

# **Khaen: the bamboo free-reed mouth organ of Laos and Northeast Thailand**

## *Notes for Composers*

by Christopher Adler



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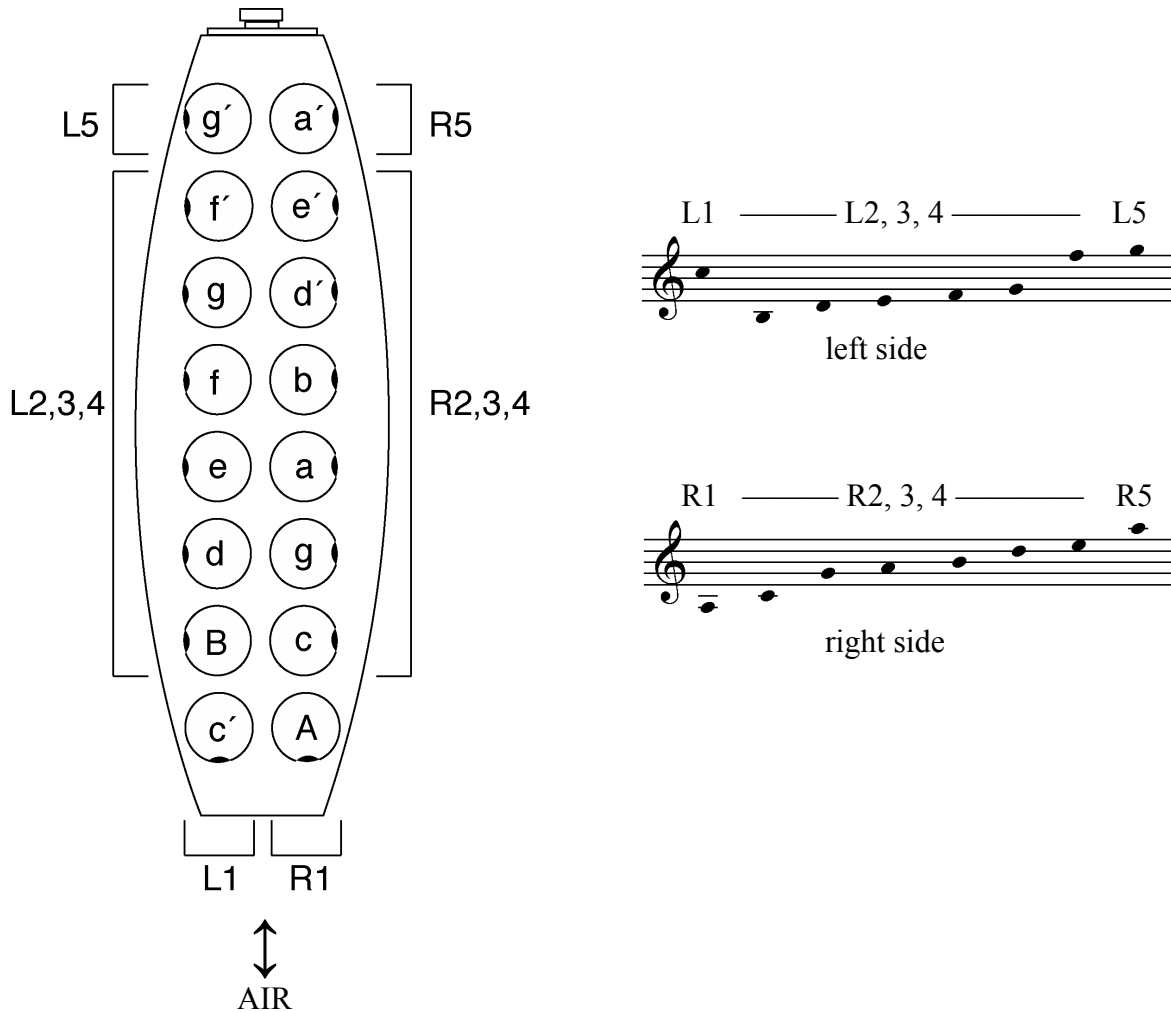
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### **1. Construction and playing position**



The khaen is held between the hands and air is blown into and sucked through the central windchest which holds all the pipes. Each pipe contains a small metal reed. When air moves in either direction through the pipe, it escapes through the finger hole and the pipe does not sound. When a finger hole is covered, the pipe sounds. It is therefore possible to play as many as ten notes simultaneously, or more if putty is used to activate drone pipes.



