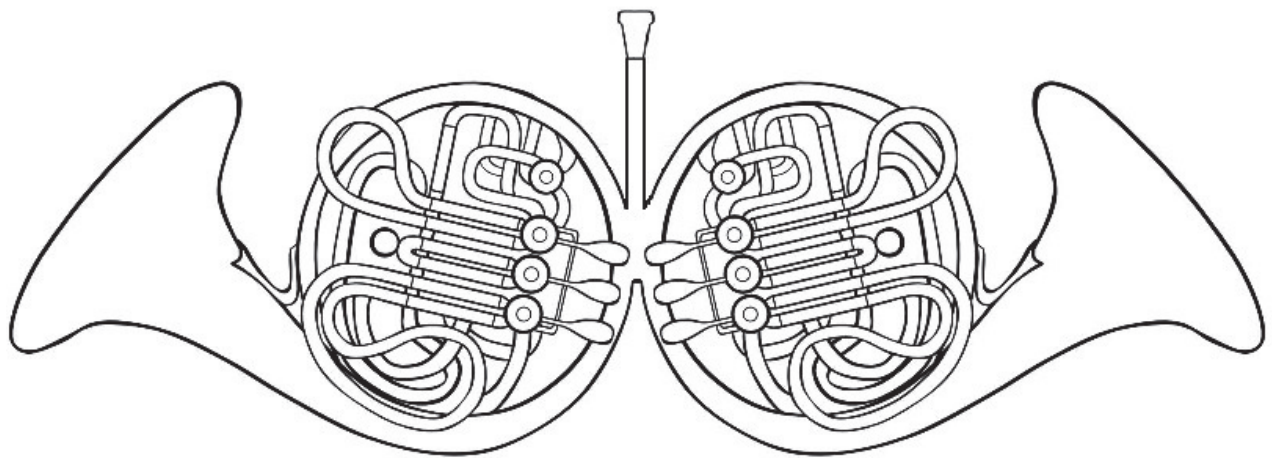


# A Practical Method for Horn Multiphonics



Michael Mikulka

This book is dedicated to my horn teachers: Pat Hughes, Douglas Lundeen, and Amy Larkey-Emelianoff. I would also like to thank Douglas Hill, Amie Margoles, Matt Marks, David Byrd-Marrow, Rose Valby, and Scott Whitener, who kindly took the time to review this book, test out some of the exercises, and offer helpful suggestions.

I am additionally grateful for all of the musicians who have shared their love of music with me over the years. I am particularly indebted to the horn studio at the University of Texas: they made me feel at home even though I was a composition major, provided me with great examples of beautiful and musical horn playing, and helped me grow as a musician. None of this would have been possible without the love and support from my parents Joseph and Charlette, and from my brother, Chris.

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# Preface

Horn players have been creating multiphonics, also commonly known as "horn chords", for well over 200 years. Despite their inclusion in Carl Maria von Weber's Concertino for Horn and Orchestra, multiphonics have been utilized rarely, and have been traditionally considered to be little more than a parlor trick.

Over the past several decades, though, interest in extended techniques has steadily grown. The ability to play multiple notes at the same time significantly expands the possibilities for unaccompanied horn repertoire. Other brass performers have already taken the time to learn the art of multiphonics: tubist Øystein Baadsvik is famous for his unaccompanied solo, "Fnugg", and trumpeter Craig Morris (former principal trumpet of the Chicago Symphony Orchestra) recently performed multiphonics extensively in Joel Puckett's Trumpet Concerto, "15th Night of the Moon".

Though producing multiple notes at once may seem like a daunting task, with practice it is a technique that can be achieved by almost any high-level horn player. You do not need to adjust your embouchure or make any drastic changes, and most of the skills required are the same skills which need to be developed in order to become a great horn player and an excellent musician.

In Douglas Hill's "Low Range for the Horn Player", he includes four multiphonic exercises, and recommends multiphonic playing as a way to improve low range technique. As someone who has always felt more comfortable in the middle and upper registers, I can testify that it has improved my low register. As Hill mentions, the notes that are played need to be controlled and fully stabilized in order for a quality multiphonic to be produced.

