

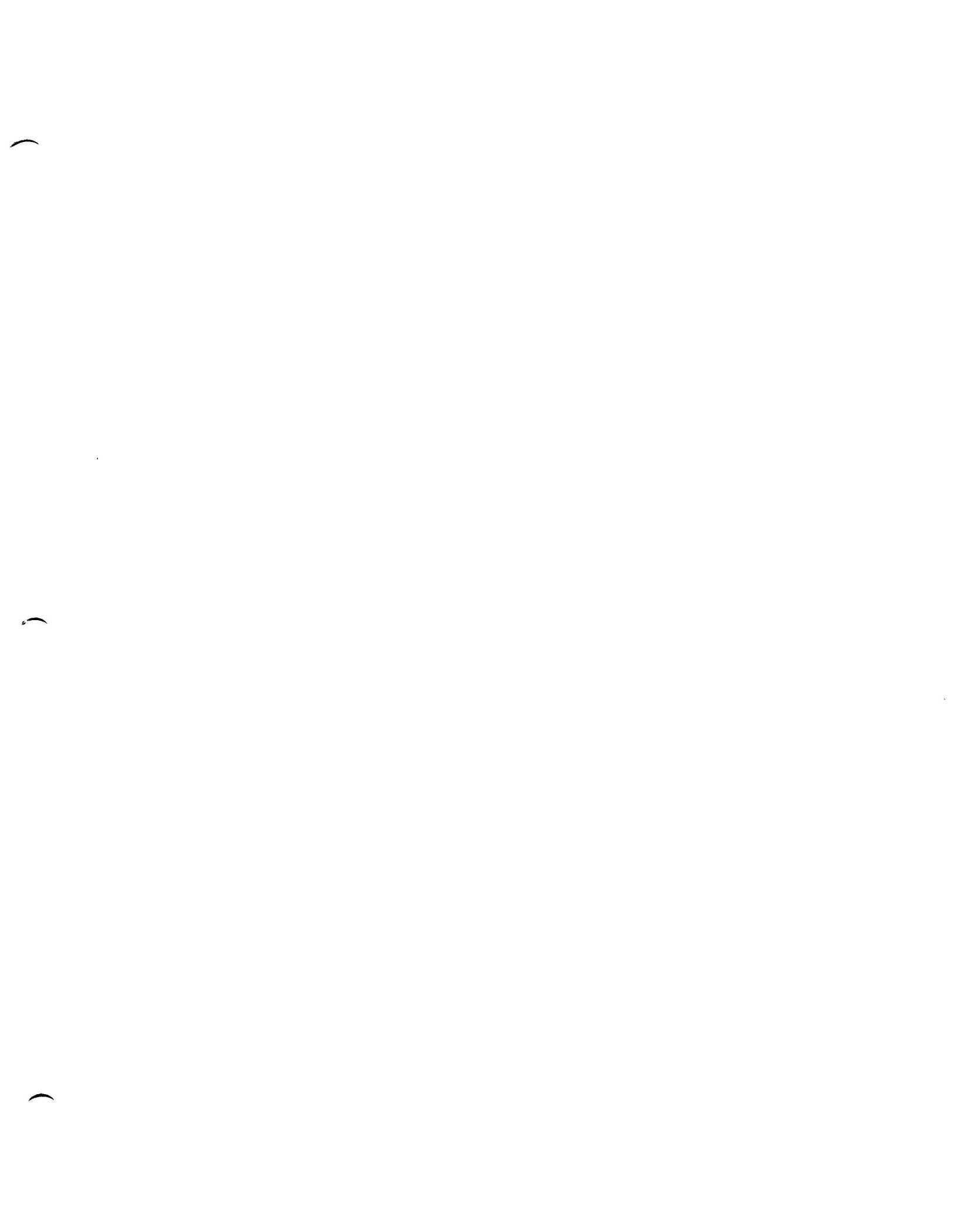
Martino

NEW FUNDAMENTALS



The Nature of Guitar

Pat Martino



Primaries

Often one goes for one thing and finds another. – Neem Karoli Baba.

Insight doesn't always come from where we thought it would. If one's intentions are to master a craft it's extremely important to learn as much as possible about the instrument chosen to function within those activities prior to anything else. In this case the issue is a study of the guitar itself, before our study of the universal language of Music.

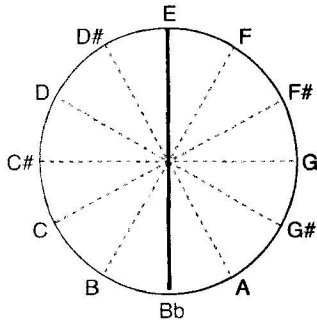
In doing so a number of issues came forward that psychologically created my research on similarities. For instance, if a musical instrument was going to be the vehicle, then what was already learned about other "vehicles" held important information. A valuable example in this is if one's musical instrument is the vehicle, so too is their automobile. One of the most important facets is how one has to learn to operate that automobile prior to using it for transportation. The same applies to a musical instrument. That's what "New Fundamentals" is all about. Those realizations obtained thru a familiarity that's present within multiple forms of application.

With countless types of musical instruments, each of them having a unique personality what's really interesting is not only what they share in common for one's choice of instrumentation, but the conditions that transcend those identities. For instance they're all subject, (within music as a craft) to terms such as major, or minor, ascent, or descent, entrance, or exit, etc., and those conditions prove to embody the presence of a larger element, ... polarity, (the opposites). When those conditions are viewed from a distance a third element enters, ... Objectivity.

Polarity itself is one of the outstanding elements of the piano keyboard, the keys themselves are a set of opposites, (black, and white). The keyboard is unique to that instrument alone, as well as some of its offshoots, (synthesizer, harpsichord, accordion, etc). As foreign as a piano keyboard is to a reed player's mouthpiece, so too is any type of information that's emerged from it as a mechanism, when applied to any instrument other than itself. There are also obvious differences that prove valuable through comparison. For instance, the difference between a flugelhorn, and a piano is not only based upon their ranges, but also how one is linear, while the other is both harmonic, and linear as well. When we compare the guitar with the piano we find both of them to be linear, as well as harmonic, and although their ranges remain different, with slight moderations what's communicated with one can be generally interpreted through the other, (to some degree).

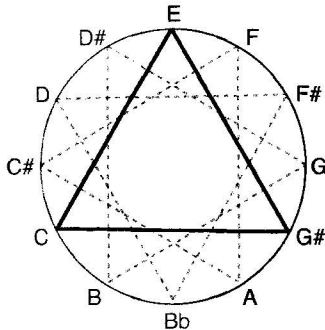
because the tuning of the six string guitar begins, and ends from that tone, also since in the key of E we normally see A#, the use of Bb, (at 6 o'clock) has been chosen to represent its "opposite", a flat, instead of a sharp

The Straight Line



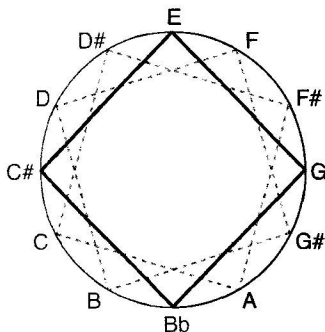
Aside from the interval itself, the tritone also symbolizes duality. It divides the circle in half. It's two points, (beginning, and end) are also referred to as "Yin & Yang", (the opposites) or also viewed as an example of night, and day, man, and woman, good, and bad, or any other form of duality. It represents the flatted fifth.

The Triangle



The augmented, (or ma 3rd) interval can not only be viewed in the circle as an equilateral triangle, but also on the guitar as a one of its two "parental forms" giving birth to dual components, the major, or relative minor triads. It can also represent other profound symbolic forms such as the trinity, as well as the basic symmetries of a pyramid.

The Diamond



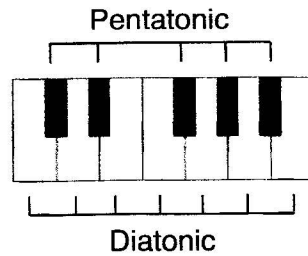
The diminished, (or mi 3rd) interval appears in a circle as the diamond. Equilaterally dividing at its north, east, south, and west points. As the second of the guitars "parental forms", (using opposite directions on single tones) it produces, V7th, as well as Mi 7th (b5) clusters. It can also from each minor 3rd departure point be viewed to represent 3 months in each separate set, collectively portraying "The Four Seasons", etc.

1

2

3

In most cases, the normal curriculum being used to instruct guitarists has come from pianistic formulas, (such as the use of scales, for building melodies, as well as chordal forms).

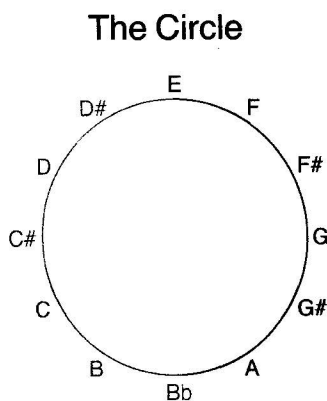


The white, and black keys in the following study represent the opposites as a vehicle, and as such they can also be seen similar to another set of opposites, in this case Addition, and Multiplication. The symbols that are used to represent these procedures rotate into opposite positions:



Addition, in the equation of $7 + 5$, (as 12 tones) can be viewed as the seven white keys, and five black keys. Remember, these conditions have nothing to do with what's completely automatic upon the guitar fingerboard, and when used for basic training in some ways may inhibit a guitarists perspectives. The following information is based solely upon what's automatic for the guitar, (Multiplication) and in many ways proves to be much more reliable.

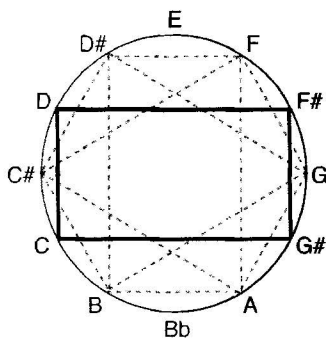
The 7 Primaries, (taken from "Sacred Geometry") within the chromatic phenomenon embody some of the most interesting figures to be found.



The circle, (which represents Pi) can be seen as that which represents all that is. All geometric forms that evolve out of prime numbers are contained within the circle. It can be viewed as a circle of numbers that represent 12 hours on the wristwatch, as well as 12 months of the year, or even as a chromatic structure, when properly divided introduces both consonance, as well as dissonance.

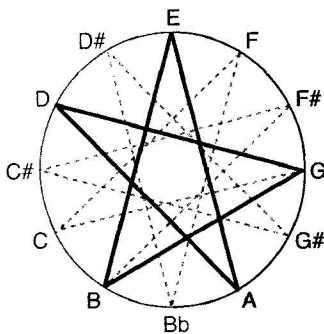
The circular chromatic scale seen above begins with E natural, (at 12 o'clock) if only

The Rectangle



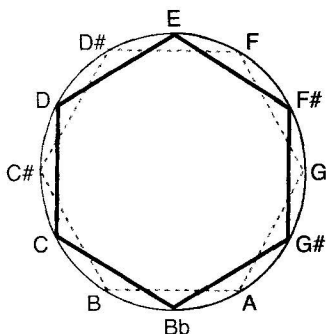
The rectangle, (or the V7 b5, similar to the tritone) can be seen as the second natural inversion of $\frac{1}{2}$ of 12. In music it reduces a total of 12 key centers into 6 opposing identities. In other words, G7b5 is the same as Db7b5, (C#7#11) the only difference is the second form is a perfectly upside down version of the first.

The Pentagon



The pentagram, (or straight line division of the circle into 5 points within the chromatic circle) becomes six destinations, immediately seen as the exact concert tuning of the 6 string guitar, based upon the pentatonic interval, (E, A, D, G, B, and E).

The Hexagon



The division of a circle into 6 points is an extremely effective method for the organization of linear inversions on the guitar, when applied through key transpositions. If viewed as a organizational device across the fingerboard, it divides it into all of its natural positions. The application of it can be viewed in Section VII, (on Linear Studies).

What's been introduced is the reason for my chosen title, "New Fundamentals".

In some ways, from this point of view it's a study of dualism, and ultimately a method

that objectively reviews the effect of opposites from a distance. In that way helping us to gain greater insight on a phenomenon that envelopes many forms.

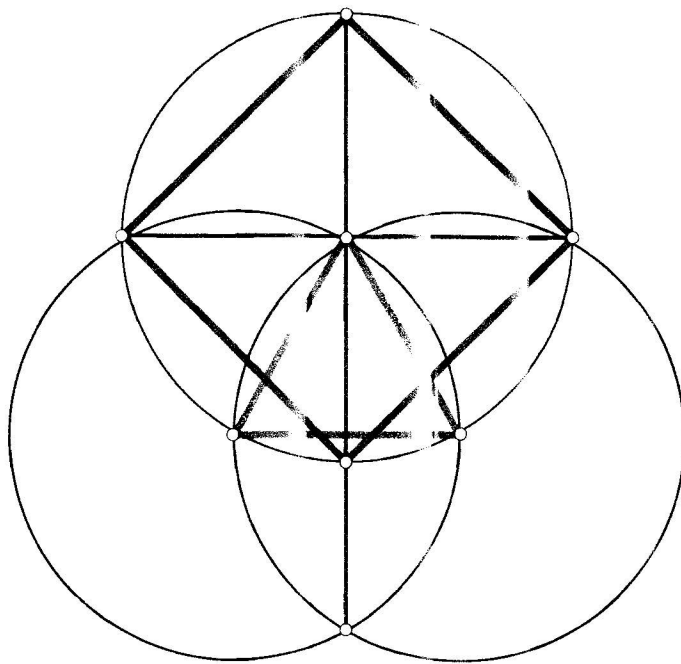
A handwritten signature in black ink, appearing to read "Pat Martino", with a long horizontal line extending to the right.

Pat Martino

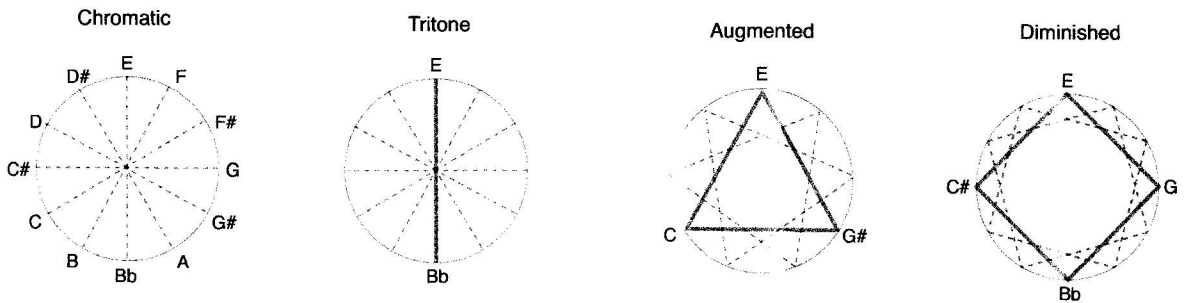
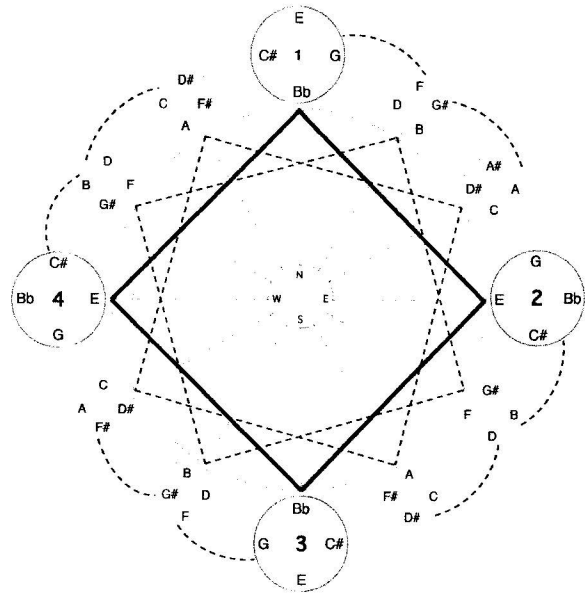
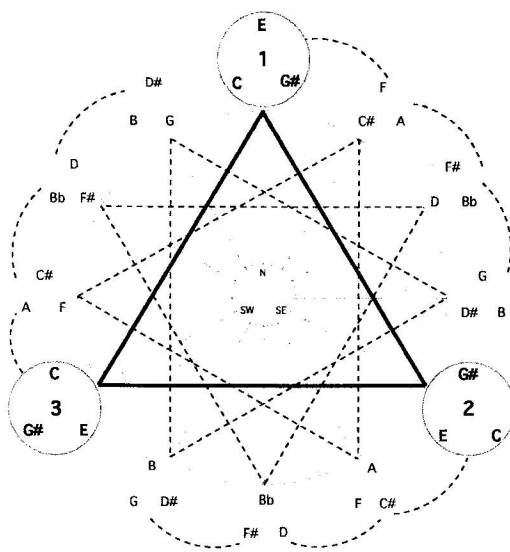
SECTION I

The Natural Construction
of
Chord Forms

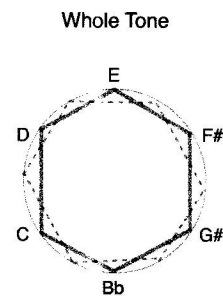
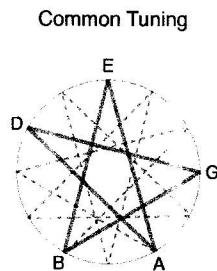
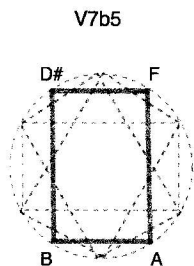
The Parental Forms



The Augmented as a triangle, and the Diminished as a diamond, (a repositioned square).



In sacred geometry there are seven figures in number, the initial four that are seen above are the main primaries on the guitar. The following three are also automatic, and appear as follows:

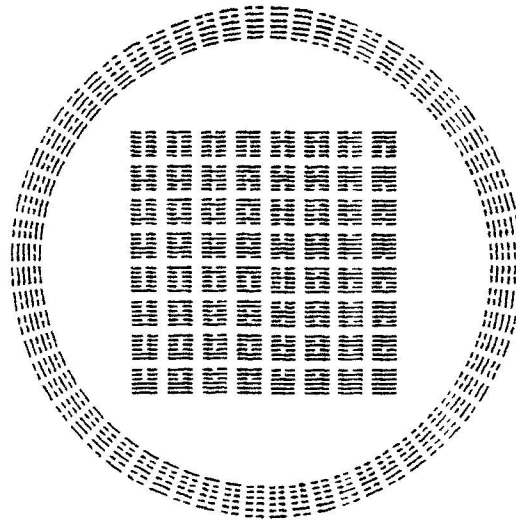


String Groups, and Their Source

Hexagrams

The strings of the guitar, and every combination of their use can be traced into the past, prior to its construction in the form of a musical instrument. An ancient form of philosophy from China, (*known as the "I Ching", or "The Book of Changes"*) incorporates 6 line structures known as "hexagrams", which are used to represent separate stages of meaning within consultation of the Oracle.

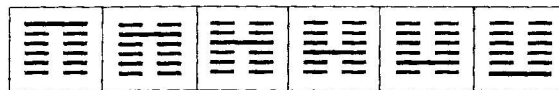
eg. 19a



Those forms are identical to each and every combination of the guitar's 6 strings, and can be instantly viewed as one of the tables found in this, the instruments manuel.

Example 19b clearly defines the six strings of the guitar separately from left to right, (the 6th to the 1st).

eg. 19b



The above can be seen with the "full line" representing a string in use, while a "divided line" is used to represent strings that are silent.