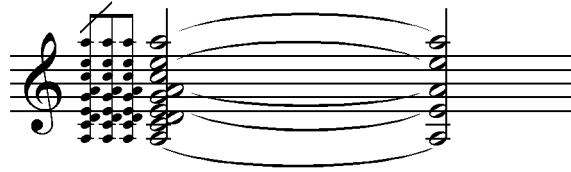


### 3. Breathing

Each pipe of the khaen sounds whether the air is moving in or out. It is therefore possible, and idiomatic to the instrument, to play continuously. Continuous legato playing is not possible, however, because a slight accent is created each time the breath changes direction. In traditional music, this is masked by nearly constant use of rhythmic accents made by tonguing. For legato playing, phrasing may be indicated as with any wind instrument with the understanding that no break or catch breath is required. It is possible to expel or take in air through the nose while playing so the breath changes can be placed somewhat flexibly regardless of dynamics. I am not able to do circular breathing. In general, the khaen does not require a high volume of air and so it is possible to play continuously for a very long time.

All manner of breath effects and tonguings are possible in order to create articulations. Standard wind instrument notation is appropriate for these.

Note that fluttertongue is only possible on an out-breath. Fluttertongue may be done with a variety of intensities, from a slight pulsating coloration to an extremely rapid staccato. The use of fluttertongue grace notes as an embellishing accent is idiomatic:



Breath tremolo, subtle or extreme, fast or slow, is possible, and may serve as an expressive coloration akin to vibrato.

#### 4. Basic traditional idioms and techniques

Traditional Lao and Northeast Thai music consists of two layers: drone and melody. The melody is often embellished in parallel octaves, fifths and harmonies and may also be elaborately ornamented. For more detailed information about the structure of traditional khaen music, the best reference is Terry Miller, *Khaen Playing and Mawlum Singing in Northeast Thailand* (Greenwood Press, 1985). An additional useful reference is *The Garland Encyclopedia of World Music, vol. 4.: Southeast Asia* (see “Laos”).

##### *drones*

If drones are used, they may be held by one of the fingers or stopped with putty. If a drone is stopped with a finger, note that it will constrain the hand position. For example, if the third finger holds the **a** on the right side of the instrument, the second and fourth fingers will each be limited to playing notes below or above the **a**, respectively. It is often possible, however, to quickly and subtly substitute the finger which holds a drone pitch. If putty is used to hold a drone pitch, care should be taken as to when the putty is placed or removed during the piece, if at all. Placing putty on a drone pitch during a pause or rest takes only a few seconds. For putty to be placed or removed while the instrument is sounding, the hand on the proper side of the instrument must be entirely free. This technique is awkward in performance but is possible (see *Epilogue for a Dark Day*).

I use a diamond-shaped notehead to indicate a drone pitch. An ordinary note tied to a diamond-shaped note indicates that the pitch is to be held as a drone from that point on. To indicate that the drone is to be released, a diamond-shaped notehead is tied to an ordinary note, thus indicating exactly the point at which the drone is to be released. This helps to reduce the visual density of the score, especially when multiple drones are used. In contemporary music, a note held for more than a measure or two may be more effectively notated as a drone.



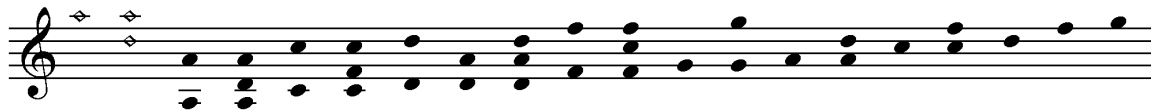
An example from *Epilogue for a Dark Day* demonstrating a change of drones held by the fingers (excerpt ©2001 Christopher Adler, all rights reserved):



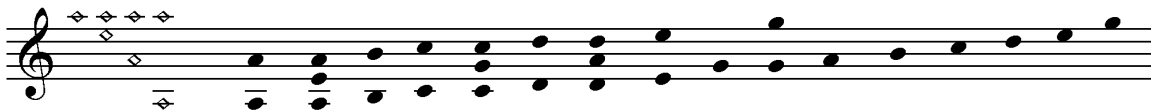
### *modes*

Traditional khaen playing is based on five melodic modes, each with characteristic drones and idiomatic melodic figures. These five modes are shown here in their most basic form, with alternative doublings for some notes, and with the different drones (diamond-shaped notes) that are typically used. The hand configurations within these modes are very idiomatic, comfortable and familiar. On one hand, music in these modes will be particularly easy to play, and on the other hand music in these modes will be more evocative of traditional music and therefore subject to expectations, associations and comparisons.

