

# DELTADIATONICS SYNOPSIS

"Making the simple complicated is commonplace;  
making the complicated simple, awesomely simple,  
thats' creativity!"  
Charles Mingus

**Ron Di Salvio**  
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The **Deltadiatonics** Method embraces the evolution of chord symbology. It is an outcome of the Baroque figured bass (Classical) as utilized by Bach, Handel and Scarlatti, Standardized Chord Symbol Notation (Jazz), as formalized by Carl Brandt and Clinton Roemer and the Nashville Number System (Country). It utilizes symbols from all of the these systems and primarily includes:

- Arabic numbers: **1,2,3,4,5,6,7,8,9,10,11,12** and **13**
- Roman numerals: **I,II,III,IV,V,VI**, and **VII**
- Seven letters of our alphabet: **A,B,C,D,E,F** and **G**
- The flat, ( **b** ) sharp, ( **#** ) and natural ( **♮** ) symbols
- Deltadiatonics Symbols, **△ ▽ ∅ ○ ⊕ ⊗** and **T**

The results creates a succinct universal method readily accessible to all musicians, composers, theorists, song writers and improvisors.

## Deltadiatonics Harmonic Intervals

	PU	1	2	▽	△	4	T	5	+	▽6	6	7	△	P8
Dyads														
	Perfect Unison	Minor Second	Major Second	Minor Third	Major Third	Perfect Fourth	Tritone Augmented 4th Diminished 5th	Perfect Fifth	Augmented Fifth Minor Sixth	Major Sixth	Major Sixth	( Minor Seventh ) Major Seventh	Major Seventh	Perfect Octave
	0	b2	2	b3	3	4	#4   b5	5	#5   b6	6	b7	7	7	8


Common practice interval names and chromatic figures from the fundamental tone "C".

\* Nicolas Slonimsky in his book **Dictionary of Music** states; "Property of notes that sound the same but are notated differently; F sharp and G flat are enharmonically equivalent, as are G sharp and A flat." In Deltadiatonics we minimize the use of double flats and sharps and simplify notation whenever possible. *See the diminished seventh chord on page 3.*

## The Four Foundational Chords

All diatonic harmony, from simple three note chords (triads) to complex harmonies of the 13th, are derived from these four qualities. Examine the chords outer fifth interval: both major and minor qualities contain perfect fifths (**P5**). The augmented fifth (**+5**) is raised or sharpened (**#**), the diminished fifth (**°5** or **T** for Tritone) is lowered or flattened (**b**). Examine each chords combination of major (**▲**) and minor (**▼**) thirds. Each chord contains two thirds, one on top of the other, in four unique orientations. The major interval figuration 5,3,1, is the default from which the other triads are altered. When we lower, or flat the 3rd, we produce a minor triad. When we raise, or sharpen the 5th, we produce an augmented triad. When we lower, or flat the 3rd and 5th, we produce a diminished triad.

### Deltadiatonics Symbols for Triads

	<i>Major</i>	<i>Augmented</i>	<i>Minor</i>	<i>Diminished</i>
<i>Quality Symbol</i>	▲	+	▼	○
				
<i>Interval Figures</i>				
<i>Third Quality</i>	▼ ▲	▲ ▲	▲ ▼	▼ ▼
<i>Outer Fifths</i>	5 3 1 } P5	#5 3 1 } +5	5 b3 1 } P5	b5 b3 1 } T (°5)

## The Seven Foundational Chords

The triad with the addition of another major or minor third *layered* on top reveals three new harmonic qualities. We will examine these essential harmonic colors in the following ways: Deltadiatonic symbols, staff notation, interval figures, fifth analysis, compound triads and thirds. One fundamental precept in Deltadiatonics is the use of the numeral "7" which by default equals a  $\flat 7$ . This symbol is used exclusively for a dominant function, never for major or minor sevenths. In addition, since all dominant functions contain the tritone, as either a diminished fifth or an augmented fourth, these intervals are simply replaced with the symbol **T**, for tritone, to lessen confusion. This is a significant departure between common practice jazz notation, Nashville Numbering System and most traditional theory texts.

### Deltadiatonics Symbols for Chords of the Seventh

Harmonic Quality Symbols							
Staff Notation							
Interval Figures	1 3 5 7	1 3 #5 7	1 3 5 7	1 3 5 $\flat 7$	1 3 5 $\flat 7$	1 3 5 $\flat 7$	1 3 5 $\flat 7$ (6)
Layered Thirds							
Chord Names	C Major Seventh	C Augmented Major Seventh	C Minor Major Seventh	C Dominant Seventh	C Minor Seventh	C Half Diminished Seventh	C Diminished Seventh

\*

The doctrine of enharmonic equivalence lost its practical significance in notation with the advent of organized atonality...."

B is a B is B is a B,  
 And never C flat will it be.  
 C is a C is a C is a C,  
 And never B sharp will it be.  
 B double flat is nonsensical  
 When we know it's just a plain old A.  
 And why be unduly forensic,  
 Insisting the G double sharp is not A?