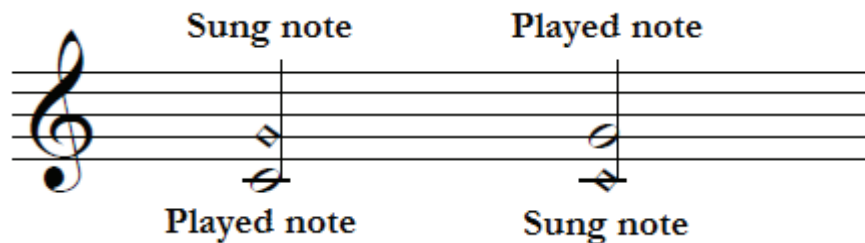
Personally, I believe that the skills developed the most by learning multiphonics are related to ear training. These are essential skills for mastering multiphonics, and they are extremely helpful for improving musicality, but they are skills that many musicians have not spent extensive time developing since the first 2-3 years of their undergraduate degree.

The process of creating and mastering multiphonics does not need to be mysterious or intimidating. This book offers step by step instructions, exercises, and etudes. It is my hope that laying out a clear path will allow more horn players to treat multiphonics as they would treat any other extended horn technique. Just like stopped horn, double and triple tonguing, and lip trills, multiphonics can be challenging at first. However, like those techniques, with practice and a little patience they eventually can feel completely natural.

There are currently only a few works which utilize horn multiphonics, but contemporary composers have the ability to change that. I personally have written multiple pieces featuring horn multiphonics, and other composers are likely to follow suit. As more woodwind players have embraced multiphonics, composers have eagerly incorporated them into their solo music, greatly expanding the palette for unaccompanied literature.

To help encourage the creation of new horn repertoire, I am including a section with some guidelines for composers who would like to write for horn multiphonics.

Because it is possible to produce multiphonics by singing both above or below a note, I considered it necessary to create a new form of notation that specifies which note is played and which note is sung. All of the notes that are played are given a standard notehead, whereas all of the notes that are sung have a diamond notehead.



There is, however, a significant constraint to this book: because so much of this book is covering uncharted territory, most of it relies on my personal experience. My personal experience with multiphonics is limited to my vocal range. I am including two versions of the exercises and etudes in this method book: one for low voices, and one for high voices. While I expect most of the high voice method to be useful, I am also sure that there will be some aspects that simply do not translate well. In addition, there are also likely to be benefits to having a higher vocal register, and it is possible there are other techniques capable in the upper range.

For this reason, I would like to see somebody else eventually write a similar book (or an updated version of this book) specifically for horn players with high voices.

Because so much of multiphonics involves singing, it is important to refrain from singing for excessive durations and to learn proper singing techniques so that you can avoid damaging your voice. For that reason (and for many other helpful reasons: some pertinent to multiphonics and some not), I suggest taking voice lessons or consulting a vocalist before any in-depth exploration of multiphonics. While I believe these exercises to be highly effective in developing multiphonic-specific techniques, some of the best things you can do to improve your multiphonics skills are to develop your singing and ear training skills.

# Producing Your First Multiphonics

The multiphonic I have found to be easiest to produce is the major 10th.

It is stable, consonant, the wide spacing helps differentiate the singing from the playing, and it is comprised of the root and the 3rd, which have very distinct auditory qualities.

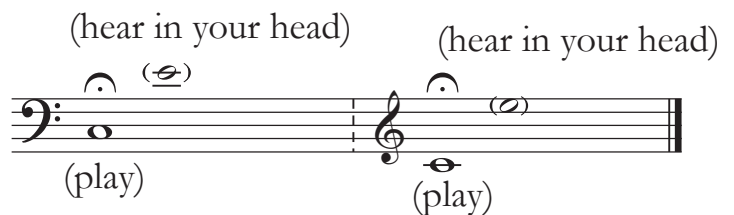
The example notes are a C (play) and an E (sing). I have chosen these notes because E (concert A) is toward the middle of most people's vocal range, and because C is played without valves in both octaves and is a fairly stable note.