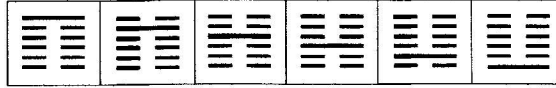
In the following diagrams the hexagrams that are dotted represent the most common string groups that are used in a normal repertoire.

eg, 20a

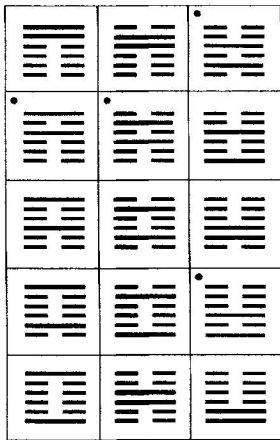
Hexagonal Combinations

(Viewed as Guitar String Groups)

1 String

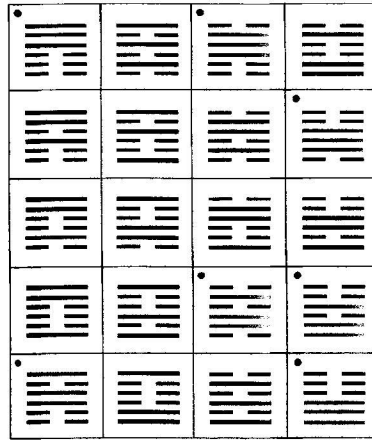


2 Strings



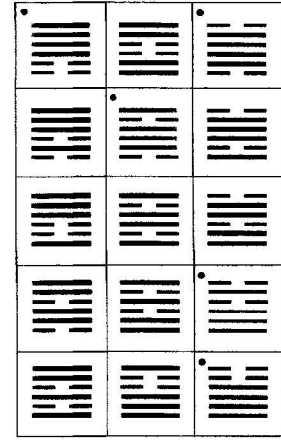
(these dotted hexagrams are the 2 string placement of "Octaves")

3 Strings



(these dotted hexagrams are the "7 Common Groups")

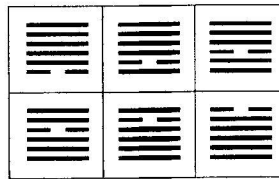
4 Strings



(these dotted hexagrams are the "5 Common Groups")

Take Note: the dots represent Adjacent, and Non-Adjacent String Groups.

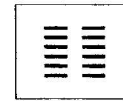
5 Strings



6 Strings



Silence



If these same combinations are viewed in a numerical series, set up in vertical columns, (instead of hexagrams) they will appear as follows in example 17b.

SECTION II

Transformation
of the
Parental Forms

eg. 22

Transformations of the Augmented Form to Major and Minor Triads

MAJOR (tones in descent)

654

A

G# C E Aug C Ma E Ma G# Ma

543

B

C E G# Aug E Ma G# Ma C Ma

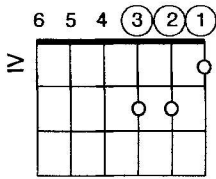
432

C

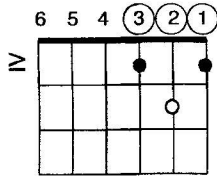
E G# C Aug G# Ma C Ma E Ma

321

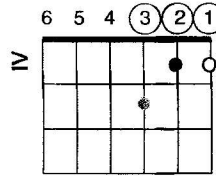
D



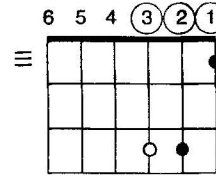
C E G# Aug



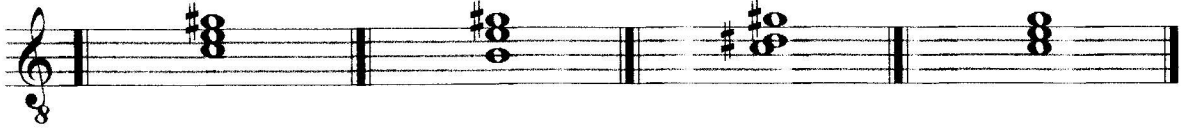
E Ma



G# Ma

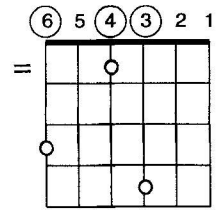


C Ma

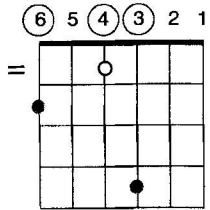


6-43

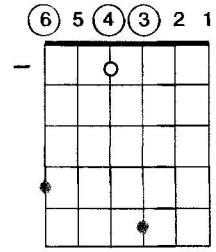
E



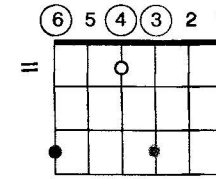
G# E C Aug



C Ma



G# Ma

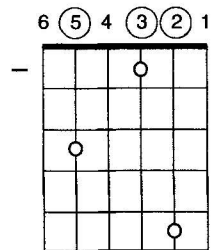


E Ma

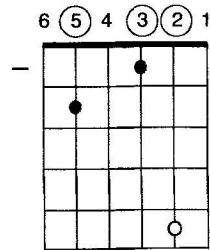


5-32

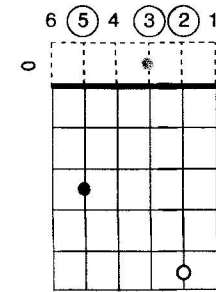
F



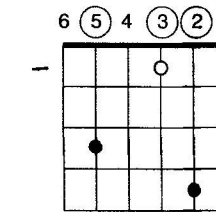
C G# E Aug



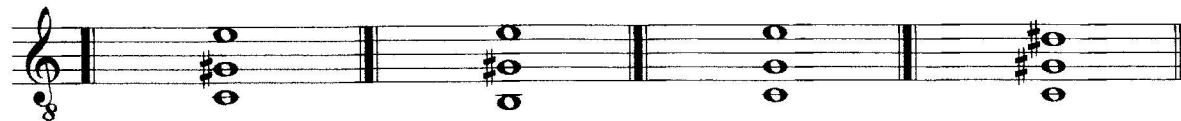
E Ma



C Ma



G# Ma



4-21

G

E C G# Aug G# Ma B Ma C Ma

MINOR (tones in ascent)

654

A

G# E C Aug A Mi C# Mi F Mi

543

B

C G# E Aug C# Mi F Mi A Mi

432

C

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

C G# E Aug F Mi A Mi C# Mi

321

D

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

C E G# Aug C# Mi F Mi A Mi

6-43

E

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

6 5 4 3 2 1

G# E C Aug A Mi F Mi C# Mi

5-32

F

C G# E Aug C# Mi A Mi F Mi

4-21

G

E C G# Aug F Mi C# Mi A Mi

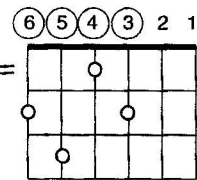
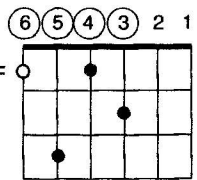
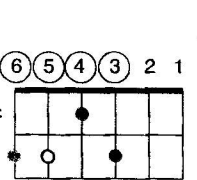
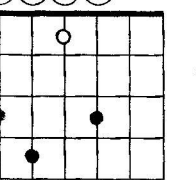
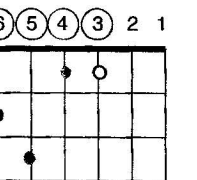
As witnessed, the movement of any single tone, (in ascent, or descent) produces a series of valuable major, and minor effects with the Augmented parental form. Likewise, when the same procedure is applied to the Diminished intervals a similar result takes place. In this case the series unfolds V7th, and Mi7b5 clusters. Take note that although there are in total 15 four string groups, (as opposed to the 20 of the augmented group) the next series is focused solely upon 5 common string groups. Also keep in mind that what's referred to as "common groups", or specific sets of strings, are solely based upon the natural adjacent and non-adjacent groups.

These particular string groups provide what's needed to create a practical library of chord forms, along with their alterations, and inversions.

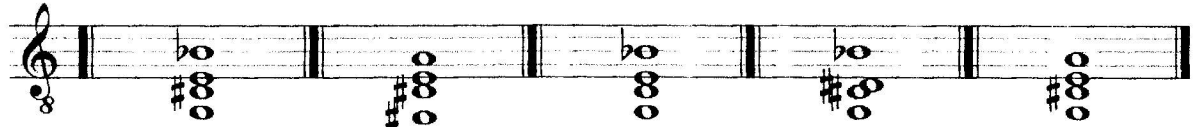
eg. 23

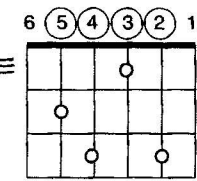
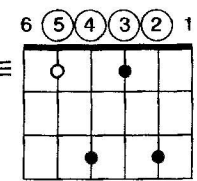
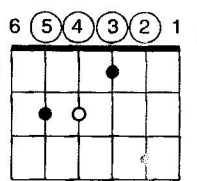
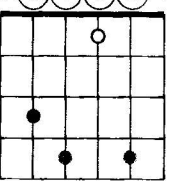
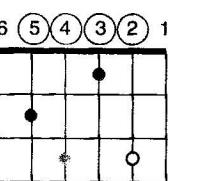
Transformations of the Diminished Form to V7th and Mi7b5 Clusters

V7th (tones in descent)

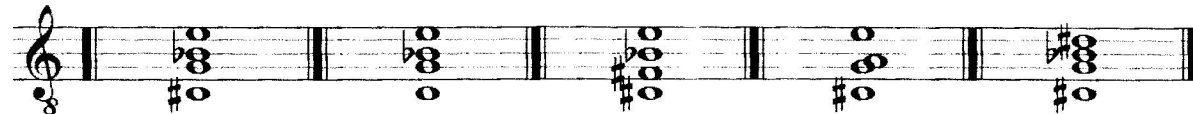
A 6543 =  =  =  -  = 

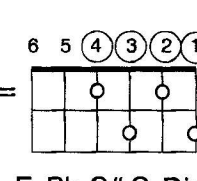
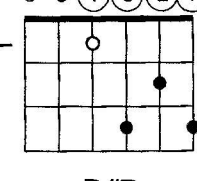
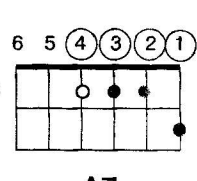
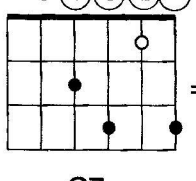
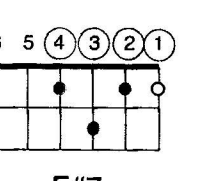
G C# E Bb Dim F#7 C7 D#7 A7



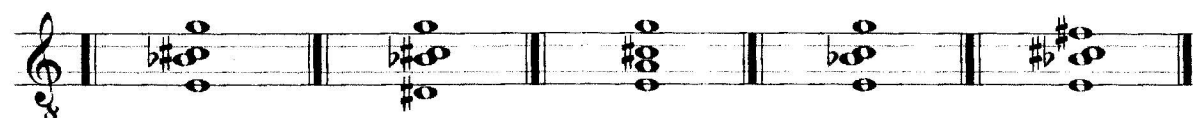
B 5432 =  =  =  =  = 

G C# E Bb Dim C7 F#7 A7 D#7



C 4321 =  -  =  -  = 

E Bb C# G Dim D#7 A7 C7 F#7



6-432

D

= = - = -

G E Bb C# Dim F#7 D#7 A7 C7

5-321

E

= = = = =

C# Bb E G Dim C7 A7 D#7 F#7

Mi7b5 (tones in ascent)

6543

A

= = = = =

E Bb C# G Dim Bbmi7b5 Emi7b5 Gmi7b5 C#mi7b5

5432

B

= = = = =

C# G Bb E Dim Emi7b5 Bbmi7b5 C#mi7b5 Gmi7b5

4321

C

E Bb C# G Dim Gmi7b5 C#mi7b5 Emi7b5 Bbmi7b5

6-432

D

G E Bb C# Dim Bbmi7b5 Gmi7b5 C#mi7b5 Gmi7b5

5-321

E

C# Bb E G Dim Emi7b5 C#mi7b5 Gmi7b5 Bbmi7b5

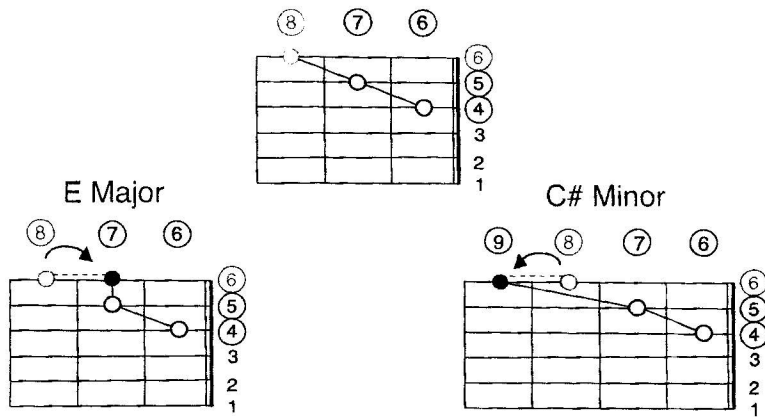
Finally, prior to an introduction for basic linear studies, it's important to add another consideration based upon the intervals of the guitars normal tuning: E, A, D, G, B, and E. The intervals between these tones are as follows. E to A, (perf 4th) A to D, (perf 4th) D to G, (perf 4th). It's here, (between G to B) that the interval changes to a ma 3rd, then continues with B to E once again as a perf 4th. So far, (throughout these studies) the movement of single tones, (either in descent, or ascent) has proved successfull as a formula. It holds true when it's applied in vertical manipulations as well. A demonstration unfolds in the following examples.

When we consider the nature of direction, (and its polarity) when applied to parental forms it reveals motion functioning in two separate states of effect. Its horizontal format causes a form to either contract, or expand. When applied to any of its separate notes it automatically transposes into separate keys. In example 24 it's listed as the tone C. When descended it becomes the Perfect 5th, (B) of an E Major triad. When ascended it becomes the Root, (C#) of E Major's relative minor, C# Minor.

eg. 24

Horizontal Motion

(C), E, or G# Augmented

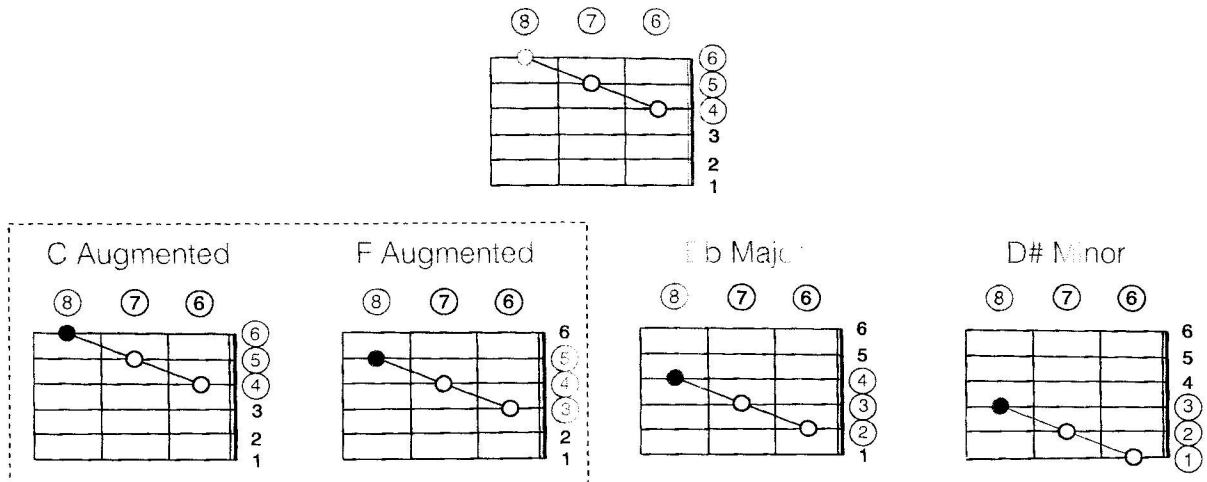


On the other hand, the effect of a vertical format causes the entire triad to descend from one three string set to the next. The same result takes place per group.

eg. 25

Vertical Motion

(C), E, or G# Augmented

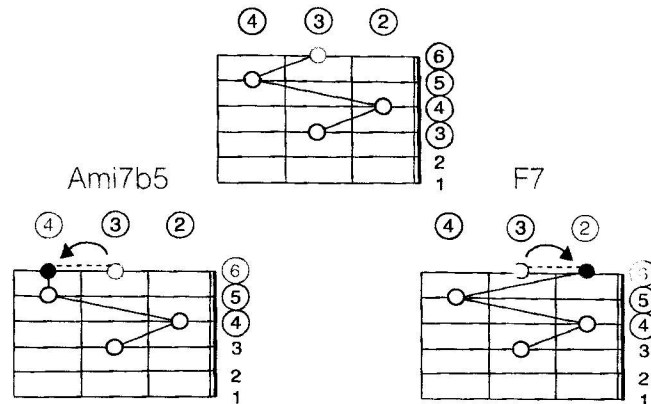


Using these same techniques with the diminished series produces similar structural results. As seen in the following examples the parental form produces altered 4 note clusters, as opposed to the triads that were viewed in the prior display

eg. 26

Horizontal Motion

F# , C#, E, or Bb Diminished

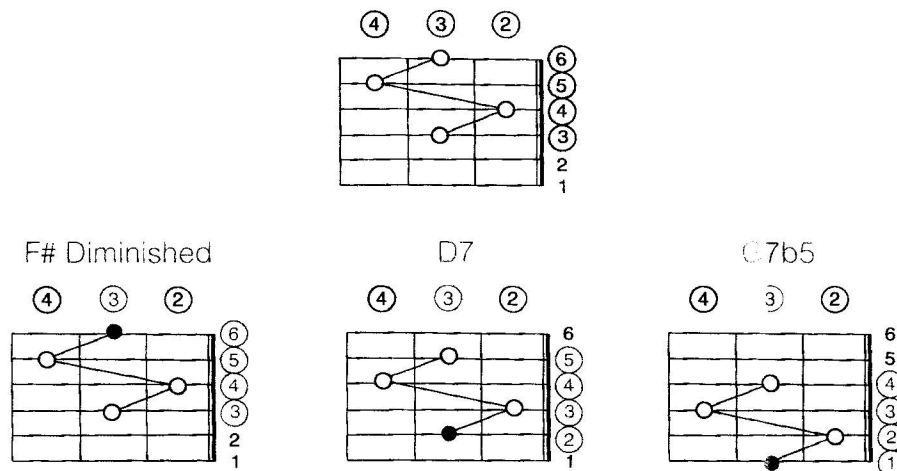


Example 27 reveals the parental diminished form, and its two altered variations, (from the same repetitive fingerings that are transferred to the next two adjacent string sets.

eg. 27

Vertical Motion

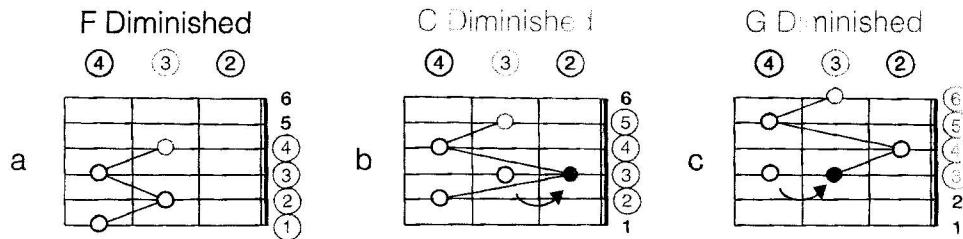
F# , C#, E, or Bb Diminished



The condition that's produced this upon the augmented, and diminished systems is also a side effect of the intervallic difference between the 3rd, (G) and 2nd, (B) strings (tonally as a major 3rd, unlike the others: E to A, A to D, D to G, and B to E, which are collectively based on Perfect 4ths).