Nicolas Slonimsky

## Intervallic Fifth Analysis with Template

All chords of the seventh contain two combinations of the following three intervals: perfect fifths, (**P5**) diminished fifths, (**T**) and augmented fifths (**+5**). Choose the chord quality you are looking for and the chord root note, or letter name, that you want to construct a seventh chord on. On the root (**I**) play the fifth indicated and then *figure* up a major third (**III**) or a minor third ( **$\flat$ III**) and form the other fifth indicated. The template below can be used starting on any of the twelve chromatic tones.

Here is a helpful visual aid in finding perfect fifths (**P5**) and tritone (**T**) intervals on a keyboard. All **P5** contain two black keys or two white keys with the exception of  $B\flat$  and F, black and white and B and  $F\sharp$ , white and black. All **T** are white and black, or black and white with the exception of F and B and B and F which are both white and white.


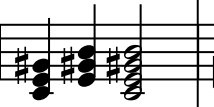




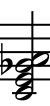
### Diatonics Fifth Analysis

$\triangle$	$\triangle_+$	$\otimes$	7	$\nabla$	$\emptyset$	$\circ$
$\frac{\text{III P5}}{\text{I P5}}$	$\frac{\text{III P5}}{\text{I +5}}$	$\frac{\flat\text{III +5}}{\text{I P5}}$	$\frac{\text{III T}}{\text{I P5}}$	$\frac{\flat\text{III P5}}{\text{I P5}}$	$\frac{\flat\text{III P5}}{\text{I T}}$	$\frac{\flat\text{III T}}{\text{I T}}$
<i>C Major Seventh</i>	<i>C Augmented Major Seventh</i>	<i>C Minor Major Seventh</i>	<i>C Dominant Seventh</i>	<i>C Minor Seventh</i>	<i>C Half Diminished Seventh</i>	<i>C Diminished Seventh</i>

## Overlapping Triad Analysis with Template

We can also view chords of the seventh as a combination of two overlapping triad qualities derived from the Four Foundational Triads. Examination of these templates will shed light on the basic principles of chord substitution (interchangeability of major and minor, diminished and dominant). Using the template below choose the chord quality you wish to hear in any key. Choose the root note, or letter name that you want to construct a seventh chord on. On that root (**I**) play the triad indicated and then *figure* up a major third (**III**) or a minor third (**bIII**) and form the other triads quality. Cross check using Fifth analysis.

## Deltadiatonic Dual Triad Analysis

$\frac{E\triangledown}{C}$	$\frac{E}{C+}$	$\frac{E\flat+}{C\triangledown}$	$\frac{E^\circ}{C}$	$\frac{E\flat}{C\triangledown}$	$\frac{E\flat\triangledown}{C^\circ}$	$\frac{E\flat^\circ}{C^\circ}$
$\triangle$	$\triangle_+$	$\otimes$	7	$\triangledown$	$\emptyset$	$\circ$
						
<i>Template</i>						
$\frac{III\triangledown}{I\triangle}$	$\frac{III\triangle}{I+}$	$\frac{bIII+}{I\triangledown}$	$\frac{III^\circ}{I}$	$\frac{bIII\triangle}{I\triangledown}$	$\frac{bIII\triangledown}{I^\circ}$	$\frac{bIII^\circ}{I^\circ}$
<i>C Major Seventh</i>	<i>C Augmented Major Seventh</i>	<i>C Minor Major Seventh</i>	<i>C Dominant Seventh</i>	<i>C Minor Seventh</i>	<i>C Half Diminished Seventh</i>	<i>C Diminished Seventh</i>

# Inversion of Triads and Chords of the Seventh

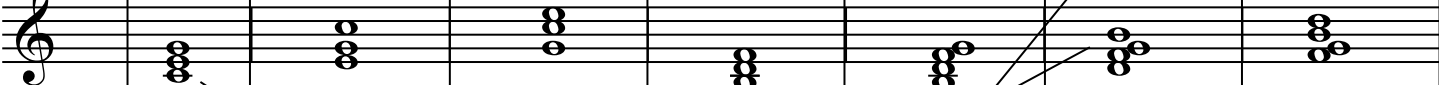

The idea of a musical shorthand notation system is not new. The Baroque classical period between 1600 and 1750 gave us a system which used Arabic numerical figures, written below a single bass note, allowing the accompanist to *realize* the harmonies above it. In the 1900's jazz composers began using the first seven letters of the alphabet along with Arabic numerals, placed above the melody, for harmonies to be *realized* below it. This chart compares Baroque notation, current practice slash chord notation, British and Deltadiatonic symbols.

In the Deltadiatonic shorthand system we use a specific configuration of diagonal and horizontal slash lines for compound and polytonal chord construction. For compound chord structures the letter to the left of the diagonal slash line indicates a chord; the letter to the right of the slash designates a single note in the bass. For polytonal chords we use a horizontal line designating that there are two chord qualities, one placed above the other. Both configurations are designed to simplify inversion of triads and sevenths as well as highly altered chords and upper structures.