However, the most important thing is to find a pair of notes (a major 10th apart) that you can play/sing comfortably, with stability, and for which you have control over your dynamics. Multiphonics tend to be easiest to produce in resonant spaces, so until you are highly confident in your abilities, it is highly recommended that you practice them in a quiet and distraction-free place with good acoustics, rather than a typical practice room.

The first step is to play the note: if you have a low vocal range, play the bass clef C, and if you have a high vocal range, play the treble clef C. Be sure to sustain a steady pitch and to use a full and even airstream.



Once you can reliably play the note evenly and in tune, play it while audiating the E a major 10th above it.



Now that you have the note in your head, sing it: it should be sung with a steady pitch and a full and even airstream. Make sure you are able to remain steady at a loud dynamic.



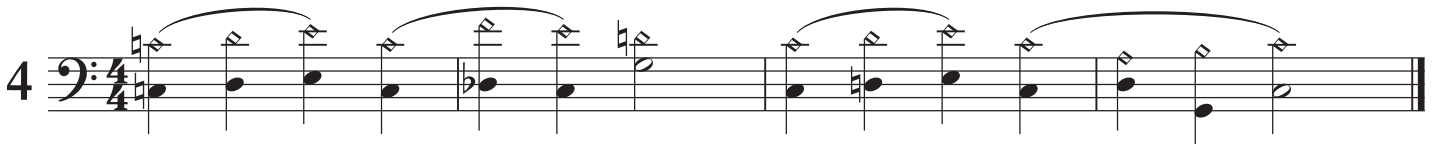
# Melodic Exercises

Practice playing fluidly across various intervals:

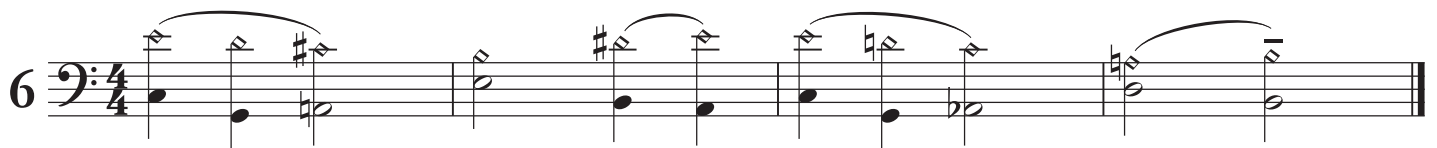
1 

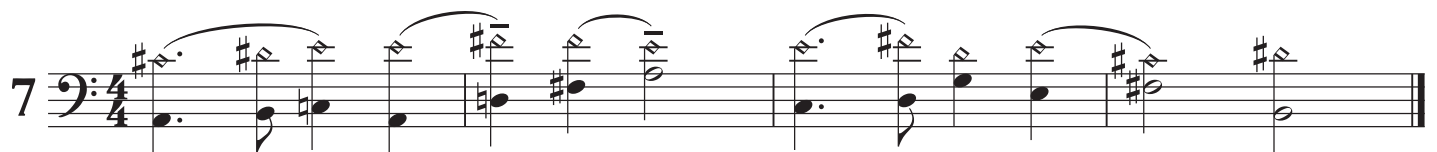
2 

3 

4 

5 

6 

7 

# Changing the Sung Note Only

When you need to change the note you're singing without rearticulating the note that you're playing, it is useful to give the new sung note an extra "breath attack" in order for the new interval to speak clearly

The first staff shows a sequence of notes: G#2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5. The second staff shows: B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6. The third staff shows: G#2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6. The fourth staff shows: B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6. The fifth staff shows: G#2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6.

## Melodic Exercises

Exercise 8: G#2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6. Exercise 9: G#2, A2, B2, C3, D3, E3, F3, G3, A3, B3, C4, D4, E4, F4, G4, A4, B4, C5, D5, E5, F5, G5, A5, B5, C6.



23 

24 

25 

26 

## Beats

The reason that minor and major 3rds rarely sound clean are because of "beats".

When you sing and play notes that are close together, if you are even slightly off in pitch (which will pretty much always be the case since our pitch changes in small amounts 100% of the time), a difference tone between 0-20 hz will appear, which will be heard as more of a rhythm than a pitch. These are "beats", and are essentially the same thing we try to eliminate while tuning.