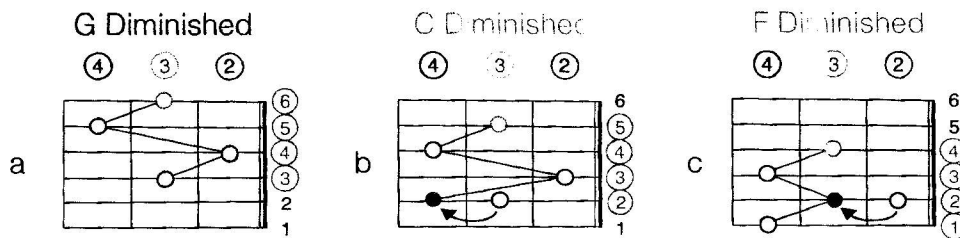
For example, the fingering of a four note chord on the 4321 string group can be shifted to a 5432 set of strings by vertically moving the inversion to that second position, then horizontally lowering whatever tone is on the 3rd string by one fret. It would appear as follows if done with a diminished chord:

eg. 28



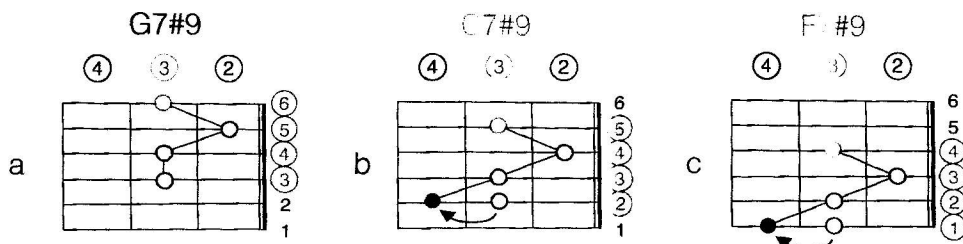
As seen in example 28, the initial inversion of an F diminished chord, (on the 4321 string set) when transferred upwards to the next adjacent group, (5432) it initially produces a Cmi7b5 form, but by lowering the Bb, (on the 3rd string) to an A natural it transforms into the next inner inversion of the original form, now automatically transposed into the key of C. When this is repeated in the same way, (this time from the inner set, 5432) the next transposition takes place automatically as well, (now into the key of G).

eg. 29



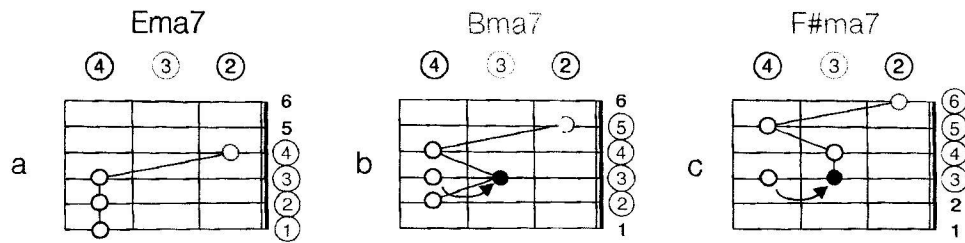
In this way it becomes possible to automatically create a full repertoire of inversions from any chordal form.

eg. 30



Once again, in example 31 the same effect takes place vertically on other forms that are used in this way. This time in the opposite direction, (from lower to higher sets) the Ma 7th

eg. 31

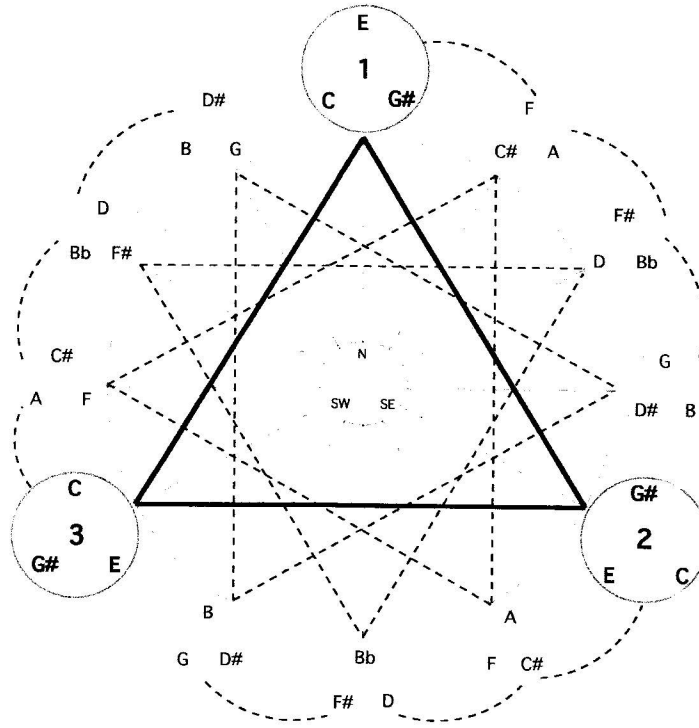


chord automatically inverts itself as the others have. The intervallic directions of these two transpositions continuously move upward in perfect 5ths, or downward in perfect 4ths.

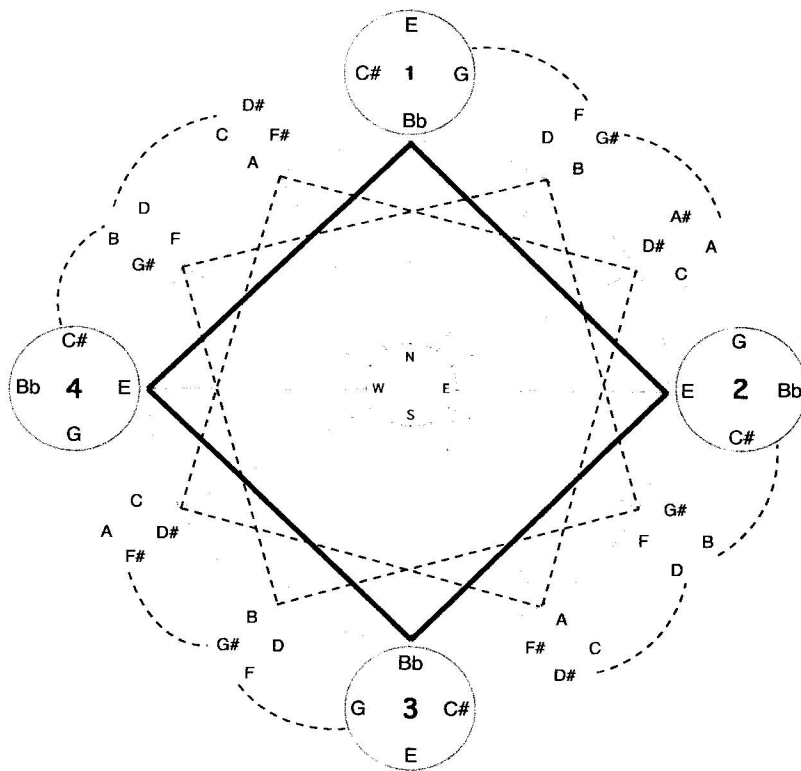
Remember, when moving upward to a higher set, any tone on the third string descends $\frac{1}{2}$ step. When moving downward to a lower set, any tone on the second string ascends $\frac{1}{2}$ step.

--

THE MA 3rd INTERVAL



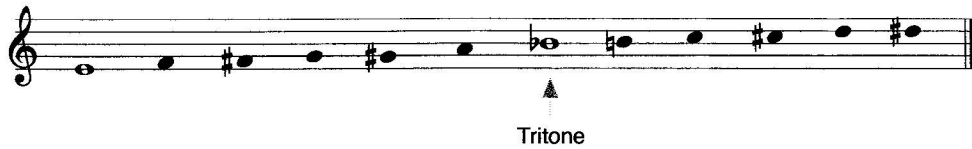
THE MI 3rd INTERVAL



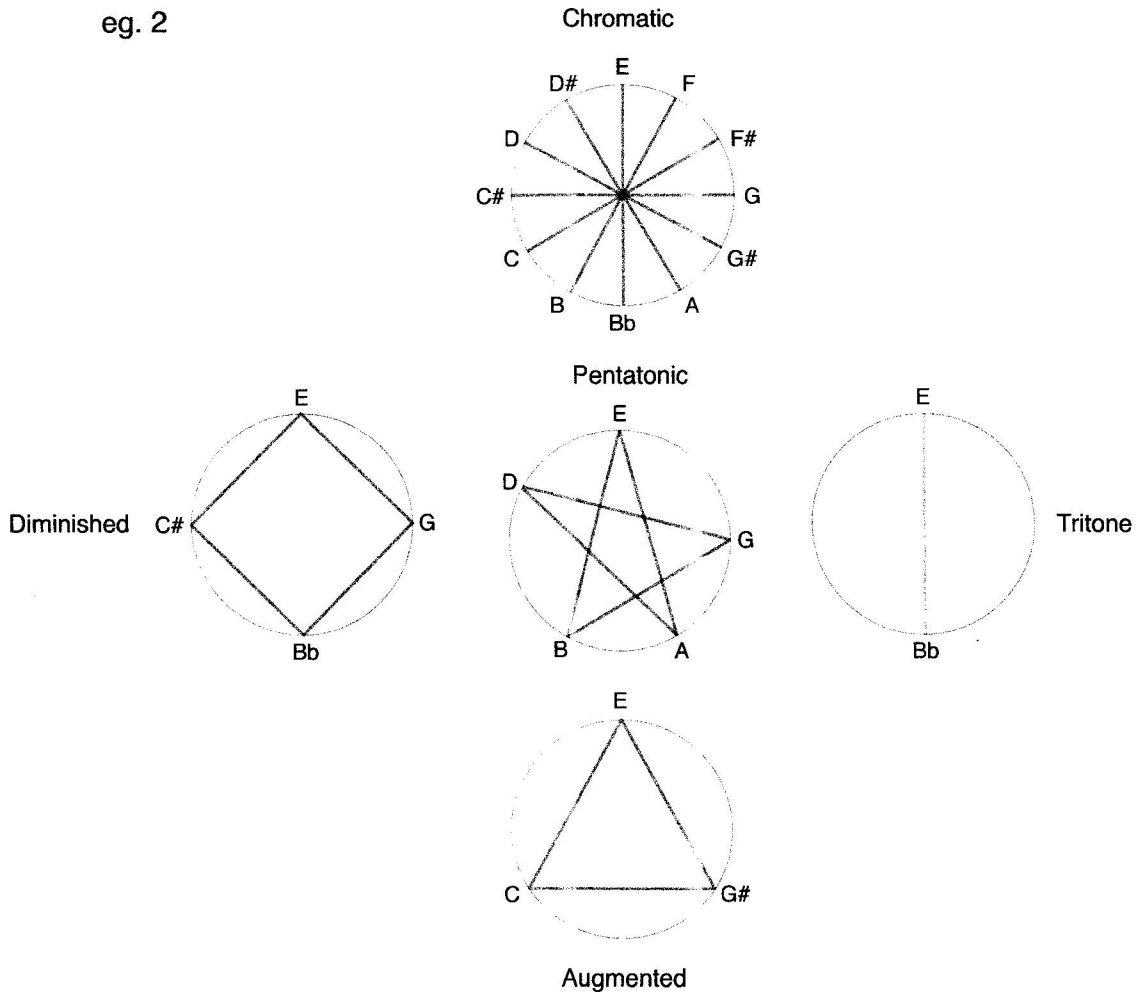
12 Tone Automation

If we begin with exactly how we visualize tonal intervals, (as guitarists) it's clear that we've been taught to see the arrangement of tones as an ascending, descending order of pitches upon a horizontal staff as follows:

eg. 1 Chromatic scale, (in ascent from E to D#)



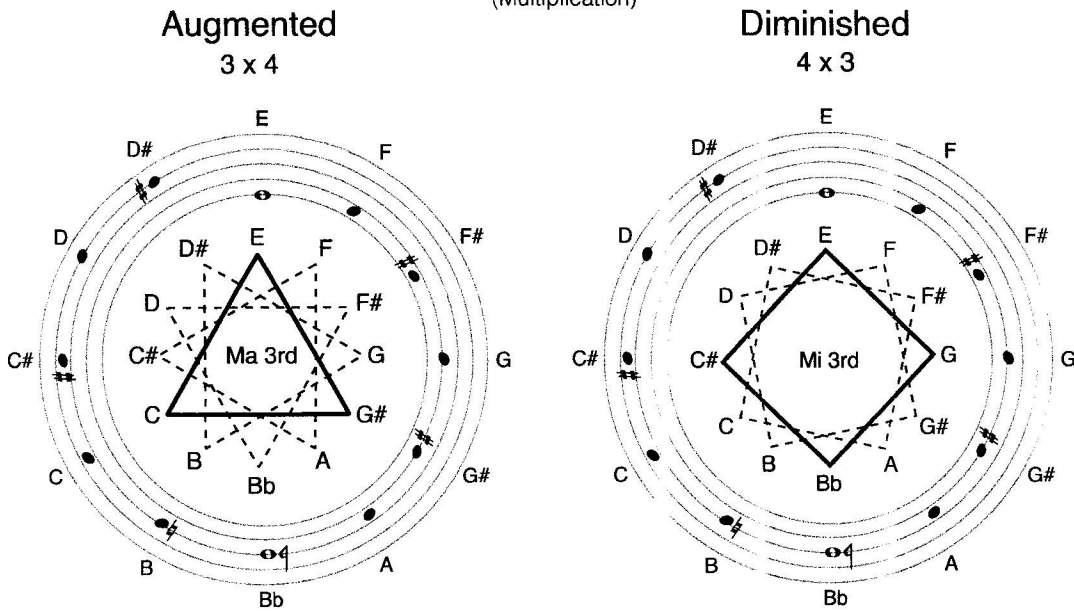
When arranged in a circular order, that same chromatic pattern begins to organize itself, (along with other intervallic variables) in different graphic arrays.



Eg. 3

Guitar

(Multiplication)



We can now begin to view the triangle, and the diamond as two innate divisions of the chromatic circle representing one of two separate instruments, (the guitar, and the piano).

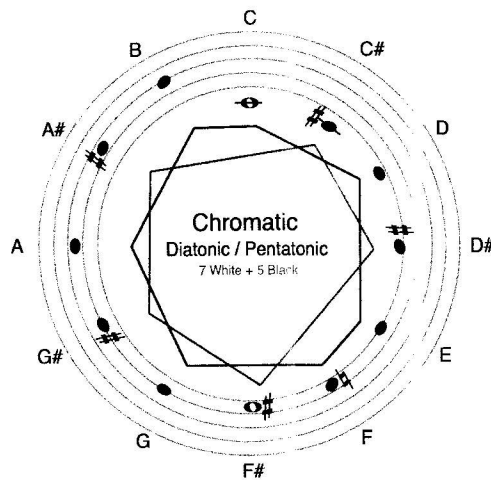
Let's now begin with example #4.

Eg. 4

Piano

(Addition)

7 + 5

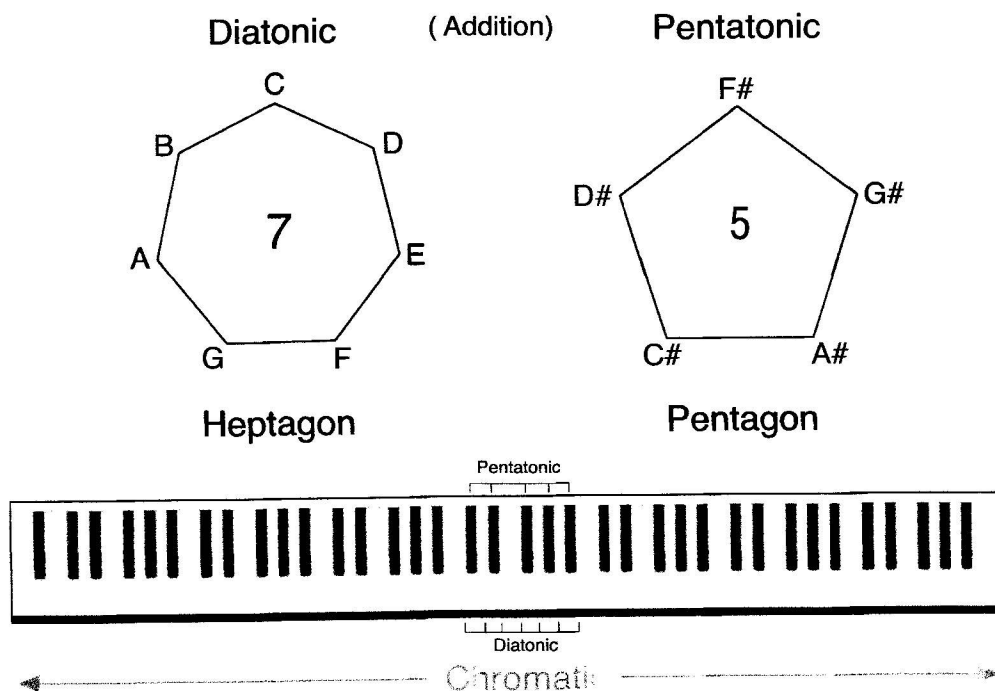


The Piano is a stringed percussion instrument. Its keyboard operates horizontally, and although it contains multiple keys, (hammers) only 12 of them are needed to display its automatic functions.

The keyboard itself is a white, and black structure. The first of these two forms, (the white keys, in ascent) from the tones C to B, (Diatonic) are 7 in number, while the second division of the system, (the black keys) moving in ascent from C# to A#, (Pentatonic) are 5 in number, after which repetition takes place. These elements indicate that the addition, of 7 + 5 results in a full chromatic scale. These keys also reveal 7 Modes, (Ionian, Dorian, etc.).

eg. 5

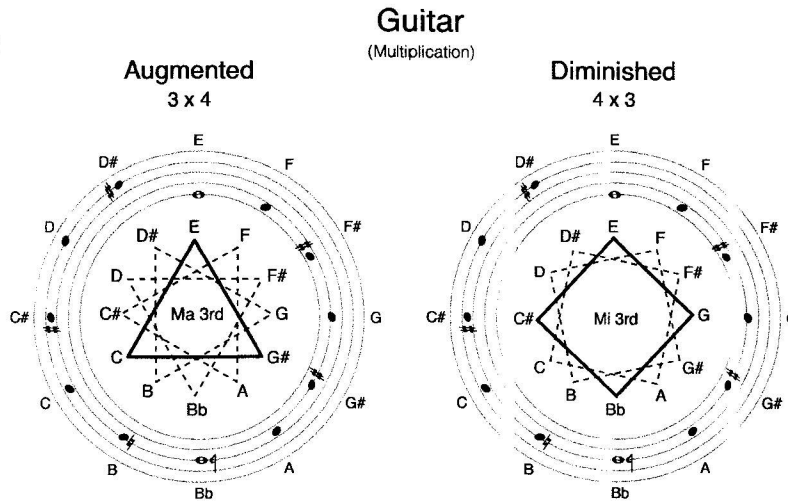
Piano



Take note that a curriculum generated from the piano alone often bypasses elements that are concealed within some of the other instruments, but in a social context remains valuable when used to educationally establish a general language that's shared as a prerequisite by the members of an interacting musical community.

Let's now consider the Guitar.