## Line Configuration for Chords

	<b>G7/ F</b>	<i>G dominant seventh with an F in the bass</i>		<b>F# C</b>	<i>F sharp major triad over a C triad</i>
---	------------------	---	--	-----------------	---

*Current common practice  
symbols well accepted in most genres.  
Used in Deltadiatonics for simple  
chords.*

	<b>C</b>	<b>C/E</b>	<b>C/G</b>	<b>G7</b>	<b>G7/B</b>	<b>G7/D</b>	<b>G7/F</b>
							
							
<i>Figured bass, full figuration</i>	5 3	6 3	6 4	7 5 3	6 5 3	6 4 3	6 4 2
<i>Figured bass, usual abbreviation</i>		6 3	6 4	7	6 5	4 3	2
<i>British symbols</i>	<b>Ca</b>	<b>Cb</b>	<b>Cc</b>	<b>G7a</b>	<b>G7b</b>	<b>G7c</b>	<b>G7d</b>
<i>Deltadiatonic symbols used for complex structures</i>	<b>C</b>	<b>C<math>\Delta</math> 1</b>	<b>C<math>\Delta</math> 2</b>	<b>G7</b>	<b>G7 1</b>	<b>G7 2</b>	<b>G7 3</b>

*Figures  
below,  
harmony above*

*Chord  
Symbols above  
harmony below*

# Quartal Trichords with Inversions

Vincent Persichetti in his book *Twentieth-Century Harmony* states; "Three kinds of intervallic arrangements of three-note chords by fourths are possible; perfect-perfect, perfect augmented and augmented perfect." In Deltadiatonics we provide a symbol and classification for each of them as well as their inversions.

Arnold Schoenberg in his book *Theory of Harmony* states; "I believe an exploration of quartal harmony, filling out the tertian system...ought to open up certain new prospects for the theorist.

**Deltadiatonics** trichord interval figuration is calculated from the root of the chord upward to the next tone, then from that tone to the upper tone. The tritones symbol **T**, replaces the augmented fourth (+4) and the diminished fifth (°5).

## Quartal Trichords in the Major Scale

<i>Perfect-Augmented</i>	<i>Perfect-Perfect</i>	<i>Perfect-Perfect</i>	<i>Augmented-Perfect</i>	<i>Perfect-Perfect</i>		
<b>C4T</b>	<b>D4</b>	<b>E 4</b>	<b>FT4</b>	<b>G4</b>	<b>A4</b>	<b>B4</b>
<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>
<b>4T</b>	<b>4</b>	<b>4</b>	<b>T4</b>	<b>4</b>	<b>4</b>	<b>4</b>

## Inversions of Quartal Trichord Qualities

<i>Perfect-Perfect</i>			<i>Perfect-Augmented</i>			<i>Augmented-Perfect</i>		
<b>D4</b>	<b>G42</b>	<b>C24</b>	<b>C4T</b>	<b>FT1</b>	<b>B14</b>	<b>FT4</b>	<b>B41</b>	<b>E1T</b>
<b>4</b>	<b>42</b>	<b>24</b>	<b>4T</b>	<b>T1</b>	<b>14</b>	<b>T4</b>	<b>41</b>	<b>1T</b>

## Evolutionary Triads and Chords of the Seventh

The Deltadiatonic Method embraces change. Below are additional triads found in today's music that have developed over time but lack proper classification and symbols. The outer intervals of all of the triads contain a **P5** (perfect fifth). The **42** and **24** triads are known as the **Suspension Triads**, an outcome of the inversion of the perfect-perfect quartal trichord. **Note:** The Arabic numeral "1" has several applications in Deltadiatonics. It can be part of traditional chord figuration with "1" being the root note or it can indicate a minor second, if applied to Quartal Trichords Inversions. If found under an upright or inverted triangle it would indicate a first inversion of the chord.

### Twenty- First Century Triads

<i>Suspension Triads</i>					
$C\Delta$	$C42$	$C24$	$C\nabla$	$C1T$	$CT1$
5 3 1	2 4 1	4 2 1	5 b3 1	T 1 R	1 T R


### Twenty-First Century Chords of the Seventh

$\Delta$	$\Delta$ T	$\otimes$ o	$\nabla$	7 T	7 +
7 5 3 1	7 #4 3 1	7 b5 b3 1	b7 5 b3 1	b7 b5 3 1	b7 #5 3 1
<i>C Major Seventh</i>	<i>C Tritone Major Seventh</i>	<i>C Diminished Minor-Major Seventh</i>	<i>C Minor Seventh</i>	<i>C Tritone Dominant Seventh</i>	<i>C Augmented Dominant Seventh</i>