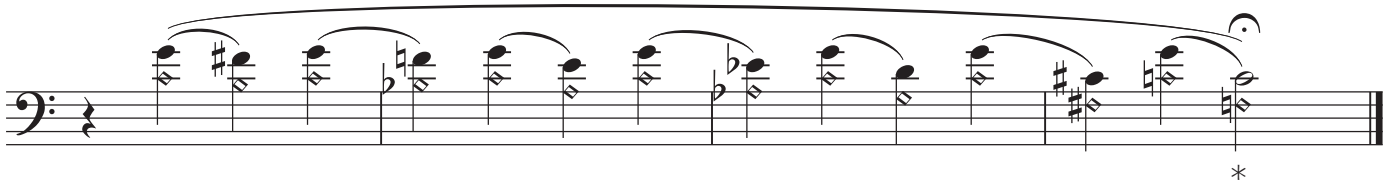
Creating beats deliberately and learning how to control them can be an interesting effect, however. Below are a few exercises that will help to develop this particular extended technique. When beats are desired, they will be notated with a capitalized B:

For this first exercise, start at a unison, and gradually expand outward until you reach a major 3rd. If this is not the most comfortable register for you, feel free to choose different notes. As you depart the unison, you will start to hear/feel beats: slowly at first, then very fast. As you get closer to the M3, they will start to be slower and less prominent again.



B

# Perfect 5ths Below

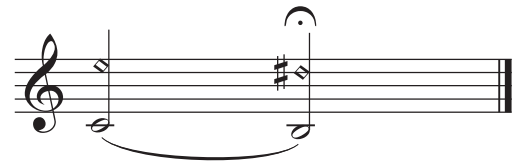


Play the same exercises up a P4:

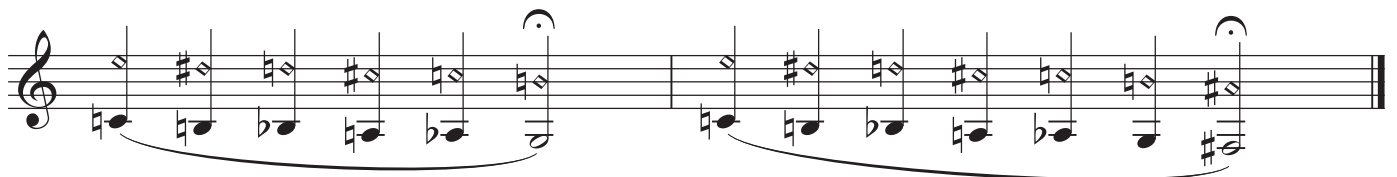


# Major 10ths

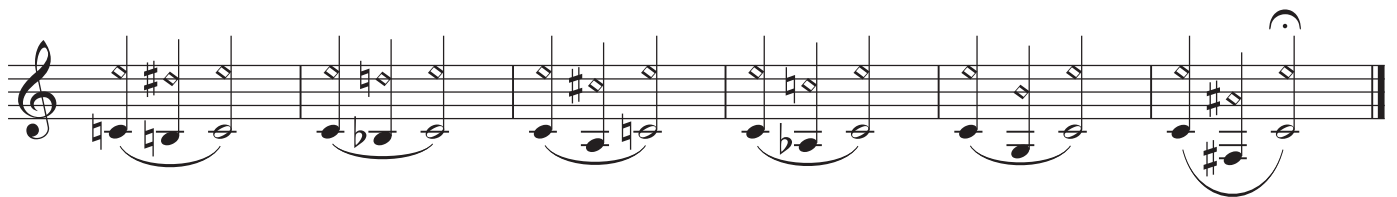
Begin by descending a half step: audiate the new pitches in advance of singing/playing them



Continue descending chromatically, adding one note at a time.



Now try it without the half-steps in between, returning to the initial C/E chord.



Once you get comfortable with the previous exercise, try moving between the intervals at a faster pace.



38

Musical notation for exercise 38, featuring a complex rhythmic pattern in 4/4 time with various note values and rests.

