Ford is an Australian composer who created this delicate, beautiful work for solo alto flute. The soloist alternates between playing and sung phonemes, creating an arresting dialogue. Collectively, the phonemes form the name "Mondrian."

Recommended listening: **Reza Vali: *Song*** (1987)

This is an exceptional piece that combines singing (notated on a separate staff) with multiphonics, creating moments of four-part harmony! The overall effect breathtakingly recreates the sound-world of the Persian flute, *ney*.

E. Theatrics

If you have a flutist who is up for it, theatrics can be very effective with this instrument. The flute is extremely portable (especially compared to a bassoon!). If you want to write a piece incorporating theatrical elements some things to consider:

1. Not everyone is comfortable doing things beyond traditional flute playing. Also, there may be certain physical gestures that work against the playing of the flute. Obviously, never attempt anything that could potentially damage the instrument (or the player!). In

all cases, check with a flutist.

2. If your piece requires a costume, remember that the flutist's face and fingertips cannot be covered!
3. If there is an unusual amount of mobility in your piece, the flutist may have to memorize the music. If this is the case, allow extra time for preparation.
4. If your piece uses amplification and/or electronics, be aware that choreography may be compromised if there are cords, microphones, etc. attached to your performer.

Recommended listening: Anything by **Karlheinz Stockhausen**. You can watch Canadian flutist Stephanie Bell perform Stockhausen's solo piccolo piece, *Zungenspitzentanz*, here:

<https://www.youtube.com/watch?v=oNCONxMXx7k&t=803s>

Her performance begins at 13:40. *Zungenspitzentanz* is an excellent example of Stockhausen's later flute writing: virtuosic, choreographed, costumed, and memorized.

F. General issues to consider:

Notation:

1. Keep it simple, keep it practical. How would you want these effects notated if you were performing the piece?
2. Sometimes having a separate staff (for vocal effects, for example) makes reading the piece much easier – other times it can unnecessarily complicate things. Remember: flutists are not pianists, and are typically not used to playing off multiple staves.
3. Having a clear score is better than having a score that looks sexy, but confounds the player.

Presentation:

1. With regard to notation font size, larger is *always* better, especially for complex music.
2. If you are emailing parts to a performer, have them formatted to 8.5x11. Performers typically won't go to the print shop to print your piece. Almost 99% of the time, they will print your piece up on their home printer.
3. For the most part, portrait is better than landscape, especially if the part is bound.
4. Keep your music enharmonically consistent – even in non-tonal music. For example, avoid things like writing F-sharp immediately followed by A-flat, or B-flat immediately followed by B-sharp. Most performers are informed by conventional harmonic training, and can become confused (or worse: resentful!) when confronted with inconsistencies such as these.

Recommended Reading:

Levine, Carin & Mitropoulos-Brott, Christina. *The Techniques of Flute Playing*.
Bärenreiter Editions.

Volume One focuses on the flute; Volume Two focuses on piccolo, alto flute, and bass flute.

Dick, Robert. *The Other Flute: A Performance Manual of Contemporary Techniques*.
Second Edition, Multiple Breath Music Company, 1989.

Artaud, Pierre-Yves. *Present Day Flutes*.
Editions Gérard Billaudot, 1980.

Recommended Listening:

Brian Ferneyhough:
Ferneyhough: Music for Flute
Kolbeinn Bjarnason, flutes
Bridge CD 9120

Ferneyhough's scores are published by Peters

Kaija Saariaho:
L'Aile du Songe
Camilla Hoitenga, Finnish Radio SO, Jukka-Pekka Saraste
Naïve CDs: MO 782154

Saariaho's scores are published by Chester

Salvatore Sciarrino:
l'opera per flauto, Volumes 1 and 2
Mario Caroli, flute
Stradivarius CDs: STR 33598 & 33599

Sciarrino's scores are published by Ricordi

Karlheinz Stockhausen:
Musik für Flöte: Kathinka Pasveer spielt 9 Kompositionen
Kathinka Pasveer, flutes
Stockhausen Verlag: CD 28 A-B

Stockhausen's scores are published by Stockhausen Verlag