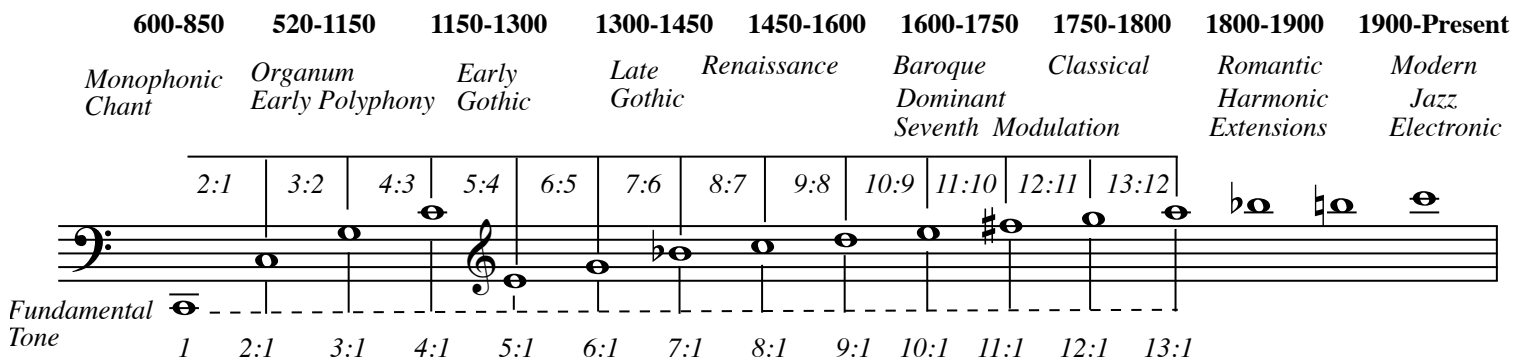



# The Harmonic Series

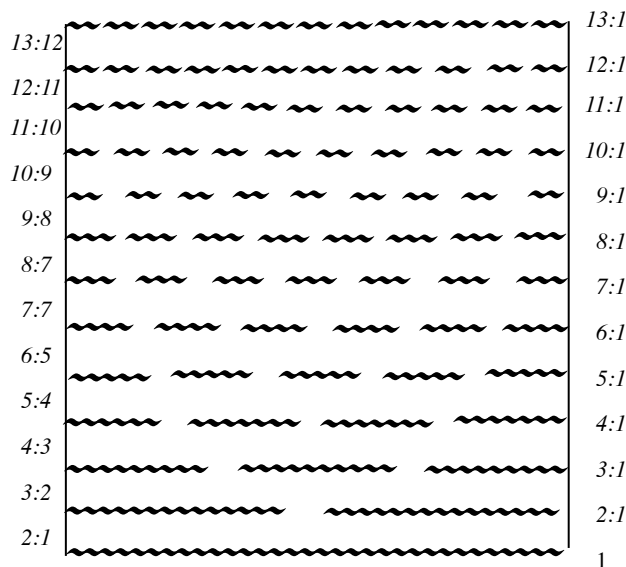
The closely stacked thirds of triads and chords of the seventh serve us well for the study of harmony, however they have a limited use in the creating of part writing and composition. They must be freed from this closeness of stacked thirds and spread out into a new order, one which uses the same notes in different arrangements. The process of spacing chords is a technique called **Chord Voicing** and begins simply with inversions of the triad.

In order to truly understand chord voicing we have to ask ourselves this question; Why does a particular chord arrangement sound better than another? The answer lies in the science of sound, for the orderliness of a common triad relates to one of the basic laws of acoustics,  vibrations.

When a note is played on the piano its string, which has been tightened to produce a certain frequency, vibrates for the whole of its length. Simultaneously, it vibrates in sections of a half, a third, a quarter, a fifth and so on. Each of these sections produce a faint note of its own according to its frequency. These faint notes are called **Harmonic Overtones** or **Partials**. The example below shows all the tones that are actually vibrating, however the higher harmonics are inaudible. The time line of Western music can be seen in parallel to the overtone series.



As the fundamental tone "C" is struck on the piano; the string begins to vibrate. This creates proportional vibrations  in whole number ratios that reside in the same space. This phenomenon produces what is known as the **Harmonic Series**.



The intervals of the harmonic series begin with an octave and end with a minor second. The first four tones vibrate the perfect octave, fifth and fourth. The remaining twelve tones employ major and minor thirds and seconds. The first triad to appear is the second inversion of a major triad ( $\frac{6}{4}$ ) to which I have assigned the name **The Alpha Chord**. (The first voicing in Bach's Prelude I of the "Well-Tempered Clavier") This essential inversion will resonate in many of the **Upper Structure Voicings** used by today's composers and improvisors.

*Triads*

*Chords of the Seventh*

			H												
				I											
					J										
						K									

### The Four Foundational Triad Qualities as they appear in the Harmonic Series

Upper Structure Alpha Chord      Super Tonic

$C\Delta_2$       C       $E^\circ$        $G\nabla$        $B^\flat_+$       C      D

A      B      C      D      E      F      G

## Chords of the Seventh as they appear in the Harmonic Series

The first chord of the seventh to appear is the dominant **V** chord (**C7**) from the sub-dominant key of **F** (found a perfect fifth below the fundamental tone **C**) (tones 4 -7) The next chord is the **VII** chord (**E $\emptyset$** ) also found in the key of **F** the half-diminished seventh. (tones 5-9). Next is the **I** chord, (found a perfect fifth above the fundamental tone **C**) found both in the **G** harmonic and melodic minor, (**G $\times$** ) the minor-major seventh. (tones 6-11) and lastly the **III** chord from those keys (**B $\Delta$** ) the augmented-major seventh. (tones 7-13).