Machine-like

39

Musical notation for exercise 39, characterized by a steady eighth-note pattern in 4/4 time, with a "trm" marking and a note change to B<sub>4</sub>.

△ = on F horn, depress 1st valve 1/4 to produce octave overtone

Tenderly

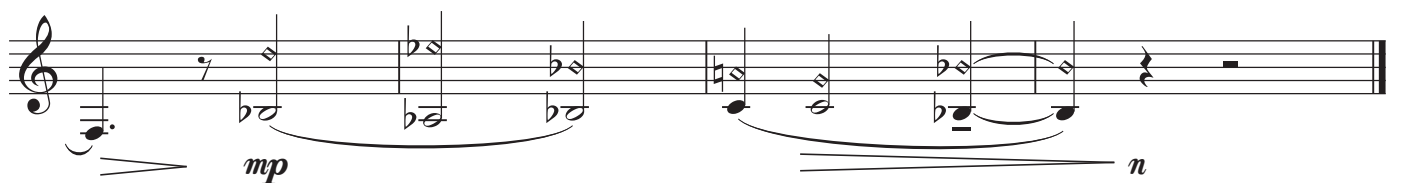
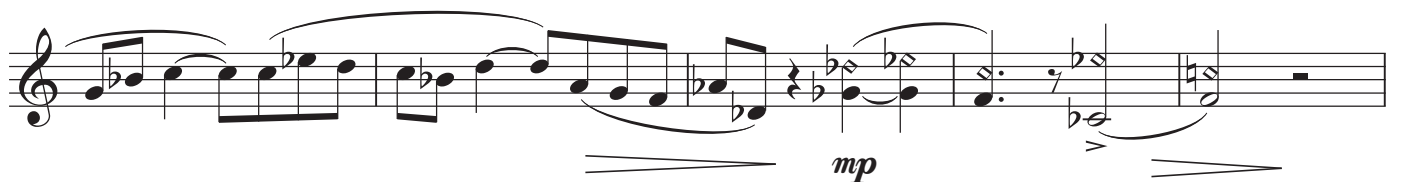
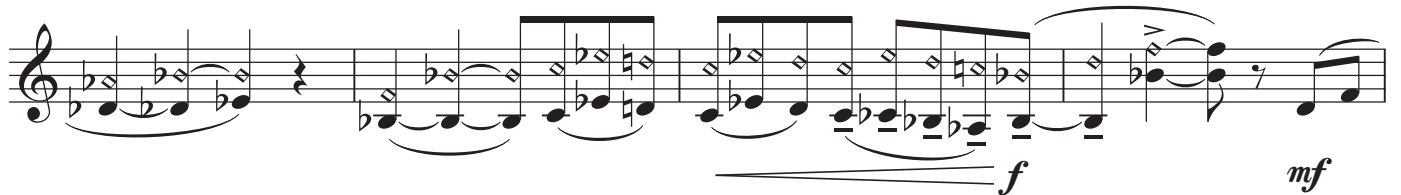
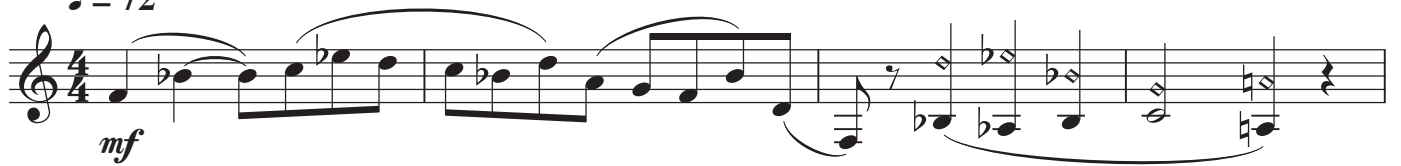
40

Musical notation for exercise 40, featuring a slower, more melodic line in 3/4 time with sustained notes and slurs.