(eg. 3)

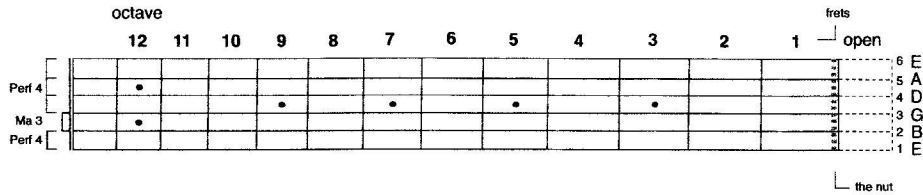


Similar to the piano the guitar is also a stringed instrument, although its automatic functions appear in quite a different way. Unlike the auto-functions of the piano, symbolized as a heptagon, and a pentagon, $(7 + 5 = 12)$ the auto-functions of the guitar symbolize themselves as a triangle, and a diamond, revealing an opposing system, (multiplication) 3×4 , or $4 \times 3 = 12$.

eg. 6a

Take Note:

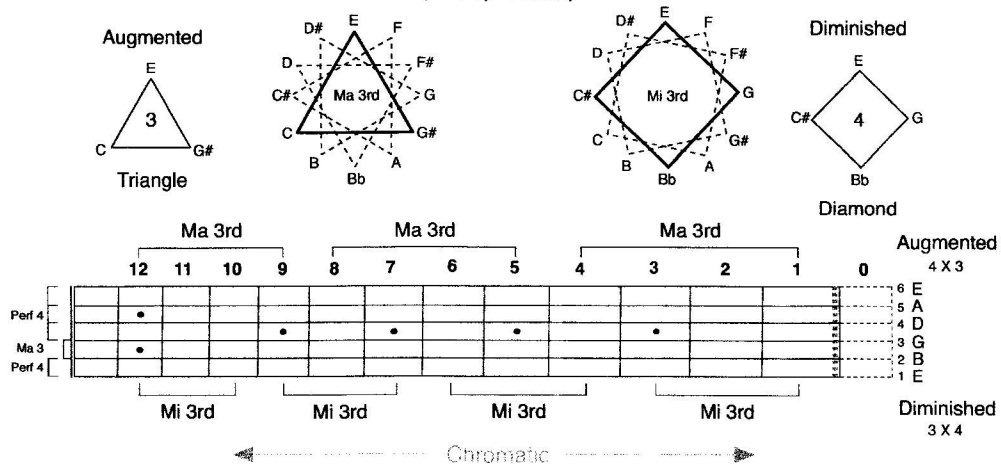
When looking at the guitar fingerboard in the following examples view it as if it's being held by a player that's facing you, similar to a demonstration by someone else.



eg. 6b

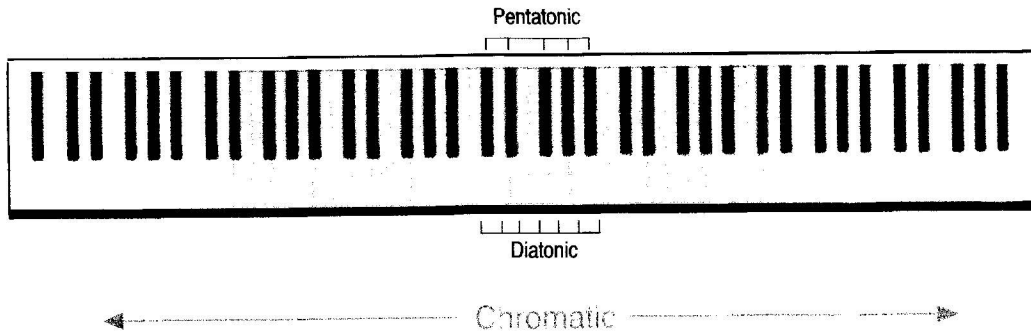
Guitar

(Multiplication)



eg. 6c

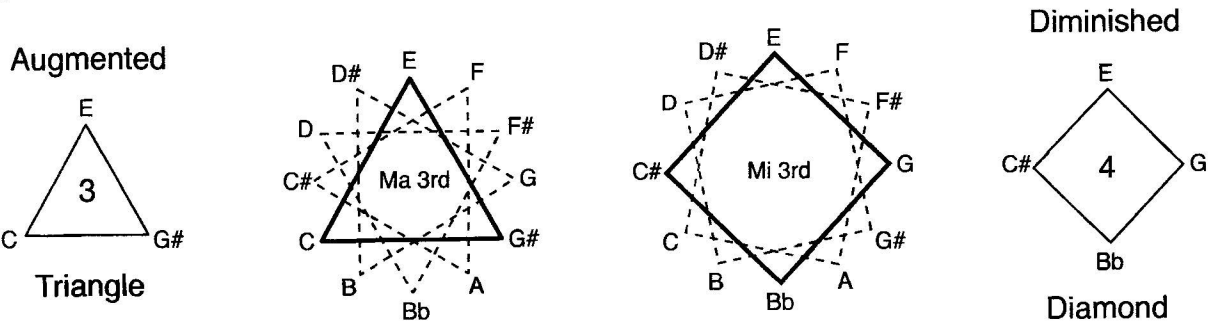
The general range of the Guitar (compared with the Piano)



Instead of addition, the guitar is more naturally managed thru the use of multiplication, and is not only viewed horizontally, but vertically as well. It's a matrix. Like the piano it will produce an open ended chromatic scale, (horizontally) on any one of its 6 strings, but this is where the intervallic similarity ends, and where a different metamorphosis begins.

One of the first things that should be noticed on the guitar is how there are only two chordal forms that horizontally repeat themselves automatically, without any change of fingerings. The first is a triad, (Augmented), and the second is a four note cluster, (Diminished). When something, (as a source) continuously, as well as automatically repeats itself without any change in its content it re-creates mirror images of itself, and in each of those images unveils specific secrets regarding the instrument itself. Furthermore, not only do these two forms mechanically repeat themselves across the guitar fingerboard but they also display themselves geometrically with a startling balance, and by doing so guarantee an ongoing theoretical legitimacy.

eg. 7

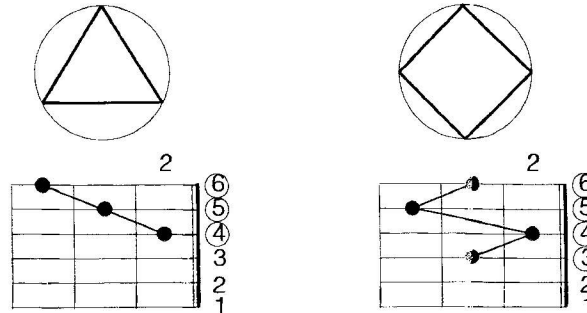


(What has been described also applies to the Electric Bass, (4 string) if tuned in the same context.

eg. 8a

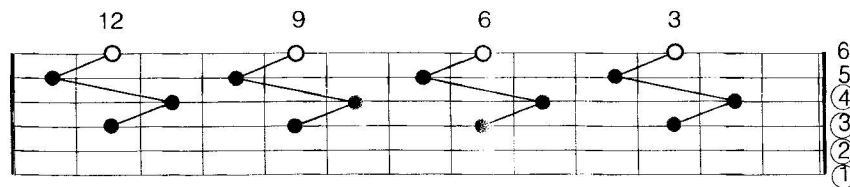
Augmented

Diminished



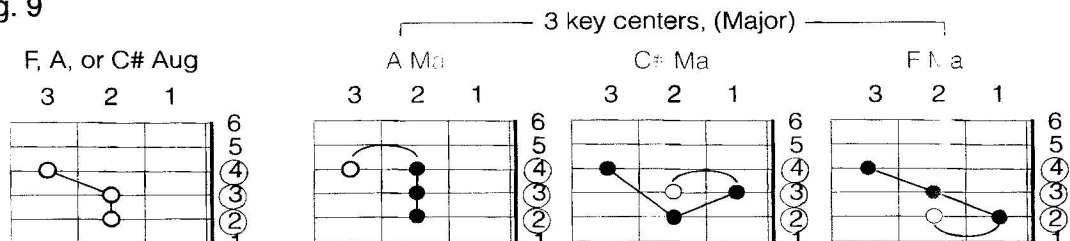
As it was stated, the two chord forms displayed above are unlike any others found on the guitar. What's unique about them, (when compared with other types of chord form) is how the fingerings for either of them never change as their horizontal inversions unfold across the fingerboard. Although in vertical formations, (depending on the string groups being used) there are variations. But once located on any specific group they invert horizontally from one end of the fingerboard to the other automatically. As seen in example 8b, as a diminished inversion on the 6th, 5th, 4th, and 3rd adjacent strings.

eg. 8b



In this special way what it causes is the automation of chordal inversions, (as well as their alterations). They can be defined as "Parental Forms", since as an alternative way to construct inversions from a scalar format they give birth to "siblings", (either Ma, and Mi triads, or V7th, and Mi7b5 (Ø) clusters). This process is the result of variations brought about by the ascent or descent, (at singular points) within those forms, as seen in example 9 as an augmented triad using the 4th, 3rd, and 2nd strings.

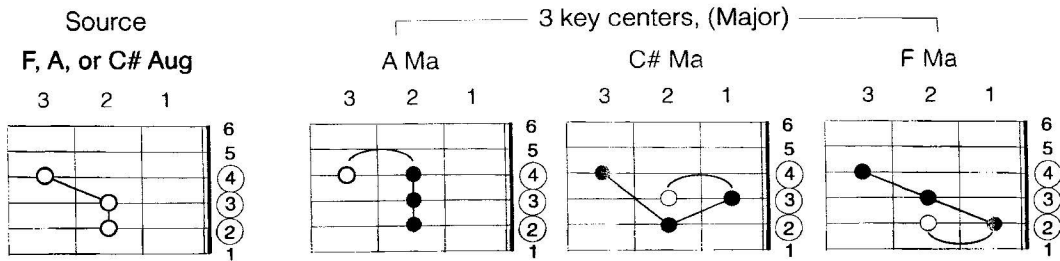
eg. 9



THE AUGMENTED TRANSFORMATIONS

into Major Triads

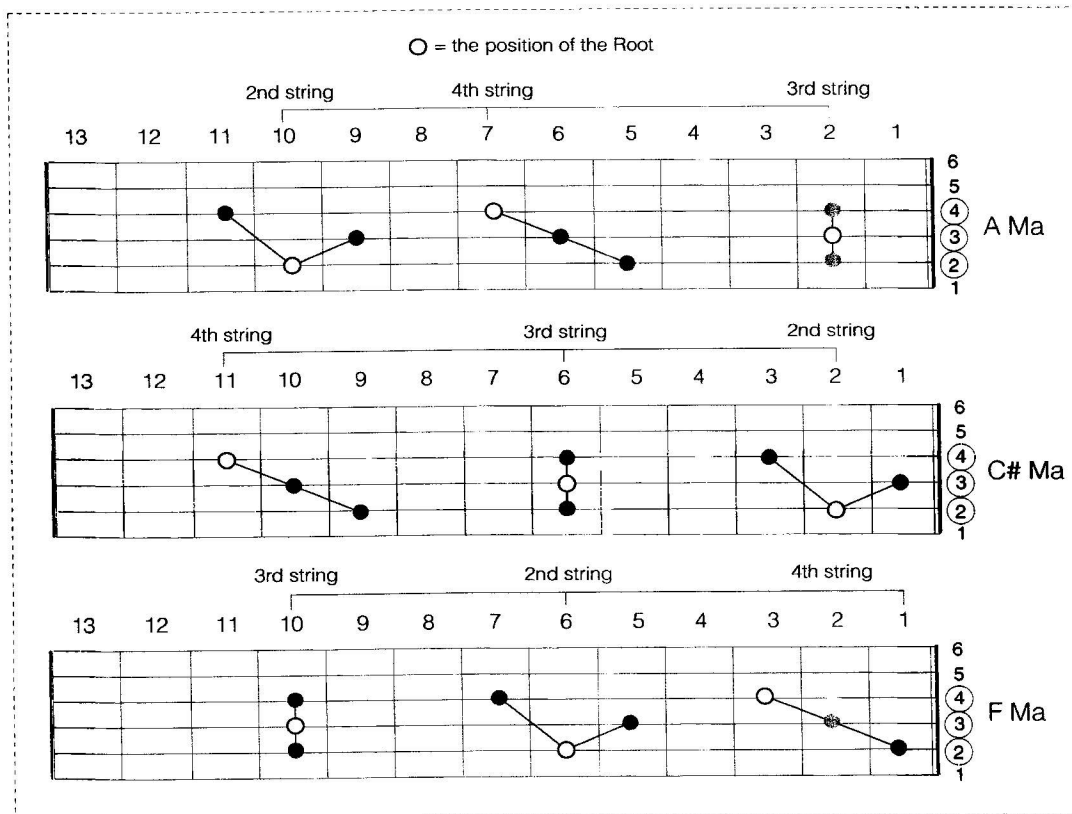
(eg. 9)



Automatic transformations take place on the guitar by either lowering, or raising any single tone in a "Parental" form, (Augmented, or Diminished). In the augmented, (through the process of lowering) its new position becomes the Perfect 5th of a Major triad, (one of three). In fact, the tones within the augmented triad as the source embody the key centers of those Major triads.

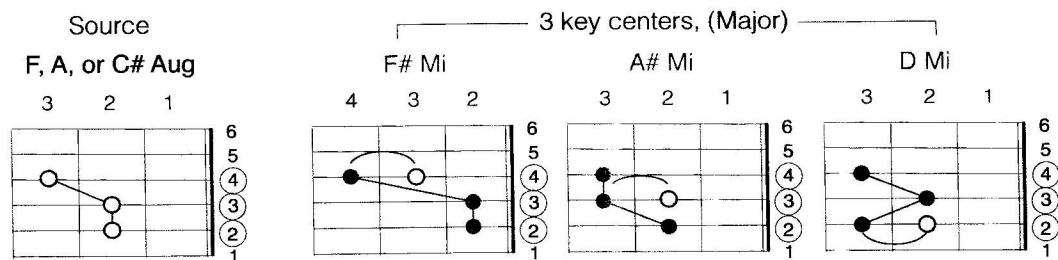
eg. 10

HORIZONTAL



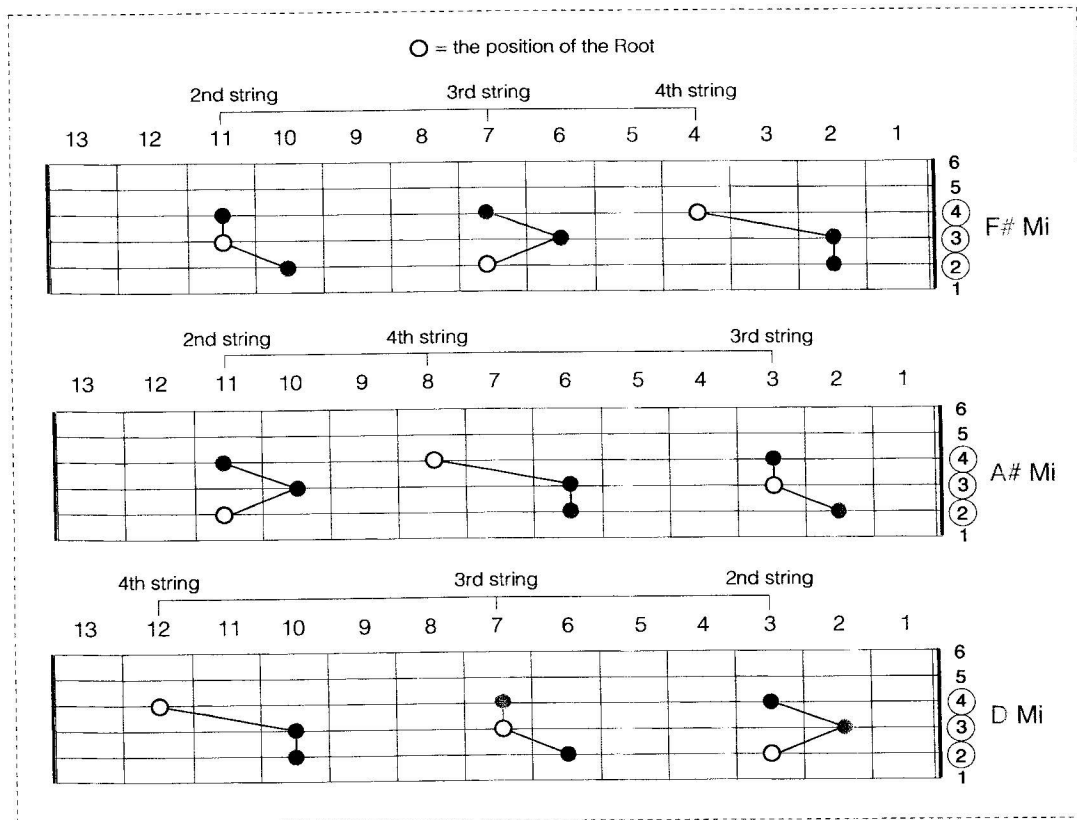
An application of the same procedure, (by raising any single note) causes its new position to become the Root of a Relative Minor triad, (in junction with any of the Major forms, one of three, for instance what was F Major, is now D Minor). In retrospect, any tone within the augmented triad when moved singularly $\frac{1}{2}$ step higher becomes the root of a minor triad.

THE AUGMENTED TRANSFORMATIONS into Minor Triads



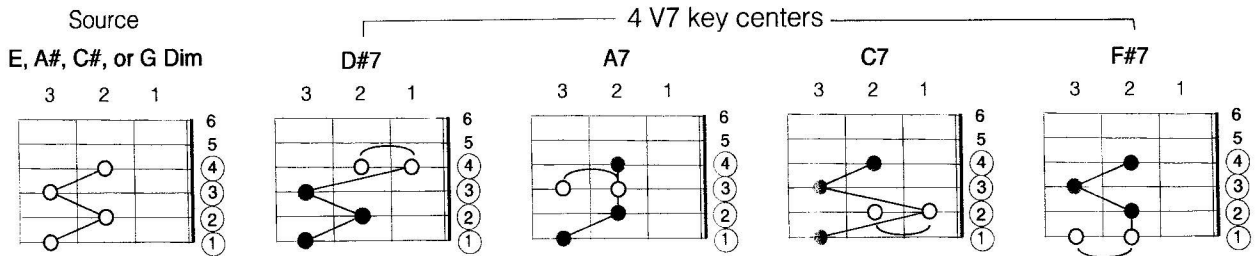
eg. 10 b

HORIZONTAL



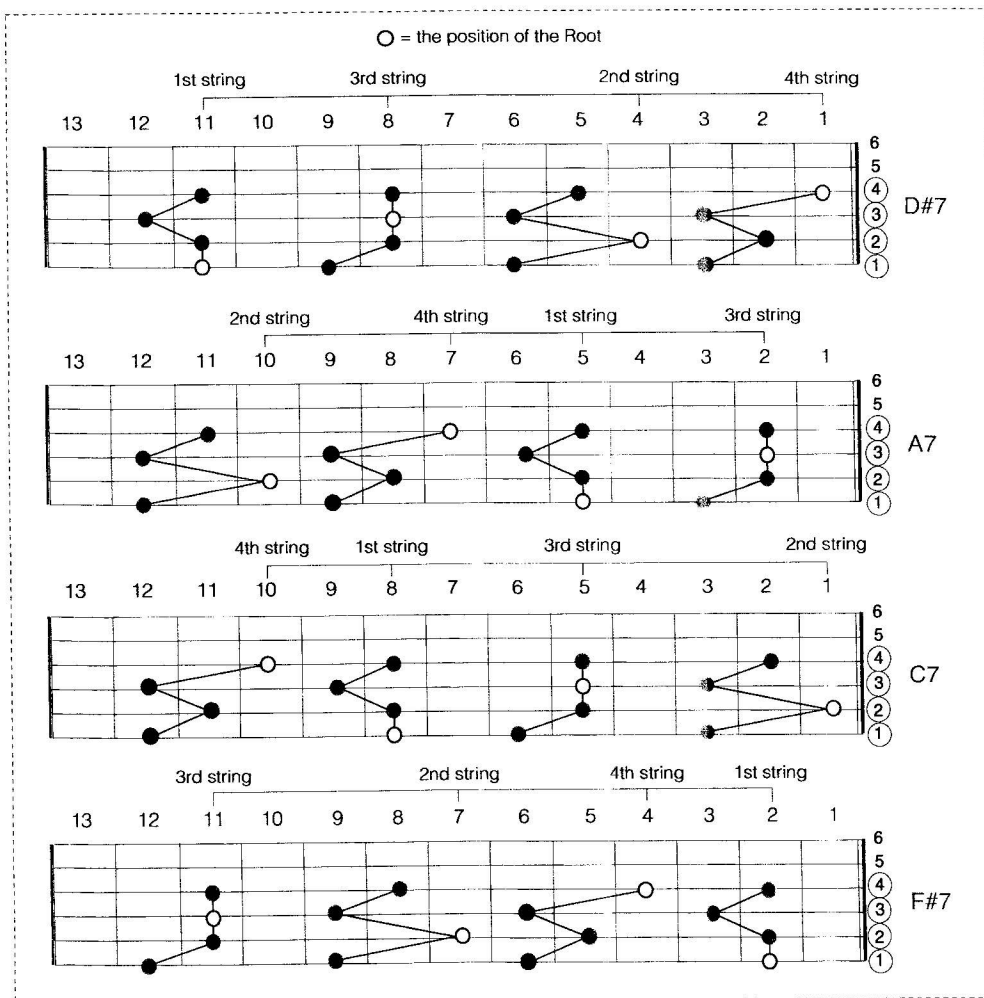
The following transformations reveal four separate V7 forms emerging from the parental diminished form. Like the augmented phenomenon, they spread horizontally, as well as vertically throughout various combinations of strings across the guitar fingerboard.