Diagram illustrating the chords of the seventh in the harmonic series of C, showing the notes H (C), L (E), M (G), and N (B) and their corresponding chord symbols and Roman numeral analysis:

- C7** (Chord I): Notes C, E, G, B $\flat$ . Roman numeral analysis:  $\frac{\text{III}^\circ}{\text{I}}$
- E $\emptyset$**  (Chord II): Notes E, G, B $\flat$ , D. Roman numeral analysis:  $\frac{\text{bIII}^\circ}{\text{I}^\circ}$
- G $\times$**  (Chord III): Notes G, B $\flat$ , D, F $\sharp$ . Roman numeral analysis:  $\frac{\text{bIII}^+}{\text{I}^\nabla}$
- B $\Delta$**  (Chord IV): Notes B $\flat$ , D, F $\sharp$ , G. Roman numeral analysis:  $\frac{\text{III}}{\text{I}^+}$

The Roman numeral analysis of the chords of the seventh uses overlapping triads with **I** being the bottom triad and **III** or **bIII**, being the top triad. A chords of the ninth consists of two triads, the top triad built upon the uppermost note of the lower triad (the 5th). Elevenths use triads built on **I** and **VII** (or **bVII**) and thirteenths use a chord of the seventh on the bottom with a triad built on the **Supertonic**, ninth or **II**.

## Chords of the 9th, 11th & 13th



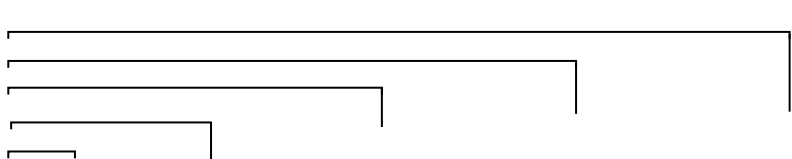




*The Altered Dominant  
as found in the Harmonic Series*

Diagram illustrating the chords of the 9th, 11th, and 13th in the harmonic series of C, showing the notes L (C), M (E), and N (B) and their corresponding chord symbols and Roman numeral analysis:

- C9** (Chord I): Notes C, E, G, B $\flat$ , D. Roman numeral analysis:  $\frac{\text{V}^\nabla}{\text{I}}$
- C9(#11)** (Chord II): Notes C, E, G, B $\flat$ , D, F $\sharp$ . Roman numeral analysis:  $\frac{\text{bVII}^+}{\text{I}}$
- C13(#11)** (Chord III): Notes C, E, G, B $\flat$ , D, F $\sharp$ , A. Roman numeral analysis:  $\frac{\text{II}}{\text{I}^7}$

# Introduction to Lower and Upper Structures

The last example below demonstrates the sequence of triads as found in the harmonic series. The end results produces a dominant quality (7) commonly known as a **C13(#11)**. If we view it as a compound structure we find a simple dominant seventh (**I7**) as the **Lower Structure (L)** and a major triad (**II**) (the supertonic,) as the **Upper Structure (U)**. When we *alter* tones in the series we find new sequences of triads with end results producing a major thirteenth with a sharp eleventh (altered dominant) and a minor thirteenth (natural 11th, unaltered dominant). Compare the complexity of the common practice jazz symbols (found in the ovals) to the **U/L** symbology of **Deltadiatonics**.

	C	E $\nabla$	G	B $\nabla$	D	$\frac{D}{C\Delta}$ Cma13(#11)														
	I	III $\nabla$	V	VII $\nabla$	II	$\frac{U \quad II}{L \quad I\Delta}$ <table border="0" style="margin-left: 20px;"> <tr><td>13</td><td>5</td></tr> <tr><td>#11</td><td>3</td></tr> <tr><td>9</td><td>1</td></tr> <tr><td>7</td><td></td></tr> <tr><td>5</td><td></td></tr> <tr><td>3</td><td></td></tr> <tr><td>1</td><td></td></tr> </table>	13	5	#11	3	9	1	7		5		3		1	
13	5																			
#11	3																			
9	1																			
7																				
5																				
3																				
1																				
<i>Thirteenth</i> <i>Eleventh</i> <i>Ninth</i> <i>Seventh</i> <i>Triad</i>																				
	C $\nabla$	E	G $\nabla$	B $\flat$	D $\nabla$	$\frac{D\nabla}{C\nabla}$ Cmi13														
	I $\nabla$	$\flat$ III	V $\nabla$	$\flat$ VII	II $\nabla$	$\frac{U \quad II\nabla}{L \quad I\nabla}$ <table border="0" style="margin-left: 20px;"> <tr><td>13</td><td>5</td></tr> <tr><td>11</td><td><math>\flat</math>3</td></tr> <tr><td>9</td><td>1</td></tr> <tr><td><math>\flat</math>7</td><td></td></tr> <tr><td>5</td><td></td></tr> <tr><td><math>\flat</math>3</td><td></td></tr> <tr><td>1</td><td></td></tr> </table>	13	5	11	$\flat$ 3	9	1	$\flat$ 7		5		$\flat$ 3		1	
13	5																			
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	C	E $^{\circ}$	G $\nabla$	B $^{\flat}+$	D	$\frac{D}{C7}$ C13(#11)														
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13	5																			
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9	1																			
$\flat$ 7																				
5																				
3																				
1																				