## Cantilena

Molto rubato

♩ = 72



# Cadenza: Weber Concertino

as notated by Weber:

Horn in E

Musical notation for Horn in E, as notated by Weber. The score is in 4/4 time and consists of two staves. The first staff shows a melodic line starting with a whole rest, followed by a half note G2, a quarter note A2, a quarter note B2, a quarter note C3, a quarter note D3, a quarter note E3, a quarter note F3, and a quarter note G3. The second staff shows a series of chords: a whole rest, a half note G2 with a diamond-shaped difference tone (F#2), a half note A2 with a diamond-shaped difference tone (G2), a half note B2 with a diamond-shaped difference tone (A2), a half note C3 with a diamond-shaped difference tone (B2), a half note D3 with a diamond-shaped difference tone (C3), a half note E3 with a diamond-shaped difference tone (D3), a half note F3 with a diamond-shaped difference tone (E3), and a half note G3 with a diamond-shaped difference tone (F3).

with actual difference tones (\* = very faint, not resonant):

Horn in E

Musical notation for Horn in E, with actual difference tones. The score is in 4/4 time and consists of two staves. The first staff shows a melodic line starting with a whole rest, followed by a half note G2, a quarter note A2, a quarter note B2, a quarter note C3, a quarter note D3, a quarter note E3, a quarter note F3, and a quarter note G3. The second staff shows a series of chords: a whole rest, a half note G2 with a diamond-shaped difference tone (F#2), a half note A2 with a diamond-shaped difference tone (G2) marked with an asterisk (\*), a half note B2 with a diamond-shaped difference tone (A2) marked with an asterisk (\*), a half note C3 with a diamond-shaped difference tone (B2), a half note D3 with a diamond-shaped difference tone (C3) marked with an asterisk (\*), a half note E3 with a diamond-shaped difference tone (D3), a half note F3 with a diamond-shaped difference tone (E3), and a half note G3 with a diamond-shaped difference tone (F3) marked with an asterisk (\*).

# Cadenza: Weber Concertino

115

Arr. Michael Mikulka

## option A

Horn in E

*difference tone:  
not relevant*

\*\*\*play the low G slightly sharp and the F slightly flat. This way, the bottom note will be heard as G and the sung note will be heard as F, but the interval will be that of the 2nd partial to the 7th partial, not 8va+m7.

## option B

Horn in E

*difference tone:  
low B*

\*\*\*(see note in option A)

## Cadenza: Weber Concertino

Arr. Michael Mikulka

## option C

Horn in E

*difference tone:  
not relevant*

\*\*\*

\*\*\*(see note in option A)

## option D

Horn in E

*difference tone:  
not relevant*

\*\*\*

\*\*\*(see note in option A)

## option E

Horn in E

*difference tone:  
B a 5th below F#*

\*\*\*

\*\*\*(see note in option A)



**Michael Mikulka** is a composer and horn player currently based in Austin, Texas. He received his DMA in Composition from the University of Texas, where his primary teachers were Donald Grantham and Yevgeniy Sharlat. Michael received his master's degree in Composition at Central Michigan University, where he studied with David Gillingham, and he received his undergraduate degree in Music Education from Rutgers University.

Michael has studied horn with Pat Hughes, Douglas Lundeen, and Amy Larkey-Emelianoff. He performs regularly in Austin-area ensembles, including recent concerts with Density 512, Lab Orchestra, The Lone Star Brass Orchestra, and Pale Blue. Michael also frequently performs music by living composers, and has helped to premiere 12 solo and chamber pieces since 2013.

Michael's music is performed throughout the US and internationally, and his pieces have been honored as a winner or finalist in composition contests 32 times. Michael is the creator and conductor of the Vine Orchestra (which has premiered 52 six-second compositions), and he is the founder and operator of [newbandmusic.org](http://newbandmusic.org) (a free service which promotes self-published wind ensemble music by emerging composers).

Michael has written several works for horn:

- Six Miniatures for Horn and Piano
- 20 Advanced Two-Page Duets for Horn
- Four Romantic Songs for Horn and Piano
- The Carnival of Venice
- Catfish Louie
- Are They Ill-Tempered?
- Sarabande and Retaliation for Horn Choir
- Four Dickinson Miniatures for Horn Quartet
- Duet for Clarinet and Horn
- Sonata for Horn and Piano

You can find out more about Michael, hear/buy his music, and contact him at <http://www.michaelmikulka.com>