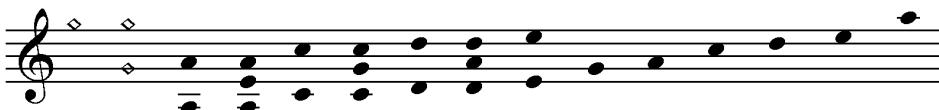
#### *lai noi*



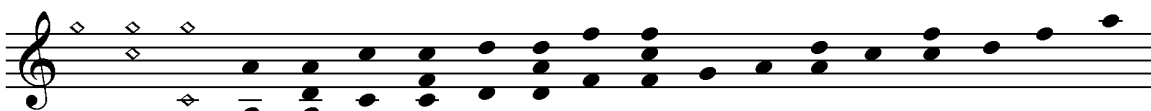
#### *lai yai*



#### *lai sootsanaen*

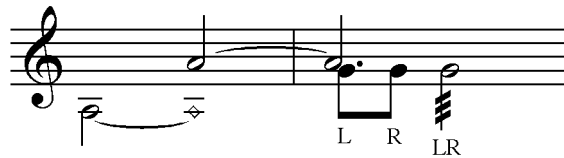


#### *lai bo sai*





An example from *the wind blows inside* demonstrating a double tremolo (excerpt ©1997 Christopher Adler, all rights reserved):



## 5. Dynamics

Note that the dynamic range of the khaen is small compared to most western concert instruments. The actual volume possible varies from instrument to instrument, but composers should simply be aware that a large variation in dynamics due to force of breath is not possible. Too little pressure will result in pipes not sounding or ‘whining’ out of tune. One way to achieve dynamic range effectively is to consider the number of pipes sounding, as with the harpsichord and pipe organ. Octave- and other doublings effectively increase the volume of sound, and large chords will seem particularly loud.

## 6. Special effects

Half-hole technique, portamento, glissando, detuning, vibrato and harmonics are not possible on the khaen.

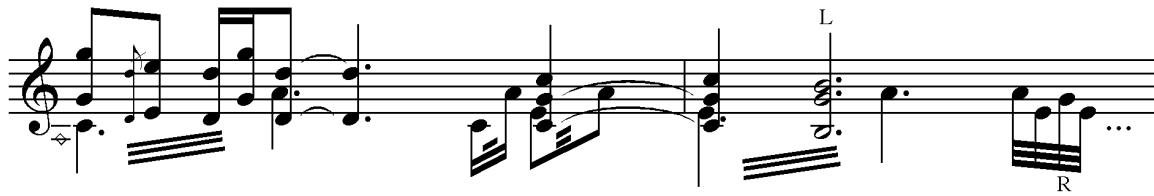
The only non-traditional special effect that I have found to be musically useful is singing into the instrument. This may be done only on an out-breath, obviously, and it is possible to independently control the relative dynamics of the singing and khaen, to an extent. Singing into the instrument modulates all the pitches in unpredictable ways, resulting in unsteady and vibrating pitches. When the sung pitch corresponds to a pitch of the khaen, that pipe may ring whether or not the finger hole is covered. When the finger hole is covered, that note may buzz more loudly than others. Subtle singing done just below the range of the range may sound similar enough to the khaen to be indistinguishable in context (see *Tashi Delek*). Sung glissandi are used in *Three Body Problem*.

## 7. Modern notation

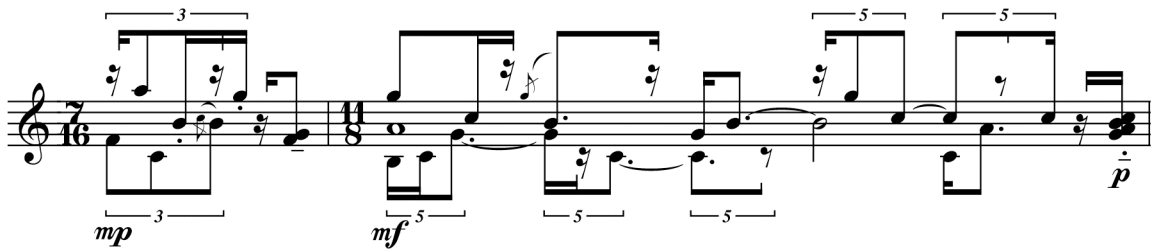
Khaen music may be notated on a single staff as in the above examples. The use of the drone symbol eliminates the visual clutter and unnecessary notation of pitches held as drones, so that the notation clearly shows moving voices. Fairly complex polyphony may be read from a single staff.