THE DIMINISHED TRANSFORMATIONS into V7 Forms



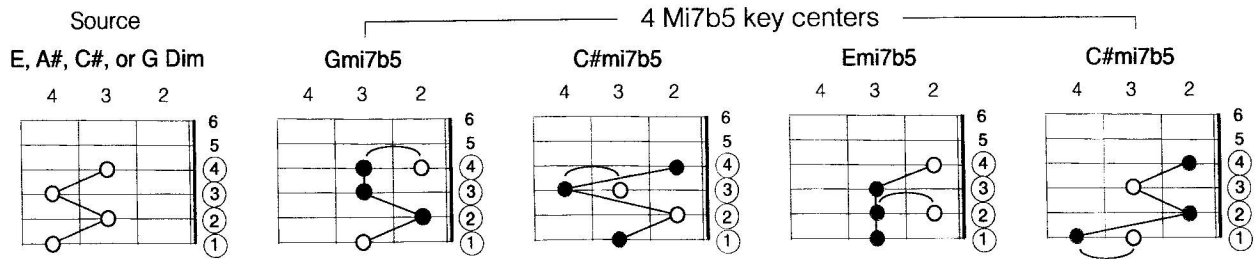
HORIZONTAL

eg. 11



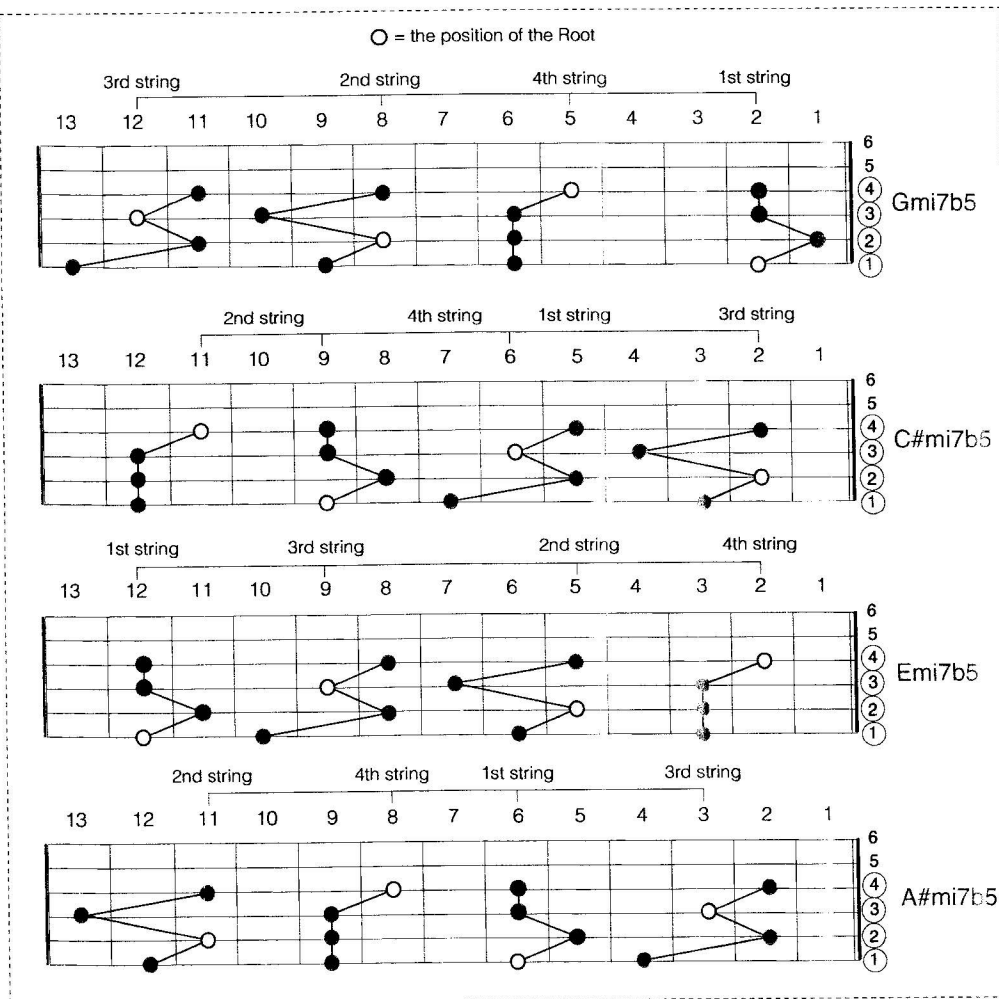
The final series of the diminished transformations has the parental form transformed into its second sibling, (the Mi7b5 chord) by raising any of its singular tones 1/2 step.

THE DIMINISHED TRANSFORMATIONS into Mi7b5 Forms



HORIZONTAL

eg. 11 b

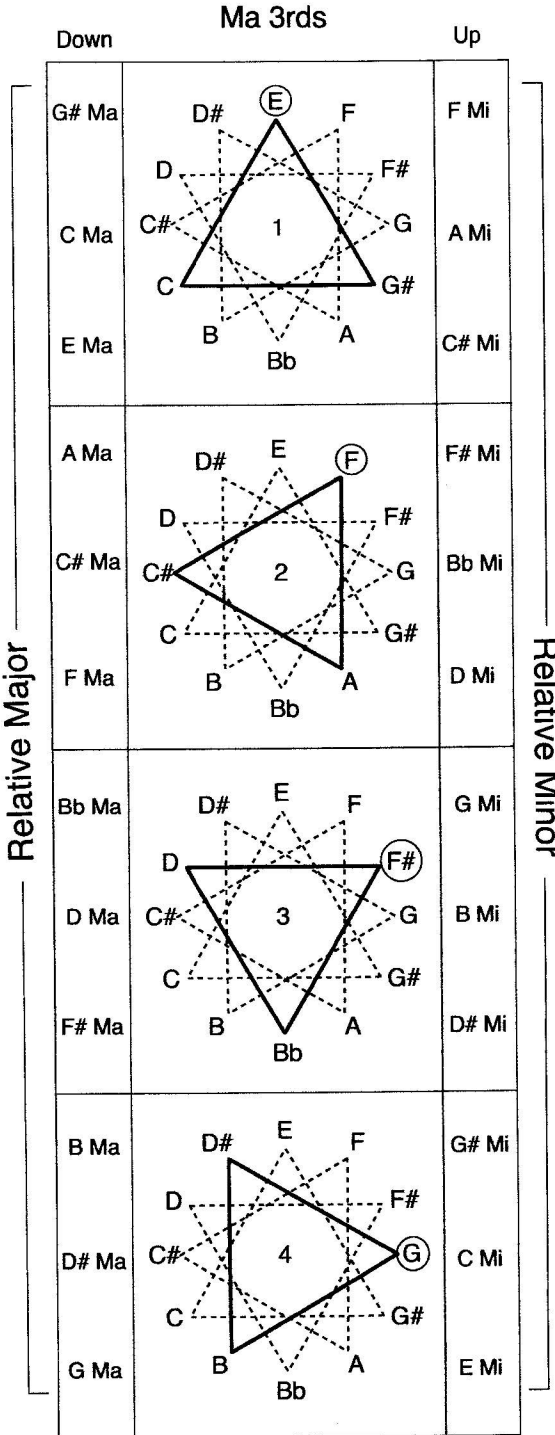


Formulas and Transformations

Geometric tables for the Augmented Parental Form, and its Offspring

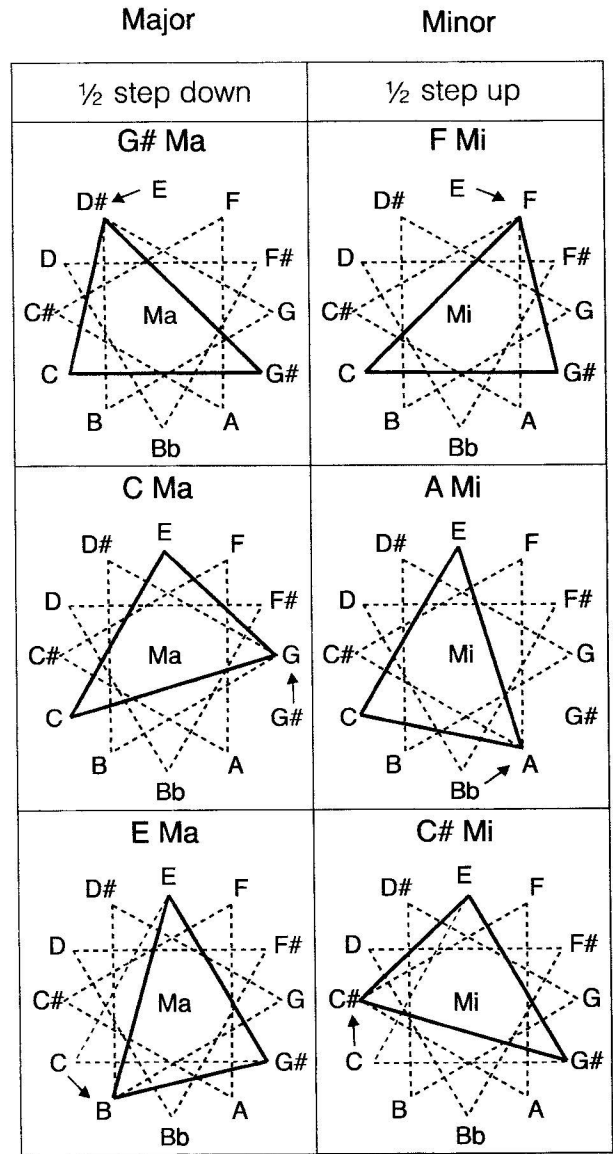
The Augmented Formula

The movement of any single tone $\frac{1}{2}$ step ----- Take Note:



The clear area in the first column provides the first 3 Major, & 3 Relative Minor triads seen below.

Transformations

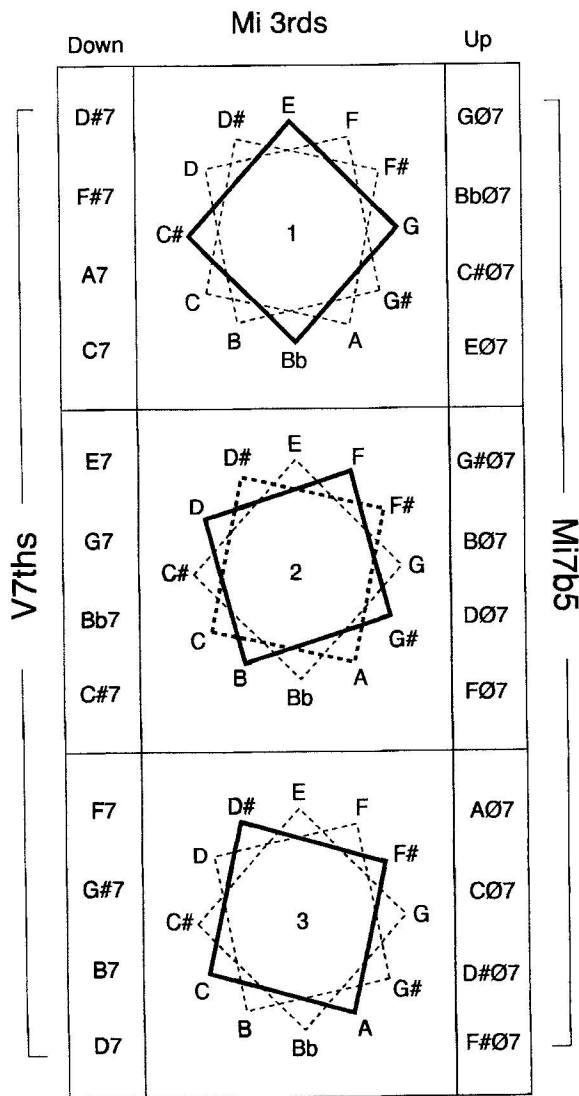


Like the Augmented form, producing two pure triads, (Major and Minor) by lowering, or raising any single tone ½ step, so too does the Diminished cluster produce V7th, and Mi7b5 forms utilizing the same procedure. Furthermore, the expansion of these forms chromatically through all 12 keys expand exponentially when extended across all of the various "string groups", (that will be covered shortly).

eg. 13

The Diminished Formula

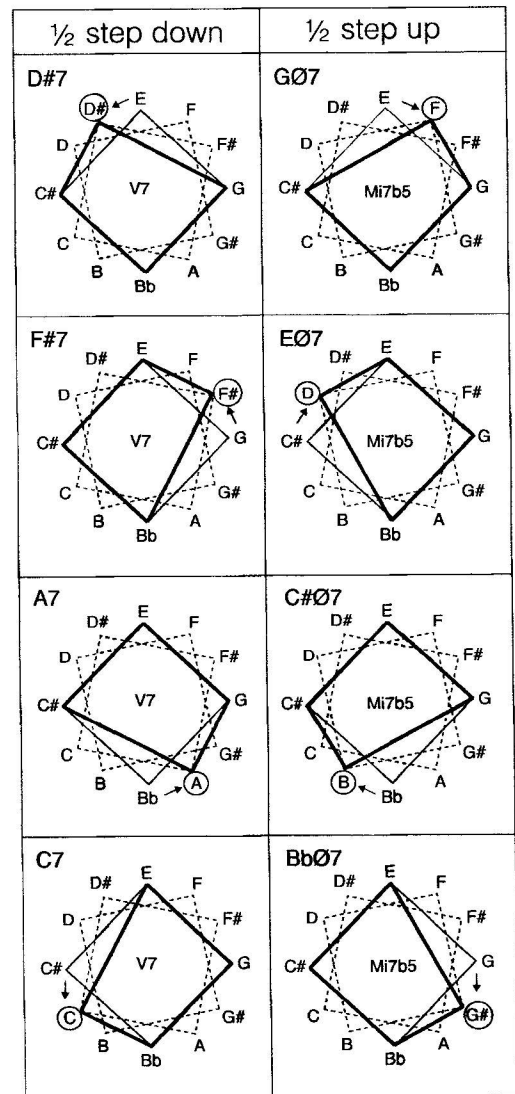
The movement of any single tone ½ step



Transformations

V7

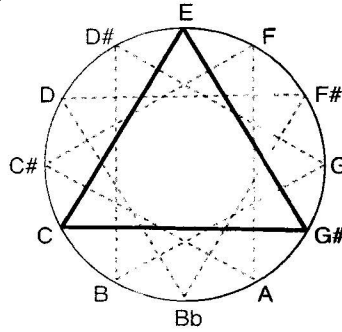
Mi7b5



The Augmented Form

The augmented interval is the Third Primary appearing on the circumference of the circle at three points. When in symmetry with each other they form an equilateral Triangle.

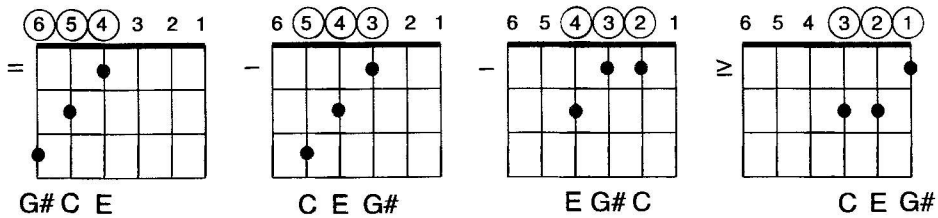
eg. 14



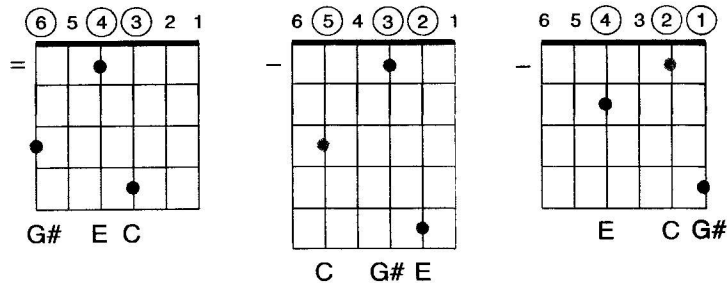
7 Vertical Augmented Inversions

(Common Groups)

Adjacent String Groups



Non-Adjacent String Groups

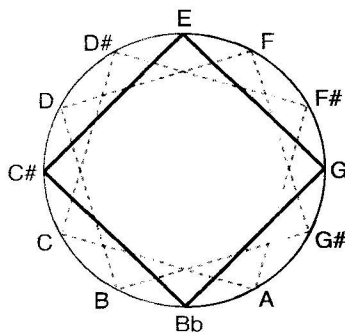


As part of a chromatic infrastructure, each of these particular inversions when placed horizontally across any chosen string group, (as 3 augmented triads in successive order) divide the guitar fingerboard into 3 active zones, each of these areas containing all twelve keys, (of either major, or relative minor triads) available in any of the 7 common string groups.

The Diminished Form

The diminished interval is the Fourth Primary appearing on the circumference of the circle at four points. When meeting in symmetry with each other they form an equilateral Diamond.

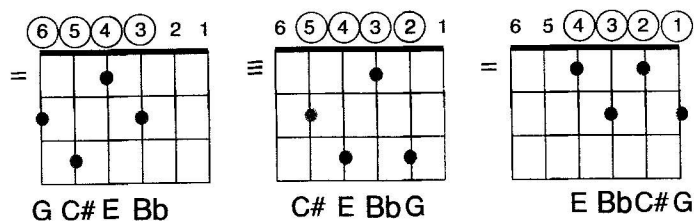
eg. 15



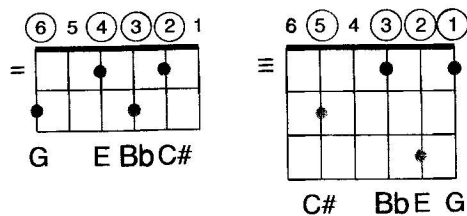
5 Vertical Augmented Inversions

(Common Groups)

Adjacent String Groups



Non-Adjacent String Groups



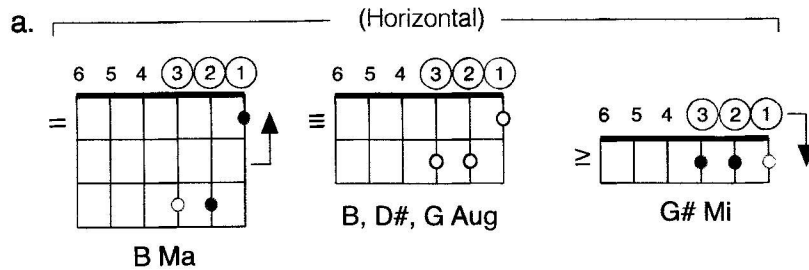
Some of the most valuable elements found within the common groups are based upon opposition.

The third primary, (the augmented triad) reveals itself horizontally within two types of inverted alterations. One of them, (major) being the result of any singular descending tone, while the other, (minor) is the result of an ascending tone.