# Triads and Quartal Trichord Voicings

Now we will begin to combine triads and quartal trichords in a manner that mirrors the harmonic series. The **L** (lower structure) will be made of the *perfect-perfect* or a **4** quality chord. The **U** (upper structure) will contain triads as Alpha Chords or root and first inversions. These voicings can be used for major or minor settings depending upon the underlying fundamental tone chosen. For example if we sustain a low "C" (**I**) (use the sostenuto pedal, the middle pedal, on the piano) and play the voicings over it we create major quality voicings. If we choose an "A" (**VI**) or "D" (**II**) we create minor voicings. This phenomenon is due to the make up of all major and minor chords of the seventh being comprised of **P5** (perfect fifths) containing no tritones. An additional phenomenon is that we can create a dominant affect (without a tritone present) by sustaining a "G" (**V**) in the bass and playing the voicings over it.

## Open Six-Part Voicings

Alpha Chords \*

	*		*		*		*		
	$C\Delta_2$	F	C	$C\Delta_2$	$F\Delta_1$	$G\Delta_1$	$F\Delta_2$	$G\Delta_2$	D4
U									
L									
	III4	II4	VI4	V4	VI4	VII4	II4	III4	I

## Close Six-Part Voicings

U									
L									
	VI42	V42	II42	I42	II42	III42	V42	VI42	I

## Understanding and Applying Upper Structures

Much analysis has been done in the jazz community in exploring upperstructures and polytonal chords. Pioneers include Carl Brandt, Clinton Roemer, John Novello, Randy Halberstadt, Jason Martineau and Mark Levine. In the classical world we owe much to Vincent Persichetti, Arnold Schoenberg and Dominic Alldis, to name a few. Of course analysis comes after the fact and we have heard and these voicings come to us from classical composers and pianists, including but not limited to, Chopin, Debussy, Ravel, Milhaud and jazz pianists; Bill Evans, Chick Corea, Herbbie Hancock Dave Brubeck and Keith Jarrett. Many texts are now coming out of the **Berklee Press** with various methods to describe and apply upper and lower structures. However to date there is no system that communicates the symbology needed to truly understand and simplify these complex harmonies for the average student and composer. I believe, and I think you will agree, given the examples below that Deltadiatonics offers a consolidated system incorporating many of the past efforts into a useable theory which could benefit a majority of students.

### Major Triads-Roman Numeral Function Over a Pedal Tone

I	$\flat$ II	II	$\flat$ III	III	IV	$\sharp$ IV	$\flat$ V	V	$\flat$ VI	VI	$\flat$ VII	VII

### Common Practice Slash Chord Symbols

C	$\mathbb{D}^{\flat}/C$	D/C	$\mathbb{E}^{\flat}/C$	E/C	F/C	$\mathbb{F}^{\sharp}/C$	$\mathbb{G}^{\flat}/C$	G/C	$\mathbb{A}^{\flat}/C$	A/C	$\mathbb{B}^{\flat}/C$	B/C

Common practice upper-structure voicings generally avoid triads that contain the 4th or the major seventh. However our ears are constantly changing and today's tension or dissonance may become tomorrow's release or consonance. For example common practice does not recognize the **UVII** as an upper-structure, however it is already being assimilated into our repertoire as the example below will verify. The example at A reveals all the major and minor upper-structures with the addition of the **UVII** above the fundamental tone "C". Upper-structure function numbers along with Deltadiatonic chord symbology and altered figures are listed below the staves. Of importance is to notice the absence of the root of the C dominant in the lower-structure and the inversions of the triads in the upper-structures. The example at B demonstrates the movement (resolution) of the altered dominants to the tonic. The example at C demonstrates the **Alpha Chord** in parallel motion (constant structures) in a diminished sequence.

**A All Major & Minor Upper-Structures above the Fundamental Tone "C"**

	<b>UI</b>	<b>UII</b>	<b>U<sup>b</sup>III</b>	<b>U<sup>b</sup>V</b>	<b>U<sup>b</sup>VI</b>	<b>UVI</b>	<b>UVII</b>	<b>UI<sup>∇</sup></b>	<b>U<sup>b</sup>II<sup>∇</sup></b>	<b>U<sup>b</sup>III<sup>∇</sup></b>	<b>U<sup>#</sup>IV</b>
U											
	5 3 1	13 #11 9	#13 5 #9	b9 b7 b5	#9 8 #5	10 b9 6	#11 #9 7	5 b3 1	b13 b11 b9	#13 #11 #9	b9 13 #11
L				b7 3 R							

Notice the enharmonic notation (ex. #9 = Eb)