An example from *the wind blows inside* demonstrates three-voice polyphony (drone, sustaining tremolo and melody) notated on a single staff. Reading this particular example

is aided by the fact that the melodic voice uses characteristic doublings of the *lai yai* mode (excerpt ©1997 Christopher Adler, all rights reserved):

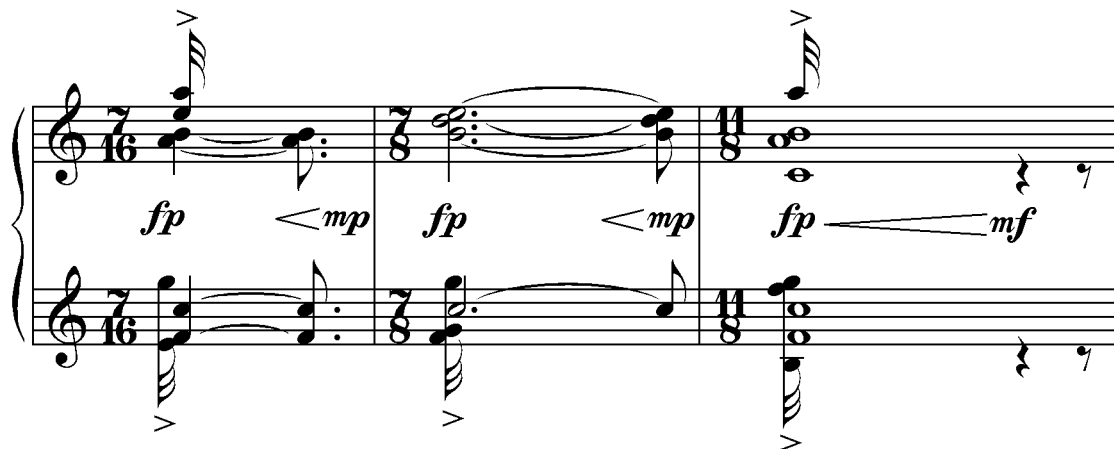


An example of polyphony from *Triangulation*, by Christopher Burns (excerpt ©2009 Christopher Burns, all rights reserved, used by permission):



In cases of dense harmonies, clusters, or sections in which the hands play independently, it is advantageous to notate using two staves, the upper staff for notes played by the right hand and the lower staff for notes played by the left. It is acceptable to switch between one and two staves in a single piece to facilitate ease of reading and conserve space.

An example of cluster harmonies much more easily read when notated on two staves, from *Triangulation*, by Christopher Burns (excerpt ©2009 Christopher Burns, all rights reserved, used by permission):



It is also possible to notate polyphonic layers of very different character on multiple staves, each of which potentially represents the full range of the instrument (see *Telemetry Lock*).

## 8. Contemporary works

### *Solo works*

Christopher Adler, *Epilogue for a Dark Day*

Christopher Adler, *Five Cycles*

Christopher Adler, *Tashi Delek*

Christopher Adler, *Telemetry Lock*

Christopher Adler, *the wind blows inside*

\* scores for these five pieces are available as a bound volume with commentary from [www.christopheradler.com](http://www.christopheradler.com)

Sidney Marquez Boquiren, *angel music*

Christopher Burns, *Triangulation*

David Loeb, *Karin: A Forest of Verses*

David Loeb, *Kawagiri: Rivermist in Summer*

### *Ensemble works*

Christopher Adler, *Three Body Problem*, for khaen and cello

Christopher Adler, *Three Lai*, for khaen, violin, and viola

David Loeb, *Three Friends of Winter*, for khaen, flute, guitar, cello and percussion

David Loeb, *The Maltese Plaza in Fog*, for three khaen

### *Recordings*

Christopher Adler, *Epilogue for a Dark Day* (compact disc, Tzadik TZ 8004)  
includes *Epilogue for a Dark Day*, *Three Lai* and *the wind blows inside*

David Loeb, *The Silent Waterfall* (compact disc, Vienna Modern Masters VMM2048)  
includes *Kawagiri: Rivermist in Summer*

David Loeb, *A Forest of Verses* (compact disc, Vienna Modern Masters VMM2054)  
includes *Karin* and *Three Friends of Winter*

Christopher Adler, *Telemetry Lock*, available for streaming from [www.artofthestates.org](http://www.artofthestates.org)

Christopher Adler, *Tashi Delek*, available as an mp3 from [www.christopheradler.com](http://www.christopheradler.com)

Sidney Marquez Boquiren, *angel music*, available from streaming from [instantencore.com](http://instantencore.com)

A recording of Christopher Burns' *Triangulation* is forthcoming.