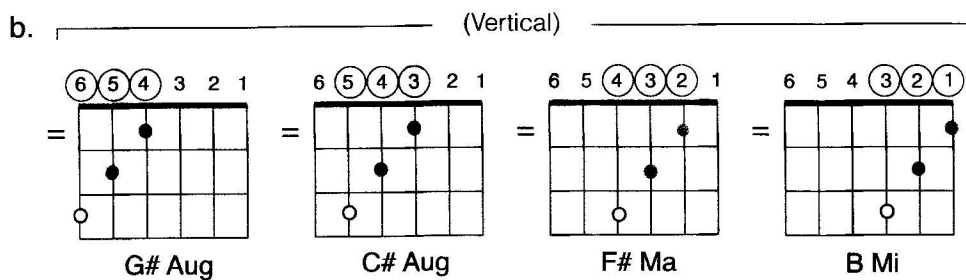
Both the augmented, and the diminished forms organize themselves into adjacent, or non-adjacent sets. Let's briefly look into another facet of this study, once again based upon the opposites.

eg. 16

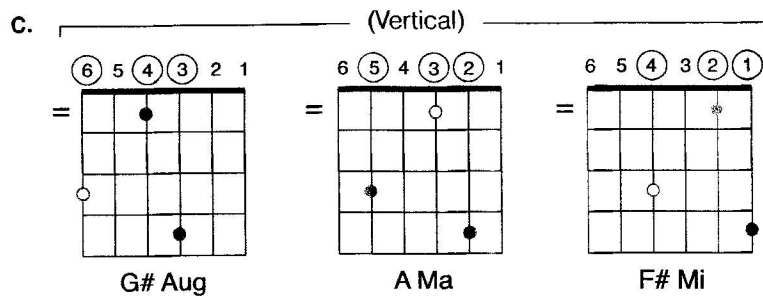
Horizontal vs. Vertical Alterations



Adjacent String Groups



Non-Adjacent String Groups

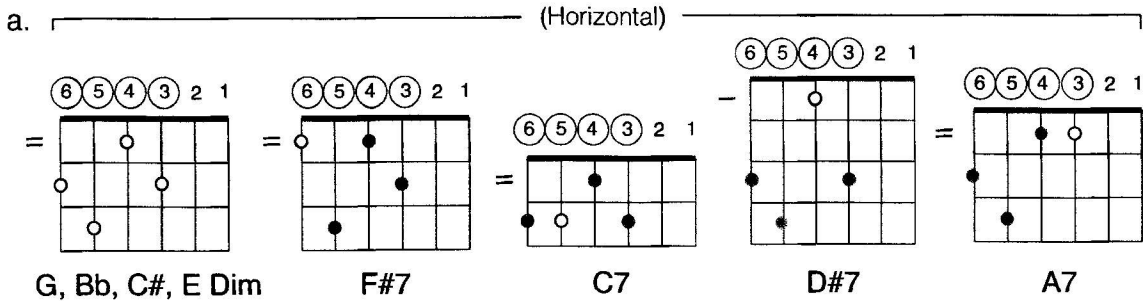


Examples 16a, b, and c seen above show the same effect taking place. Eg.a proceeds by either lowering, or raising the selected tone, while vertically the augmented triad when dispersed using the same fingering below itself in four adjacent string groups produces a natural reoccurrence of the same types of opposite siblings, (one Aug., and two Major, and Minor triads).

Similar effects take place within the diminished form, (the fourth primary). The chord transforms itself horizontally into 4 inversions, and vertically into 3 co-related forms.

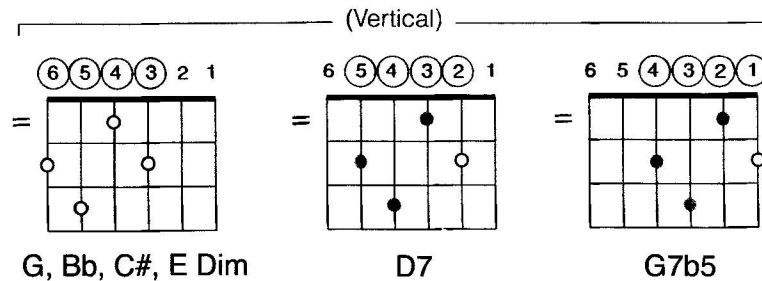
eg. 17

Horizontal vs. Vertical Alterations

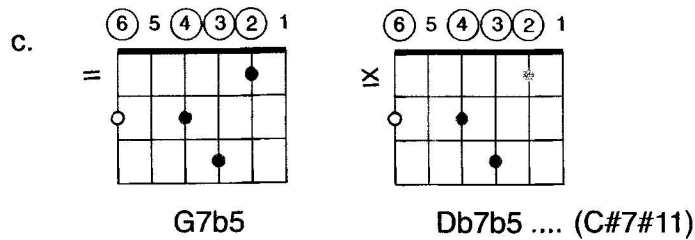


In example 17a. the diminished form horizontally inverts itself across 4 positions of one string group, (6543) using separate fingerings.

b. Adjacent String Groups

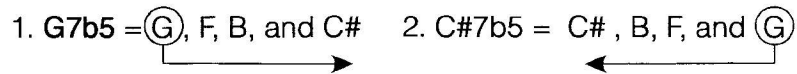


Seen above, in example 17b., the same diminished form when transferred across adjacent string groups forms another two important siblings. The first is seen as a D7, this time also appearing as a "poly-chord" as well, ... D / B on the 5432 string group. The second form on the 4321 string group appears as a G7 \flat 5. What's interesting with this one is how when it's transferred to a 6-432 group it reveals a vertical mirror image of itself upside down in the key of C \sharp



This of course suggests the consideration that due to their opposition the entire 12 tones are now divided into 6, (rightside up) and 6, (upside down) the root, and the tritone.

The tonal content of those two forms are in the following order:

$$1. G7b5 = \textcircled{G}, F, B, \text{ and } C\# \quad 2. C\#7b5 = C\#, B, F, \text{ and } \textcircled{G}$$


A continuous study of these types of opposites reveals in greater detail the architecture of the guitar's natural balance.

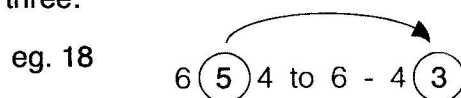
String Groups

Both the augmented, and diminished structures, (along with any of their extensions) should be expanded across what shall be referred to as "common" sets of string groups, but before doing so it's valuable to consider some of the details that led to their organization.

The 3 string forms of triads in total, (across 6 strings) add up to 20 sets, while the 4 string clusters contain 15 sets. Within the 3 string groups there are two opposite sets of conditions. The first are those sets which are in adjacent order. For example, even sets like 654, 543, 432, or 321. And the second condition contains variations that are un-even, like 6-43, 5-42, and 4-21.

To locate "non-adjacent" sets from the opposite "adjacent" take the tone that's located on the central string, (in the case of the 654 group, it would be the 5th string) and relocate that tone one octave higher on the next string above its highest, (the 4th string). This results in the first non-adjacent set of three:

eg. 18

$$6 \textcircled{5} 4 \text{ to } 6 - 4 \textcircled{3}$$


Although there's a full graphic blueprint in the following pages (containing 64 different sets of string combinations, its 64th representing silence as the opposite of sound) something to consider is the source of such information coming from a completely different direction. A six string figure can also be viewed as what's known to be a "hexagram", and the use of that particular figure can be found in the I Ching. What's interesting is how such coincidence reveals similarities in all things.

SECTION III

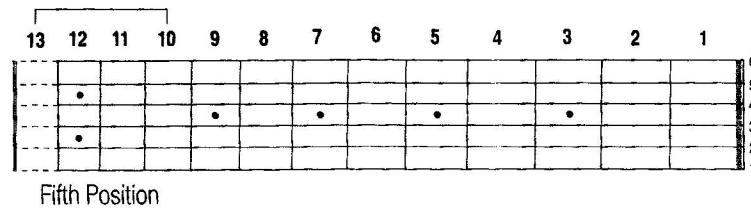
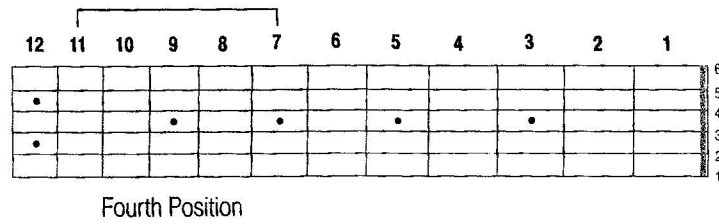
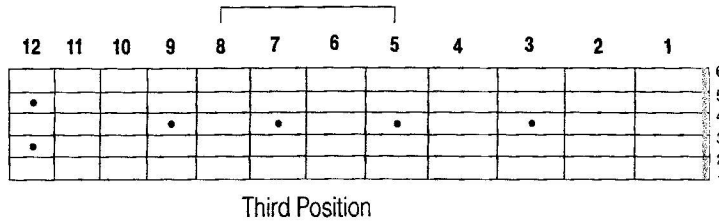
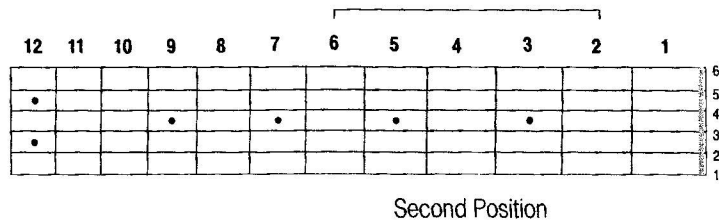
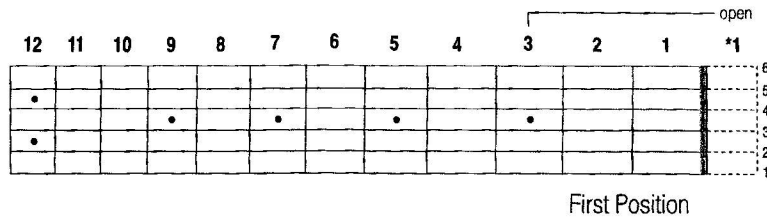
The Construction of Basic Line Forms,
and their Extensions

Inverted Patterns, and Positions

Linear Inversions

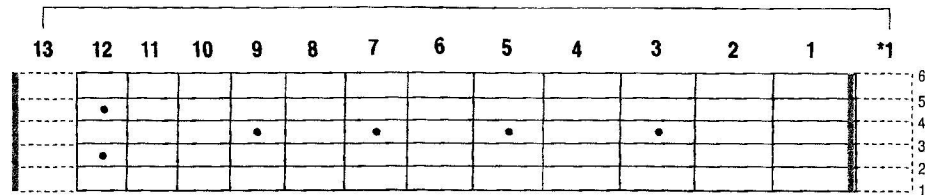
Ranges of chordal, and linear activities organize in greater balance when they're viewed as self contained divisions of the fingerboard, (similar to seperate floors in a house). These verticle areas comprise linear, as well as chordal inversions encompassing all twelve keys in each of their seperate positions.

eg. 32a

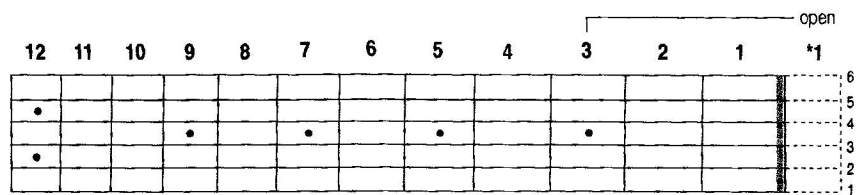


When each of these separate areas are mastered the sixth, (or full fingerboard becomes activated as a fully organized tool for any improvisational subject.

eg. 32b



The Full Fingerboard



First Position

Before beginning a discussion on "line forms", and their inversions it's important to define the proper use of fingerings for what's normally defined as "open strings".

Players often use a completely different arrangement of fingerings each time open strings are used in the lower area of the fingerboard. By placing the first finger behind the "nut", (just as if it were another fret) familiar fingerings normally used in different areas of the fingerboard take place in comfort here as well. The following patterns utilize this approach. Take note, the "asterisk", when in use should be viewed as a reminder regarding ones placement of the first finger behind the nut whenever it appears on fingerings in the upcoming patterns.

The first, and fourth fingers of the left hand determine not only the beginning of the pattern, but also the position in which it unfolds vertically, as well as horizontally. In example 33, patterns I, and II reveal a full vertical inversion.

eg. 33

Gmi7: Inversion I / Position I



Once again, when we give thought to the practical use of the concept of polarity and view the outer fingers of the hand, (eg. 34) the two patterns seen above are perfectly in line with the first, and fourth fingers. Pattern 1 begins vertically with the 4th finger, (at G, on the 6th string) followed by its next tonal inversion, (one octave higher) in close range, beginning with the 1st finger, (at the open G, on the 3rd string, behind the "nut" at the 0 fret). Those are the first two vertical inversions of this particular line form, eventually horizontally inverting in ascent across the fingerboard.

eg. 34 outer left, (the first finger) inner right, (the fourth finger)



Also, take note that the natural position of the fingers, (when both hands are viewed directly beside each other) can be defined as the outer, and inner positions of the four jointed parts in that alignment, (here the thumb isn't included). And due to the position of those particular alignments on the neck, the lower, and upper inversions of any linear pattern automatically unfolds across the entire fingerboard.

The patterns in the following examples are designed with fingerings that display vertical, and horizontal linear positions. They also structurally have a lot to do with specific inversions of chord forms that embody the melodic topic.

eg. 35a

Gmi7 (6543)

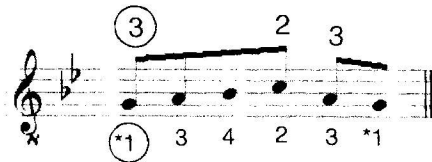
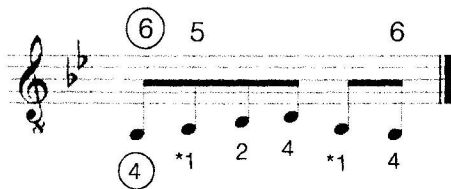
Vertical

Gmi7 (5432)



1. Starting with the fourth finger:

2. Starting with the first finger:



The structure that's displayed in example 35a reveals a specific pattern that's transposed in two separate registers, taking place in one position, (the lowest area of the fingerboard).

eg.35b

Gmi7 (6543)

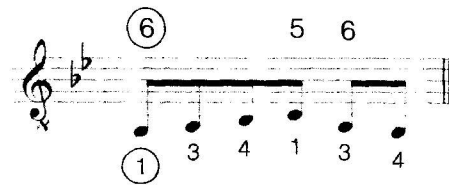
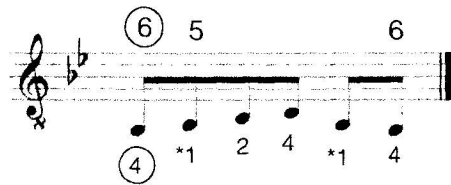
Horizontal

Gmi7 (6543)



1. Starting with the fourth finger:

2. Starting with the first finger:



It's important to remember how the basic modifications of the augmented, and diminished parental forms automatically produce chordal inversions because similar types of inversions take place within linear patterns as well. In the two examples above, (35a, and 35b) take note that 35a contains two patterns, an octave apart, (that's why it's considered vertical) while 35b contains the same two patterns in unison, changing to the opposite fingerings, (first the use of the 4th finger as the starting point, then starting from the first). These are the inversions of fingerings.

That sets up our next series of linear inversions, (much like a mirror image of the two original fingerings).

eg. 35c

Vertical

The image shows musical notation for Gmi7 chords and their linear inversions. At the top left, a Gmi7 chord is shown in treble clef with a key signature of one flat (Bb), with the fingering (6543) indicated above it. To its right, two vertical Gmi7 chords are shown, with fingerings (5432) and (4321) indicated above them. Below these are two linear inversion exercises. The first, labeled '1. Starting with the first finger', shows a sequence of notes: G (6), A (5), Bb (6), C (1), D (3), Eb (4), F (1), G (3), Ab (4). The second, labeled '2. Starting with the fourth finger', shows a sequence: G (4), Ab (3), Bb (4), C (1), D (2), Eb (4), F (1), G (4).

When continued in this way the inversions that unfold are 12 in number, and can be fully viewed in example 36.

These start with 6 dual patterns that begin with either of the first, or fourth starting points. In the following series there are only 5 that continue in this way, with the addition, (the 6th) of one specific fingering that begins with using the third finger instead of the fourth, (due to the intervallic tuning of a Ma 3rd between the second and the third strings).

Also, in the chordal inversions found in example 35c, (above #2, starting with the fourth finger) the reason there are two separate forms is due to the number of frets that particular fingering covers. Both of those inversions effect that area.

The following 12 patterns are to be viewed as an introduction to vertical areas that directly relate to a specific key center, (G Minor) and they are a skeletal form of six sets, (with two in each). These are the six vertical positions that determine not only the specific inversions, but various extensions as well.

12 Inverted Fingerings

eg. 36

(and positions of one pattern)

Inversion I / Position I

Musical notation for Inversion I / Position I. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 6, 5, 6 above the notes; 4, *1, 2, 4, *1, 4 below. A bar line is at the end.

II

Musical notation for Inversion II / Position II. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 3, 2, 3 above the notes; *1, 3, 4, 2, 3, *1 below. A bar line is at the end.

Inversion II / Position II

Musical notation for Inversion II / Position II. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 6, 5, 6 above the notes; 1, 3, 4, 1, 3, 1 below. A bar line is at the end.

IV

Musical notation for Inversion IV / Position IV. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 4, 3, 4 above the notes; 4, 1, 2, 4, 1, 4 below. A bar line is at the end.

Inversion III / Position III

Musical notation for Inversion III / Position III. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 4, 3, 4 above the notes; 1, 3, 4, 1, 3, 1 below. A bar line is at the end.

VI

Musical notation for Inversion VI / Position VI. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 2, 1, 2 above the notes; 4, 1, 2, 4, 1, 4 below. A bar line is at the end.

Inversion IV / Position IV

Musical notation for Inversion IV / Position IV. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 2, 1, 2 above the notes; 1, 3, 4, 1, 3, 1 below. A bar line is at the end.

VIII

Musical notation for Inversion VIII / Position VIII. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 5, 4, 5 above the notes; 4, 1, 2, 4, 1, 4 below. A bar line is at the end.

Inversion V / Position V

Musical notation for Inversion V / Position V. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 5, 4, 5 above the notes; 1, 3, 4, 1, 3, 1 below. A bar line is at the end.

X

Musical notation for Inversion X / Position X. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 3, 2, 3 above the notes; 3, 1, 2, 4, 1, 3 below. A bar line is at the end.

Inversion VI / Position VI

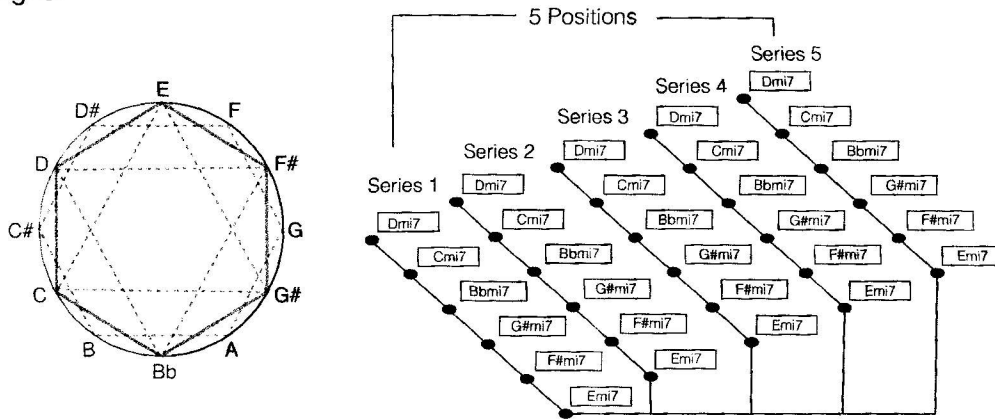
Musical notation for Inversion VI / Position VI. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 3, 2, 3 above the notes; 1, 3, 4, 2, 3, 1 below. A bar line is at the end.

XII

Musical notation for Inversion XII / Position XII. The staff shows a treble clef with a key signature of one flat (B-flat). The notes are G4, A4, B4, C5, B4, A4, G4. Fingerings are indicated by circled numbers: 6, 5, 6 above the notes; 4, 1, 2, 4, 1, 4 below. A bar line is at the end.