**B Altered Dominants Resolution to Tonic**

**C Alpha Chords in a Diminished Sequence**

	<b>D</b> <b>C7</b>	<b>A<sup>Δ</sup><sub>2</sub></b> <b>C7</b>	<b>A<sup>b</sup></b> <b>C7</b>	<b>G<sup>b</sup></b> <b>C7</b>	<b>A<sup>b</sup>Δ<sub>2</sub></b> <b>C7</b>	<b>G<sup>b</sup>Δ<sub>2</sub></b> <b>C7</b>	<b>F</b>	<b>A<sup>b</sup>Δ<sub>2</sub></b> <b>C7</b>	<b>BΔ<sub>2</sub></b> <b>C7</b>	<b>DΔ<sub>2</sub></b> <b>C7</b>	<b>C13</b>	<b>F</b> 
U												
	UII	UVI	U <sup>b</sup> VI	U <sup>b</sup> V	U <sup>b</sup> VI	U <sup>b</sup> V		U VI	UVII	UII		
L				ET 					ET 	B <sup>b</sup> T 		
				C7					C7	C7		

Note how the lower-structure dominant voicing may contain the root of the chord (**C7**) or may not (**ET**) with the 5th generally omitted. Listen to the difference of the voicings when we invert the lower-structure tritone **ET** to **B<sup>b</sup>T**.

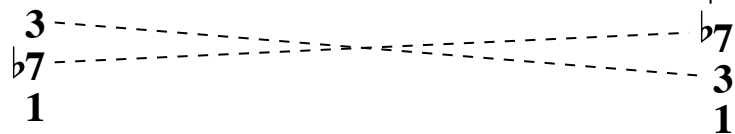
16 **Tritone Substitutions Effect on Upper-Structures**

The Tritone (T) occurs naturally in our major scale as an interval containing three major seconds or whole tones. It is the combination of the leading tone (VII) and the sub-dominant tone (IV) that creates what is traditionally known as an interval of an *augmented fourth* or when inverted an interval of a *diminished fifth*. In **Deltadiatonics** we simply use the letter **T** for either inversion eliminating much confusion.

It is essential to understand that this interval is part of the dominant or V chord containing the leading tone, as a third (3) and the sub-dominant tone, as minor seven or flat seven (b7). The phenomenon of the 3 and 7 is truly awesome. It dictates all qualities of major and minor seventh chords. As 3 and b7 it is shared by two keys found a tritone away from a keys dominant. When we substitute the root of the dominant, a tritone away from the original keys V chord the Arabic numbers become inverted and its Roman numeral function changes.

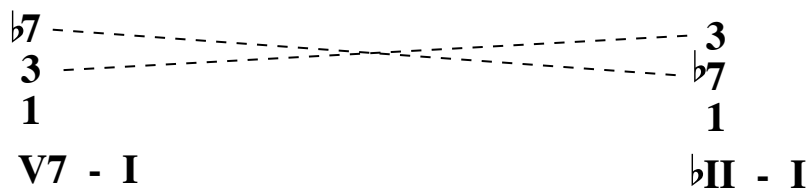
The diagram shows two musical staves. The top staff is labeled 'C Major Scale' and contains the notes C, D, E, F, G, A, B, C. A bracket labeled 'T (+4)' spans from G to C. Below the staff, three upward-pointing triangles labeled '▲2' indicate the intervals between G-A, A-B, and B-C. The bottom staff shows two chords: G7 (G, B, D, F) and C (C, E, G). A second bracket labeled 'T (+4)' spans from G7 to C. The right side of the diagram shows D<sup>b</sup>7 (D<sup>b</sup>, F, A<sup>b</sup>, C) and C (C, E, G).

The leading tone, the third of the dominant, resolves upward to the tonic. The sub-dominant tone, the flat seven of the dominant, resolves downward to the tonic's third.  
**(Outward Resloution of the Tritone)**



The diagram shows two musical staves. The top staff is labeled 'G Mixolydian mode' and contains the notes G, A, B, C, D, E, F, G. A bracket labeled 'T (o5)' spans from G to C. Below the staff, two downward-pointing triangles labeled '▼2' indicate the intervals between G-A and G-B, and two upward-pointing triangles labeled '▲2' indicate the intervals between B-C and C-D. The bottom staff shows two chords: G7 (G, B, D, F) and C (C, E, G). A second bracket labeled 'T (o5)' spans from G7 to C. The right side of the diagram shows D<sup>b</sup>7 (D<sup>b</sup>, F, A<sup>b</sup>, C) and C (C, E, G).

Notice the leading tone (3) still resolves up to the tonic while the sub-dominant tone (b7) moves down to the third of the tonic.  
**(Inward Resolution of the Tritone)**