The patterns displayed next are based upon a repetitive motive that's transposed across 6 key centers a Ma 2 apart. These line forms are extended across 3 separate adjacent string groups, and by doing so they cover 6 inversions in each series across 5 horizontal positions. The study itself uses descending transpositions of the original form, to define its inversion of fingerings across the fingerboard. What initially was demonstrated as a motive, (in the key of Bb, as a Gmi7) has now been transposed to Dmi7 across a descending framework that covers 6 keys, in the following order: Dmi7, Cmi7, Bbmi7, G#mi7, F#mi7, and finally Emi7, continuing thru a full series of five ascending positions. The sixth, (optional) position takes place at the 12th fret beginning with the first finger at D on the 4th string. The dotted markings seen in example 37 represent the sequential inversions ascending horizontally across the entire fingerboard.

eg. 37



This study is arranged across three separate adjacent string groups: 4321, 5432, and 6543. Each of these string groups offers greater insight regarding areas of activity that automatically transpose themselves vertically through various key centers, and horizontally across the framework of the fingerboard. Since these forms cover only half of the 12 keys, it's advised to extend it eventually throughout the entire 12.

SECTION IV

Melodic Patterns
(and their extended variations)

The Whole Tone Sequence

TRANSPOSED

Melodic Pattern

Chord sequence: Dmi7, Cmi7, Bbmi7, Abmi7, F#mi7, Emi7

The Inverted Melodic Pattern

String Group 4321

String Group 5432

String Group 6543

String Groups, Inversions & Transpositions

String Group 4321

I

Dmi7
2 1 2
4 *1 2 4 *1 4

Cmi7
1 2
1 3 4 1 3 1

Bbmi7
3 2
3 1 2 4 1 3

Abmi7
3 2
1 3 4 2 3 1

F#mi7
4 3
4 1 2 4 1 4

Emi7
3 4
1 3 4 1 3 1

II

Dmi7
2 1 2
2 4 4 1 3 1

Cmi7
3 2
3 1 2 4 1 3

Bbmi7
2 3
1 3 4 2 3 1

Abmi7
4 3
4 1 2 4 1 4

F#mi7
3 4
1 3 4 1 3 1

Emi7
2 1 2
2 4 4 1 3 1

III

Dmi7
3 2
3 1 2 4 1 3

Cmi7
2 3
1 3 4 2 3 1

Bbmi7
4 3
4 1 2 4 1 4

Abmi7
4 3
1 3 4 1 3 1

F#mi7
2 1 2
2 4 4 1 3 1

Emi7
3 2
3 1 2 4 1 3

IV

Dmi7
3 2 3
1 3 4 2 3 1

Cmi7
4 3 4
4 1 2 4 1 4

Bbmi7
3 4
1 3 4 1 3 1

Abmi7
2 4 4 1 3 1

F#mi7
3 2 3
3 1 2 4 1 3

Emi7
2 3
1 3 4 2 3 1

V

Dmi7
4 3 4
4 1 2 4 1 4

Cmi7
3 4
1 3 4 1 3 1

Bbmi7
1 2
2 4 4 1 3 1

Abmi7
3 2 4 1 3
3 1 2 4 1 3

F#mi7
2 3
1 3 4 2 3 1

Emi7
4 3 4
4 1 2 4 1 4

String Group 5432

I

Dmi7
4 3 4
*1 3 4 *1 3 *1

Cmi7
5 4 5
4 *1 2 4 *1 4

Bbmi7
4 5
1 3 4 1 3 1

Abmi7
3 2 3
1 3 4 2 3 1

F#mi7
4 3 4
4 1 2 4 1 4

Emi7
3 4
1 3 4 1 3 1

II

Dmi7
5 4 5
4 1 2 4 1 4

Cmi7
4 5
1 3 4 1 3 1

Bbmi7
3 2 3
1 3 4 2 3 1

Abmi7 F#mi7 Emi7

III

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

IV

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

V

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

String Group 6543

I

Dmi7
4 3 4
*1 3 4 *1 3 *1

Cmi7
5 4 5

Bbmi7
4 5
1 3 4 1 3 1

Abmi7
6 5 6
#4 1 2 4 1 4

F#mi7
5 6
#1 #3 4 1 3 1

Emi7
4 3 4
1 #3 4 1 3 1

II

Dmi7
5 4 5
4 1 2 4 1 4

Cmi7
4 5
1 3 4 1 3 1

Bbmi7
6 5 6
4 1 2 4 1 4

Abmi7
6 5 6
1 3 4 1 3 1

F#mi7
4 3 4
#1 #3 4 1 3 1

Emi7
5 4 5
4 #1 2 4 1 4

III

Dmi7
5 4 5
1 3 4 1 3 1

Cmi7
6 5 6
4 1 2 4 1 4

Bbmi7
5 6
1 3 4 1 3 1

Abmi7
4 3 4
1 3 4 1 3 1

F#mi7
5 4 5
#4 #1 2 4 1 4

Emi7
5 4 5
1 #3 4 1 3 1

IV

Dmi7
6 5 6
4 1 2 4 1 4

Cmi7
5 6
1 3 4 1 3 1

Bbmi7
3 4
1 3 4 1 3 1

Abmi7 F#mi7 Emi7

V

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

Combinations

All Groups

I

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

II

Dmi7 Cmi7 Bbmi7

Abmi7 F#mi7 Emi7

6 5 6 4 3 4 2 1 2

1 3 4 1 3 1 2 4 4 1 3 1

III

Dmi7 Cmi7 Bbmi7

3 2 3 2 3 4 4 4

3 1 2 4 1 3 1 3 4 2 3 1 4 1 2 4 1 4

Abmi7 F#mi7 Emi7

4 3 4 5 4 5 4 5

1 3 4 1 3 1 4 1 2 4 1 4 1 3 4 1 3 1

IV

Dmi7 Cmi7 Bbmi7

6 5 6 5 6 4 3 4

4 1 2 4 1 4 1 3 4 1 3 1 1 3 4 1 3 1

Abmi7 F#mi7 Emi7

2 1 2 3 3 2 3 3

2 4 4 1 3 1 3 1 2 4 1 3 1 3 4 2 3 1

V

Dmi7 Cmi7 Bbmi7

4 3 4 3 4 5 4 5

4 1 2 4 1 4 1 3 4 1 3 1 4 1 2 4 1 4

Abmi7 F#mi7 Emi7

5 4 6 5 6 5 6

1 3 4 1 3 1 4 1 2 4 1 4 1 3 4 1 3 1

Extension I

String Group

FIRST POSITION

4 3 2 1

A

Dmi7

Musical notation for Dmi7 in first position. The staff shows a treble clef with a key signature of two flats (Bb, Eb). The chord is Dmi7. The melody consists of eighth notes with fingerings: 4, 3, 2, 1, 2, 3, 4. The bass line consists of eighth notes with fingerings: *1, 3, 4, *1, 2, 3, 2, *1, 4, 2, *1, 4, 2, 3, *1, 4, 3, *1.

Cmi7

Musical notation for Cmi7 in first position. The staff shows a treble clef with a key signature of three flats (Bb, Eb, Ab). The chord is Cmi7. The melody consists of eighth notes with fingerings: 4, 3, 2, 1, 2, 3, 4. The bass line consists of eighth notes with fingerings: *1, 2, *1, 3, 3, 4, 1, 3, 4, 3, 1, 4, 3, 1, *1, 4, 2, *1.

Bbmi7

Musical notation for Bbmi7 in first position. The staff shows a treble clef with a key signature of four flats (Bb, Eb, Ab, Db). The chord is Bbmi7. The melody consists of eighth notes with fingerings: 4, 3, 2, 1, 2, 1, 2, 3. The bass line consists of eighth notes with fingerings: 4, *1, 3, 2, 3, 3, 2, 1, 4, 1, 3, 4, 1, 2, 1, 4, 2, 3.

Abmi7

Musical notation for Abmi7 in first position. The staff shows a treble clef with a key signature of five flats (Bb, Eb, Ab, Db, Gb). The chord is Abmi7. The melody consists of eighth notes with fingerings: 3, 2, 1, 2, 3, 4, 3, 4. The bass line consists of eighth notes with fingerings: 1, 3, 4, 2, 4, 1, 2, 1, 4, 2, 4, 3, 4, 1, 3, 1, 1.

F#mi7

Musical notation for F#mi7 in first position. The staff shows a treble clef with a key signature of one sharp (F#). The chord is F#mi7. The melody consists of eighth notes with fingerings: 4, 3, 2, 1, 2, 3, 4. The bass line consists of eighth notes with fingerings: 3, 4, 1, 1, 3, 1, 4, 3, 4, 1, 4, 3, 1, 3, 1, 1, 4.

E mi7

Musical notation for E mi7 in first position. The staff shows a treble clef with a key signature of one sharp (F#). The chord is E mi7. The melody consists of eighth notes with fingerings: 4, 3, 2, 1, 2, 3, 4. The bass line consists of eighth notes with fingerings: 1, 3, 4, 2, 1, 4, 2, 1, 4, 2, 3, 1, 4, 3, 1.

SECOND POSITION

B

Dmi7

Musical notation for Dmi7 in second position. The staff shows a treble clef with a key signature of two flats (Bb, Eb). The chord is Dmi7. The melody consists of eighth notes with fingerings: 3, 2, 1, 2, 3, 4. The bass line consists of eighth notes with fingerings: 2, 1, 3, 3, 1, 3, 4, 3, 1, 3, 2, 3, 1, 2, 1, 4, 2, 3.

Cmi7

2 1 2 1 2 3 4 3 4 2

2 4 3 4 1 2 1 4 2 3 1 3 1 4 2 1 3 2

Bbmi7

3 2 1 2 3 4 3 1 1

1 3 4 2 4 4 3 4 2 4 1 4 2 4 3 4 1 1

Abmi7

4 3 2 1 2 3 2 3 4

3 1 1 3 1 4 3 1 4 1 3 1 4 1 3 1 1 4

F#mi7

4 3 2 1 2 3 4 3

1 3 4 1 2 3 2 1 4 2 1 4 2 3 1 4 3 1 1 3 1 3

E mi7

4 3 2 1 2 3 4

1 3 4 2 1 4 2 1 4 2 3 1 4 3 1

THIRD POSITION

C

Dmi7

1 2 1 2 3 4 3 4

1 4 3 4 1 2 1 4 2 3 1 3 1 4 2 4

Cmi7

2 1 2 1 2 3 4 3 4

1 3 3 3 2 3 1 3 1 2 4 4 3 4 1 3 1 1

Bbmi7

4 3 2 1 2 3 4

1 3 4 1 1 3 1 4 3 1 4 3 1 1 1 4 2 3

Abmi7

Musical notation for Abmi7 in fourth position. The scale consists of the notes Ab, Bb, Cb, Db, Eb, Fb, Gb, Ab. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 3-2-1-4 for the descending scale.

F#mi7

Musical notation for F#mi7 in fourth position. The scale consists of the notes F#, G#, A#, B#, C#, D#, E#, F#. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

Emi7

Musical notation for Emi7 in fourth position. The scale consists of the notes E, F, G, A, B, C, D, E. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 3-2-1-4 for the descending scale.

FOURTH POSITION

D

Dmi7

Musical notation for Dmi7 in fourth position. The scale consists of the notes D, E, F, G, A, B, C, D. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

Cmi7

Musical notation for Cmi7 in fourth position. The scale consists of the notes C, D, E, F, G, A, B, C. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

Bbmi7

Musical notation for Bbmi7 in fourth position. The scale consists of the notes Bb, C, D, Eb, F, G, Ab, Bb. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

Abmi7

Musical notation for Abmi7 in fourth position. The scale consists of the notes Ab, Bb, Cb, Db, Eb, Fb, Gb, Ab. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

F#mi7

Musical notation for F#mi7 in fourth position. The scale consists of the notes F#, G#, A#, B#, C#, D#, E#, F#. Fingerings are indicated above the notes: 1-2-3-4 for the ascending scale and 4-3-2-1 for the descending scale.

Emi7

ADDITIONAL FIFTH POSITION

E Abmi7

Extension II

FIRST POSITION

String Group
5432

F Dmi7

Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

SECOND POSITION

G **Dmi7**

Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

THIRD POSITION

H

Dmi7

Cmi7

Bbmi7

Abmi7

F#mi7

E mi7

FOURTH POSITION

I

Dmi7

Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

FIFTH POSITION

J Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

Extension III

String Group

FIRST POSITION

6543

K

Dmi7

Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

SECOND POSITION

L Dmi7

5 6 5 4 3 4 3 4 2 1 4 2 4 5

4 4 1 3 4 1 2 4 1 4 3 4 1 2 1 4 2 4

Cmi7

6 5 4 3 4 5

1 1 3 4 1 2 3 1 4 3 1 3 4 3 1

Bbmi7

6 5 4 3 4 5 6

4 1 2 4 1 4 3 4 3 4 1 2 1 4

Abmi7

6 5 4 3 1 3 1 3 4 5 4 5 6

1 3 4 1 2 3 3 1 1 3 1 3 3 1 1 3 1

F#mi7

4 6 5 4 5 4 3 1 3 4 3 1 3 4 3 1 1

4 1 2 1 4 3 2 3 1 3 4 3 1 3 4 3 1 1

E mi7

5 4 3 4 5 6 4 3 1 4 3 4 1 2 1 4 2

1 2 1 4 3 4 1 3 4 3 1 4 3 4 1 2 1 4 2

THIRD POSITION

M Dmi7

6 5 4 3 4 5 2 4 1 4 1 3 4 1 2 3 4 3 1 3 1 4 3 1

2 4 1 4 1 3 4 1 2 3 4 3 1 3 1 4 3 1

Cmi7

Bbmi7

Abmi7

F#mi7

E7mi

FOURTH POSITION



Dmi7

Cmi7

Bbmi7

Abmi7

F#mi7

Emi7

FIFTH POSITION



Dmi7

Cmi7

Bbmi7

Abmi7

Musical notation for Abmi7 exercise. The staff shows a sequence of notes with fingerings: 6 (1), 5 (4), 4 (3), 3 (1), 4 (3), 5 (1), 4 (3), 3 (1). The notes are: Ab, Bb, C, D, Eb, F, G, Ab.

Emi7

Musical notation for Emi7 exercise. The staff shows a sequence of notes with fingerings: 6 (1), 5 (1), 4 (3), 5 (4), 4 (2), 3 (3), 4 (1), 5 (4), 4 (1), 3 (4). The notes are: E, F, G, Ab, Bb, C, D, E.

Chordal, and Linear Inversions

Vertical Extensions, and their Horizontal Positions

First Inversion

Chord diagram for Fmi7 in first inversion. The notes are G, Ab, Bb, C. The fingering is 6-4-3-2.

6543

Musical notation for exercise 6543. The staff shows a sequence of notes with fingerings: 6 (1), 5 (3), 4 (4), 5 (1), 3 (2), 4 (3), 4 (*1), 5 (3), 6 (4), 5 (2), 4 (3), 3 (1), 2 (4), 1 (3), 3 (*1), 4 (4), 5 (1), 6 (3), 5 (1), 4 (4), 3 (3), 2 (1).

65432

Musical notation for exercise 65432. The staff shows a sequence of notes with fingerings: 6 (1), 5 (3), 4 (4), 5 (1), 4 (*1), 3 (3), 2 (4), 3 (1), 3 (*1), 4 (3), 5 (1), 6 (4), 5 (3), 4 (3), 3 (1), 2 (4), 1 (3), 3 (*1), 4 (4), 5 (1), 6 (3), 5 (1), 4 (4), 3 (3), 2 (1).

654321

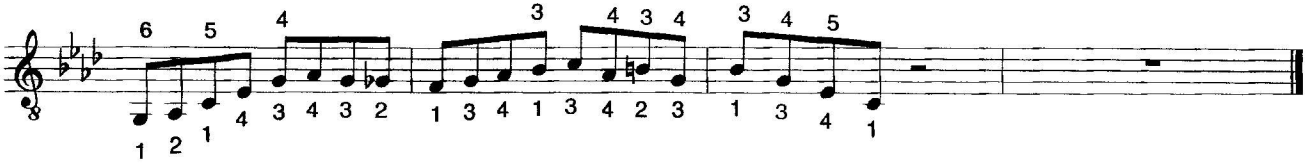
Musical notation for exercise 654321. The staff shows a sequence of notes with fingerings: 6 (1), 5 (3), 4 (4), 5 (1), 4 (*1), 3 (3), 2 (4), 1 (3), 3 (*1), 4 (4), 5 (1), 6 (3), 5 (1), 4 (4), 3 (3), 2 (1), 3 (4), 4 (3), 5 (1), 6 (3), 5 (1), 4 (4), 3 (3), 2 (1).

Second Inversion

Fmi7 
8 6 - 432

II

6543



65432



654321



Third Inversion

Fmi7 
8 6 - 432

III

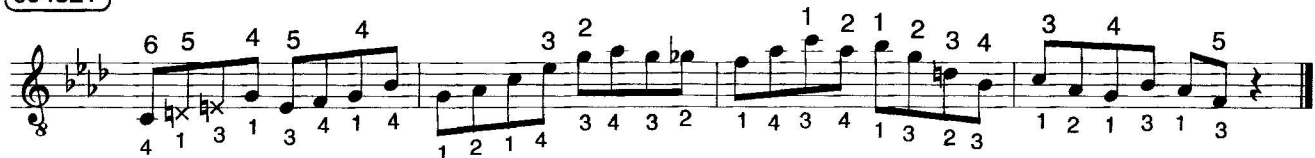
6543




65432



654321



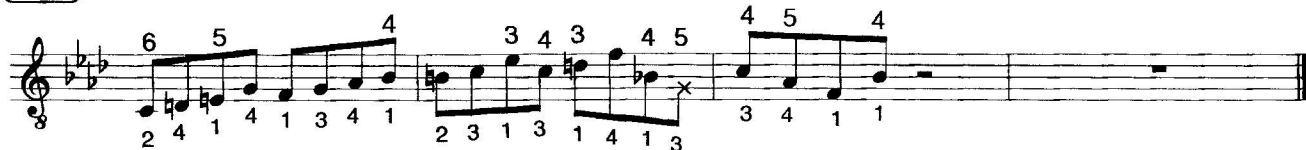
Fourth Inversion

Fmi7 

6 - 432

IV

6543




65432



654321



Fifth Inversion

Fmi7 

6 - 432

V

6543



65432



654321



Rhythm Changes:

Position I

A

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Strings: 1 2 1 2 1 2 3 4 3 4 5

Fingerings: 4 4 3 1 4 1 2 4 1 4 1 2 3 1 4 2 1 3 *1 2 2 3 3 1 *1 3 1 4 1 2

Ebmi9 Ab7b13 Dbma7 Gb13 Cmi7 B13 Bbmi7 Eb7b9

Fingerings: 3 1 3 2 1 4 3 2 1 3 1 4 3 4 2 3 4 5 4 5 4 3 4 1 3 4 2 3 4 5 4 5 4 5 4 5 1 4 1 2 3 4

B

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Fingerings: 4 5 1 4 3 1 *1 4 3 *1 1 4 3 1 1 2 1 4 3 1 4 2 1 3 2 3 3 1 2 4 1 3 2 3

Ebmi9 Ab7b13 Dbma7 Gb13 Ab Eb7b9

Fingerings: 2 1 4 1 2 4 1 4 3 4 4 1 4 2 1 3 1 3 1 4 1 2 3 1 4 1 2 3 6 4

C

G13 G7b13 C9 C7b9

Fingerings: 6 5 4 3 4 3 2 *1 3 4 *1 3 4 3 *1 4 *1 2 *1 4 *1 2 *1 4 *1 2 *1 4 3 2 3 *1 3 4 2 3 *1

F13 F7b13 Bb13 Bb7b13 Bbmi7 Eb7b9

Fingerings: 5 4 3 2 1 3 4 1 3 4 3 1 1 2 3 2 3 1 3 3 2 3 1 4 3 2 3 2 *1 4

D

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Fingerings: 2 1 2 1 1 2 3 4 2 1 4 1 2 1 4 3 1 4 2 1 3 *1 2 2 3 2 3 3 2 3 1 2 4 1 3 *1 3