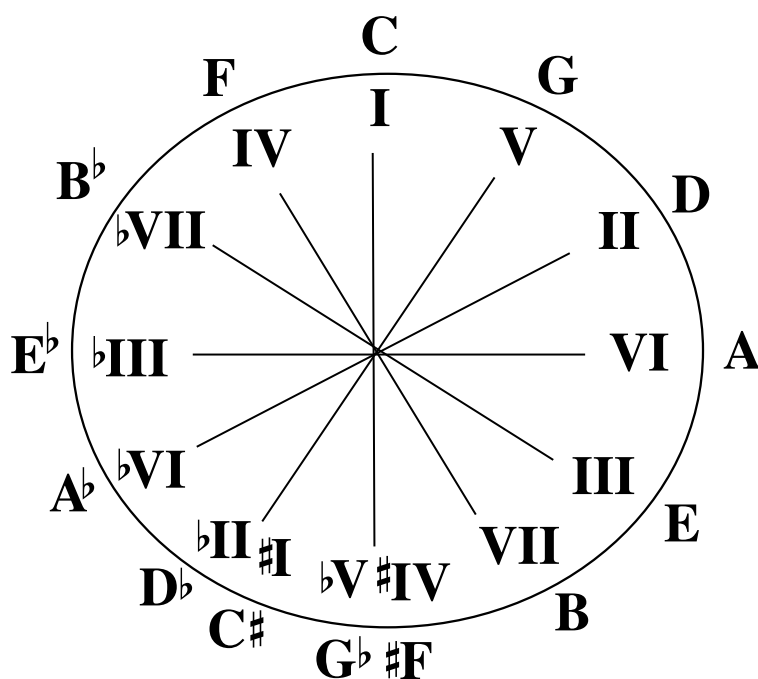


The examples below demonstrates what happens when we change the root of the upper-structure with a root a tritone away. Also notice that the triads are all **Alpha Chords**. In **Deltadiatonics** when we understand the principle of the voicing we eventually eliminate the inversion symbology (becomes understood) which further simplifies the symbol. When composing or creating a lead sheet this will makes the process very concise. Write in the remaining chord symbols and upper-structure function Roman numerals.

Eliminate Inversion Symbol (precise voicing symbol)  
(becomes understood)

$\frac{E}{CT}$   $\frac{E^{\Delta}}{A^{\flat}7}$   $\frac{E}{D7}$

U<sup>b</sup>VI U<sup>II</sup>



## The Effect of the Lower-Structure on an Alpha Chord

The lower-structure of a voicing can change an Alpha Chords quality significantly. When we use a perfect fourth as the lower-structure we hear diatonic modal voiced harmony. When we apply the tritone interval as the lower-structure we hear altered dominant qualities. When we apply the major third we also hear altered dominant qualities due to the tritones presence between the third of the lower-structure and the fifth of the upper-structure.

Ex. A demonstrates the use Deltadiatonics 43 voicing. (Mark Levine has symbolozied it nicely as **SW** the "So What" chord voicing as used by Bill Evans in the "Kind of Blue Recording". However this voicing can be traced back to the early 20th century French composers Ravel, Debussy, Satie and Faure. In Deltadiatonics the **43** voicing is constructed using three or four stacked perfect fourths with a major third on top.

**A**  $\frac{C}{A4 (A43)}$

**B**  $\frac{C}{G\#T (E7)} \quad \frac{C}{A\flat T (B\flat 7)}$

**C**  $\frac{C}{A7}$

# Voicing II-V-I Chords using Lower and Upper-Structures 19

These II-V-I voicings employ simple lower and upper-structures. Note the enharmonic difference of the Arabic numerals and the written notation. \* Symbols in ( ) indicate the precise voicings of the lower-structure.

**U<sup>VI</sup>**

**D43** **E** **C<sup>Δ</sup>69**  
 $\frac{E}{G7}$

2 5 1 11 13      1 b7 10 13 **(#9)**      1 3 6 9 5

**U<sup>II</sup>**

**F<sup>Δ</sup><sub>2</sub>** **A** **C<sup>Δ</sup>9**  
 $\frac{A}{G7(BT)}$

1 4 6 8 10      3 b7 9 #11 13      1 3 5 7 9

**U<sup>bV</sup>**

**G<sup>4</sup>** **D<sup>b</sup>** **C<sup>Δ</sup>**  
 $\frac{D^b}{G7(BT)}$

2 4 5 8 11      3 b7 b9 #11 #13      1 3 5 7 10

**U<sup>bIII</sup>**

**D<sup>V</sup>** **B<sup>b</sup>** **G<sup>24</sup>**  
 $\frac{C4}{G7(BT)}$

1 4 6 9 11      3 b7 #9 12 #13      1 3 5 6 9

20 Notice that the **II** and **I** chords have no alterations to the Arabic numerals. This is because they are found within the key (**diatonic**). The myriad mutations of the dominant are full of variety and color (**chromatic**).

**U<sup>b</sup>VI**       $\frac{C42}{D4}$        $\frac{E^b}{G7(BT)}$        $\frac{A24}{C}$

2 5 8 11 12      3  $b7$   $\#9$   $b13$  1      1 3 6 7 10

**U<sup>#</sup>IV**       $\frac{C}{D^b}$        $\frac{C^{\#}\nabla}{G7(BT)}$        $\frac{G42}{C}$

2 4 5 8 10      3  $b7$   $b9$   $\#11$  13      1 3 5 8 9

**U<sup>b</sup>II**       $\frac{F}{G2}$        $\frac{A^b\nabla}{G7(F2)}$        $\frac{E4}{D}$

5 6 8 11 13       $b7$  1 3  $b13$   $b9$       2 3 6 9 5

**U<sup>b</sup>III**       $\frac{C42}{D^b2}$        $\frac{B^b\nabla}{G7(B^o)}$        $\frac{C\Delta}{3}$

2 4 5 6 11 5      3 5  $b7$   $\#9$   $\#11$   $\#13$       7 1 3 5 8 10