Ebmi9 Ab7b13 Dbma7 Gb13 Abma7

Fingerings: 5 6 5 6 5 6 5 6 5 4 3 1 1

Position II

E

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Ebmi9 Ab7b13 Dbma7 Gb13 Cmi7 B13 Bbmi7 Eb7b9

F

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Ebmi9 Ab7b13 Dbma7 Gb13 Ab Eb7b9

G

G13 G7b13 C9 C7b9

F13 F7b13 Bb13 Bb7b13 Bbmi7 Eb7b9

H

Ab13 Bmi7 Bbmi7 Eb7b9 Ab13 F7b13 Bbmi7 Eb7b9

Ebmi9 Ab7b13 Dbma7 Gb13 Abma7

Position III

I

Ab13 3 4 2 1 4 Bmi7 4 2 3 1 3 Bbmi7 1 3 2 4 Eb7b9 3 1 3 1 Ab13 4 1 4 1 2 2 3 1 3 F7b13 5 3 4 Bbmi7 4 3 4 1 2 4 Eb7b9 4 1 4 3 4

Ebmi9 3 4 1 2 4 Ab7b13 4 5 1 3 1 4 Dbma7 4 2 3 1 3 Gb13 3 4 4 1 3 1 Cmi7 3 1 1 2 3 B13 4 5 6 4 1 1 4 Bbmi7 2 3 4 1 Eb7b9 5 4 1 1

J

Ab13 2 3 4 3 1 Bmi7 3 1 1 3 Bbmi7 2 1 1 1 4 Eb7b9 1 2 3 1 3 1 Ab13 3 1 1 3 F7b13 4 2 4 2 Bbmi7 1 3 1 4 Eb7b9 2 3 1 3 1

Ebmi9 2 4 1 3 3 1 3 1 4 Ab7b13 4 5 2 3 1 3 Dbma7 4 2 3 1 3 Gb13 3 4 4 1 3 1 Ab 3 1 1 2 3 4 2 2 2 3 4 5 6 1 1 2 2

K

G13 5 4 3 4 1 3 4 1 2 3 1 4 G7b13 3 2 3 1 2 4 3 4 5 1 3 2 3 C9 4 3 2 1 4 2 1 C7b9 2 3 4 4 2 1 3 1 4 3 1

F13 5 4 3 4 4 1 2 1 4 3 2 3 F7b13 3 2 1 3 3 1 2 3 1 3 Bb13 4 3 1 2 1 4 Bb7b13 2 3 4 2 1 3 Bbmi7 2 1 1 1 4 Eb7b9 1 3 1 3 1

L

Ab13 3 2 1 3 4 3 1 Bmi7 2 3 1 3 4 1 Bbmi7 4 5 1 3 1 3 Eb7b9 4 3 1 3 3 1 Ab13 4 1 4 1 2 F7b13 2 3 2 3 Bbmi7 4 5 1 3 1 3 Eb7b9 4 5 6 1 4 1 4

Ebmi9 6 5 2 3 1 3 4 3 1 4 Ab7b13 4 5 2 3 1 3 Dbma7 4 2 3 1 3 Gb13 3 4 1 3 1 Abma7 3 1 1 2 2 3 4 5 1 4 Eb7b9 6 4 3 1

Position IV

M

Ab13 3 4 Bmi7 5 6 Bbmi7 5 Eb7b9 4 Ab13 3 2 F7b13 1 Bbmi7 2 Eb7b9 3 4

1 4 3 1 1 2 1 4 1 2 1 4 3 1 3 4 1 3 1 4 1 2 1 4 2 1 4 2 1 3 1 4

Ebmi9 4 3 Ab7b13 2 3 Dbma7 1 Gb13 2 3 Cmi7 4 3 4 B13 3 4 Bbmi7 2 Eb7b9

2 3 1 3 3 3 1 3 1 2 3 1 1 3 1 3 2 3 1 2 1 4 1 2 3 2

N

Ab13 1 Bmi7 2 3 Bbmi7 4 3 4 Eb7b9 3 Ab13 4 F7b13 5 6 Bbmi7 5 Eb7b9 4

4 2 1 4 3 4 3 1 4 3 2 1 1 1 3 4 1 4 3 1 1 2 1 4 1 2 1 4 3 1 3 4

Ebmi9 3 2 Ab7b13 3 2 Dbma7 2 3 4 Gb13 5 4 5 Abma7 4 3 4 5 4 3 2 1

1 3 3 3 1 3 2 1 2 3 1 4 2 4 1 4 2 3 3 2 1 3 1 4 1 2 1 4 2 3 3 1

O

G13 1 2 G7b13 3 4 3 4 3 2 C9 3 1 C7b9 4 3 2 1 3

1 4 3 1 3 1 2 2 1 2 1 2 1 2 3 3 1 3 1 2 2 1 1 2 1 1 4 2 1 3

F13 2 1 F7b13 2 3 4 Bb13 3 2 1 Bb7b13 1 Bbmi7 2 Eb7b9 3 4

1 1 1 4 3 4 3 2 1 4 3 1 3 1 1 3 1 4 3 2 1 4 2 1 1 4 2 3 1 4 3 1

P

Ab13 3 4 Bmi7 5 6 Bbmi7 5 Eb7b9 4 Ab13 3 2 F7b13 1 Bbmi7 2 Eb7b9 3 4

1 4 3 1 1 2 1 4 1 2 1 4 3 1 1 1 1 3 1 4 1 2 1 4 2 3 2 1 4 2 1 3

Ebmi9 2 3 Ab7b13 2 3 Dbma7 2 3 4 Gb13 5 4 5 Abma7 4 3 4 5 6 5

1 3 4 2 4 4 3 1 2 3 1 4 2 4 1 4 4 3 3 2 1 2 3 3 2 3 2 3 2 3

Random: II - V Resolutions

Up Tempo

♩ = 220

Bbma7 Bmi7 E7 Ama7 Gmi7 C7

6 5 4 3 2 1 2 3 4 3 2 1 2 3 4 3 2 1 2 3 4 3 2 1 2 3 4

1 2 1 4 3 4 3 2 2 4 2 1 1 4 2 4 3 4 1 4 2 3 1 4 1 4 3 2 1 3 1 4

Fma7 Bmi7 E7 Ama7 Abmi7 Db7

3 5 4 3 2 1 2 3 4 3 2 1 2 3 4 5 6 5 4 3 2 1

1 2 4 1 2 4 1 4 1 4 4 2 1 4 2 4 3 1 3 1 4 1 4 2 1 4 3 1 1 4 2 1

Gbma7 Gmi7 C7 Fma7 Fmi7 Bb7

5 4 3 4 3 2 1 2 3 4 3 2 1 2 3 4 5 4 3 2 1 2 3 4

1 4 3 1 3 3 2 1 1 3 1 4 3 1 3 1 1 2 4 1 2 4 1 4 1 4 3 2 1 3 1 4

Ebma7 G7b13 Cma7

4 3 2 1 3 2 1 2 3 4 3 2 1 2 3 4

2 3 1 3 1 2 1 4 1 2 1 4 4 2 1 4

Dbma7 Bmi7 E7 Ama7 Bbmi7 Eb7

1 2 3 4 5 3 4 5 4 3 2 1 2 3 4 3 2 1 2 3 4 3

1 3 1 3 2 3 1 2 2 3 1 4 3 1 4 2 1 4 3 1 3 3 2 1 2 1 1 4 3 4 1 2

Abma7 Dmi7 G7 Cma7 Bmi7 E7

3 4 5 6 5 4 3 2 3 2 3 4 3 2 1 2 3 4 3 2 1

4 1 4 2 1 4 1 3 4 2 1 4 3 1 2 4 1 4 4 2 4 1 4 2 1 4 3 2 1 4 4 2

Ama7

1 2 1 1 1 2 2 1

II-V-I Resolution Variations

I **Ia**

Gma7 F#mi9 B7b13 Ema9

Ib

G#mi9 C#7b13 F#ma9

Ic

C#mi9 F#7b13 Bma9

Id

Ebmi9 Ab7b13 Dbma9

The initial pattern found in measure 1, over Gma7 is to be used as a departure point in all 4 of its following patterns.

These are to be seen as random departure points into various II-V-I key centers

II **IIa**

Cma7 F#mi9 B7b13 Ema9

IIb

Ebmi9 Ab7b13 Dbma9

IIc

Fmi9 Bb7b13 Ebma9

IId

Cmi9 F7b13 Bbma9

As the above, the initial pattern found in measure 1, this time over Cma7 is to be used as a departure point in all 4 of its following patterns.

These are also to be seen as random departure points into various II-V-I key centers

Position 1 (Take Note: The asterisk (*) = an open string with the 1st finger behind the note)

Staff 1: Bma7 (5 4), D7 (3 2), Gma7 (1), Bb7 (2), Ebma7 (3 4), Ami7 (2), D7 (3).
 1 2 1 4, 3 *1 2 4, *1 4 3 *1, 1 4 3 1, 3 *1 4 2 *1, 2 *1 4, 3 *1 2 4, *1 3 2 3

Staff 2: Gma7 (2 3), Bb7 (2 3 4), Ebma7 (3 4), F#7 (3 4 5), Bma7 (4 3 4), Fmi7 (3), Bb7 (2 3 4).
 4 *1 3 *1, 2 2 *1 4, 4 *1 4 2, 2 1 1 #, # 4, # 1 2 1 4, 3 1 4 1, 4 *1 2 4, 2 2 *1 4

Staff 3: Ebma7 (3 4), Ami7 (2), D7 (3), Gma7 (2 1), C#m7 (3 4), F#7 (5 6).
 4 *1 4 2 *1, 2 *1 4, 3 *1 2 4, *1 3 2 3, 4 4 3 *1, 4 *1 3 *1, 4 2 1 2, 1 4, # 1 4, # 1 4

Staff 4: Bma7 (6 5), Fmi7 (3), Bb7 (2 1), Ebma7 (3 4), C#m7 (5 4 3), F#7 (4).
 2 4 1 4, # 1 2 1 4, 4 *1 2 2, 4 2 4 2, 4 *1 4 2 *1, 2 4 *1, # 4 2 1 4, 2 3

Position 2

Staff 1: Bma7 (1 2 3), D7 (2), Gma7 (3 4), Bb7 (3 2), Ebma7 (3 2), Ami7 (1), D7 (2 3).
 1 3 1 3, 1 3 4 4, 2 3 1 4, 1 4 3 1, 1 3 1 4, 1 2 1 4, 4 2 2 1, 1 4 2 4

Staff 2: Gma7 (2 3 4), Bb7 (3 2), Ebma7 (3), F#7 (2 1), Bma7 (2 3), Fmi7 (4), Bb7 (5).
 2 3 1 4, 1 4 3 2, 1 4 3 1, 3 2 1 3, 4 1 3 1, 1 3 1 3, 1 3 4 1, 2 4 1 4

Staff 3: Ebma7 (3 2 3), Ami7 (4 5), D7 (6), Gma7 (5 6), C#m7 (4), F#7 (3).
 1 4 1 3, 1 3 1 4, 2 3 1, 2 1 4 3 4, 4 1 4 2, 1 2 1 4, # 1 3 4 1, 3 1 1 4

Staff 4: Bma7 (4 3), Fmi7 (2), Bb7 (3 4), Ebma7 (3 4), C#m7 (5 4 3 2), F#7 (3 4).
 2 4 1 4, 1 1 1 4, 4 3 4 1, 4 2 1 1, 1 3 1 4, 3 4 3 1, 4 3 1 1 3 1

Position 3

Position 3 musical notation, featuring four staves of guitar fretboard exercises. Each staff contains a sequence of notes with corresponding chord diagrams and fingering numbers (1-4) written above or below the notes. The chords and their positions are: Bma7, D7, Gma7, Bb7, Ebma7, Ami7, D7, Gma7, Bb7, Ebma7, F#7, Bma7, Fmi7, Bb7, Ebma7, Ami7, D7, Gma7, C#mi7, F#7, Bma7, Fmi7, Bb7, Ebma7, C#mi7, F#7.

Position 4

Position 4 musical notation, featuring four staves of guitar fretboard exercises. Each staff contains a sequence of notes with corresponding chord diagrams and fingering numbers (1-5) written above or below the notes. The chords and their positions are: Bma7, D7, Gma7, Bb7, Ebma7, Ami7, D7, Gma7, Bb7, Ebma7, F#7, Bma7, Fmi7, Bb7, Ebma7, Ami7, D7, Gma7, C#mi7, F#7, Bma7, Fmi7, Bb7, Ebma7, C#mi7, F#7.

Position 5

The musical score is organized into several sections:

- Melodic Lines 1-4:** Each line contains a sequence of notes with fret numbers (1-6) and accidentals. Chord symbols above the notes include Bma7, D7, Gma7, Bb7, Ebma7, Ami7, Fmi7, and F#7.
- Melodic Lines 5-6:** Similar to the first four lines, with notes and fret numbers. Chord symbols include Ebma7, Ami7, D7, Gma7, C#mi7, and F#7.
- Melodic Lines 7-8:** Continuation of the melodic sequence. Chord symbols include Bma7, Fmi7, Bb7, Ebma7, C#mi7, and F#7.
- Chord Diagrams (Lines 9-13):** A series of chord diagrams for various chords: Bma 6/7, D13, Gma7, Bb13, Ebma 6/7, Ami9, D7 (9), Gma 6/7, Bb13, Ebma7, F#13, Bma6/9, Fmi9, Bb7, Ebma 6/7, Ami9, D7 (b9), Gma 6/7, C#mi9, F#9, and Bma 6/7.
- First Alternative (Line 14):** Labeled '1.', it shows chord diagrams for Bma 6/7, Fmi9, Bb9, Ebma 6/7, F#7 sus, and F#13.
- Second Alternative (Line 15):** Labeled '2.', it shows chord diagrams for Fmi9, Bb9, and E 6/9.

SECTION V

The use of Tritones, and their Derivatives
(the effect of Consonance and Dissonance)

Tritone Substitutions

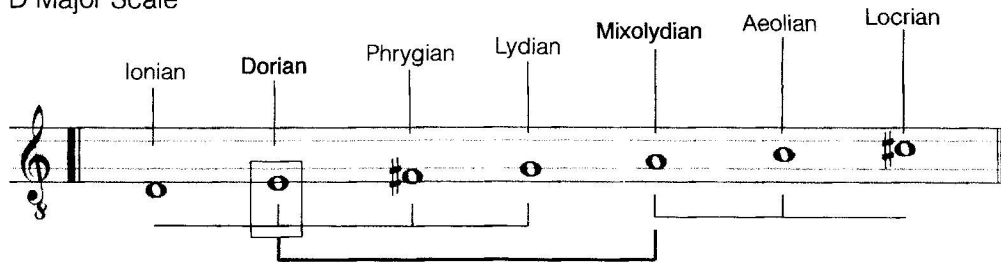
Consonance and Dissonance

Improvisationally the V7th chord, along with its various alterations subjectively differs from player to player. Objectively like so many other frameworks it contains oppositional types of substitution. From the following D Major scale the modal source of the pattern reveals itself starting from the perfect 5th of the V7th in question:

eg. 38

V7 Substitutions

D Major Scale



With the first four tones emerging from their Dorian location, followed by the first two of them in reverse, (F#, and E in retrograde) the pattern is formed. Since this is a description of an improvisation that was originally formed in performance, and is now being analyzed modally in a scale form.

Geometrically circumscribing intervals immediately reveals more dimension than if we view them musically on a horizontal staff. The next example displays the Tritone interval in a way that's similar to a number of applications, (north, east, south, and west, or day, and night, etc.). They are the inversion of each other, and as such can be viewed harmonically as either consonant, or dissonant.

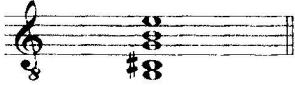
The idea of consonance, and its opposite, (dissonance) is very interesting in its application to substitutional voicings for V7th chords. For instance the parental forms themselves used on the basis of the natural "siblings" that unfold provide an interesting view of two minor triads that are a perfect tritone apart. The first of the two is based on a consonant identity, while the second is upon a dissonant identity.

The transformation of the diminished parental form, (in its initial phases) produces two separate variations. As initially stated, by lowering any tone within it ½ step, that tone becomes the root of a V7th chord. By raising any tone ½ step, that tone becomes the V7th of a Ø, (Mi7thb5) chord.

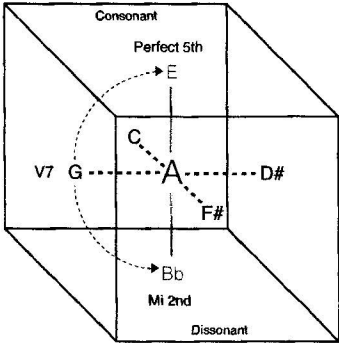
The use of both of these derivatives in the key of A reveals the Tritone and its effect regarding either consonance, or dissonance.

eg. 39

C#mi7b5 / A




Emi



Bbmi

A7b13b9



In example 39 two chord forms are displayed. The upper form is C#mi7b5 / A, while the lower of the two is an A7b13b9. In the upper, if we remove the pedal tone, (A) and the root, (C#) what's left is an E minor triad. In the lower, if we remove the pedal tone, (A) and the V7th, (G) now what's left is a Bbmi triad. On both of these chord forms a minor 7th improvisation takes place upon those topics. What's also interesting is the compatibility of the upper form with consonant variations like A7, A9, A11, A13, while the lower form is more compatible with dissonant forms like A7#5, A7b5, A7#9, A7b9, etc.

Of course there are two more variables that comply with the same technique within this family of improvisational options, and those are G minor, and D# minor derivatives.

It's these mi 3rd positions that allow an endless series of interfaced improvisations that create random results.

Example 40 displays the tritone series chromatically in a circular array, and by doing so it reveals a number of similarities found in other applications, allowing various forms of polarity to be viewed either as consonance, or dissonance in a musical format. A simple example would be the interpretation of something like day, and night to be seen as bright, and dark, or major, and minor, consonant, or dissonant. Also, keep in mind that various forms of definition have a tendency to create greater continuity when viewed as different manifestations of a collective meaning.

(For the sake of clarity the accidentals used on chord titles remain identical, even though regarding the keys that they are in, certain inversions would normally use different names, (b5, #11, etc.).

As described in prior examples, the tones within these two chords are the same. The only difference is that in the following example they're the "upside down" inversions of each other.

eg. 42

D#7#11 A7#11

12 11 10 9 8 7 6 5 4 3 2 1

2 vertical tritone inversions

Improvisational interpretations germinating from the roots of these forms, (the simple Mi 7th themes, we've been using spring from their perfect 5ths: A7 = Emi7, while D#7 = Bbmi7. A practical control of consonant, or dissonant complexions occurs when using them in this way, as displayed in the following linear example:

eg. 43

used over
A7, A9, A11, A13, etc

Pattern I: Emi7
Consonant:

used over
A7#11, A7b13, A7#9, A7b9, etc

Pattern I: Bbmi7
Dissonant:

When using the mi7th form, (as a substitution for the V7th chord what seems to be the most effective is at a perfect 5th from the root. Likewise, what's most effective for its application on the odd alterations is located a minor 2nd from the root. When these "minor triads are seen on two specific chord forms in the key of A they appear as follows:

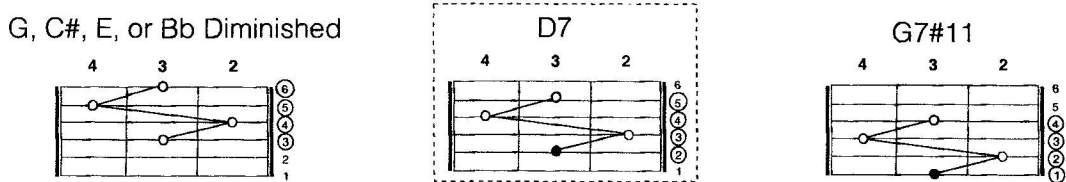
eg. 44 Emi / A

5 4

Emi / A

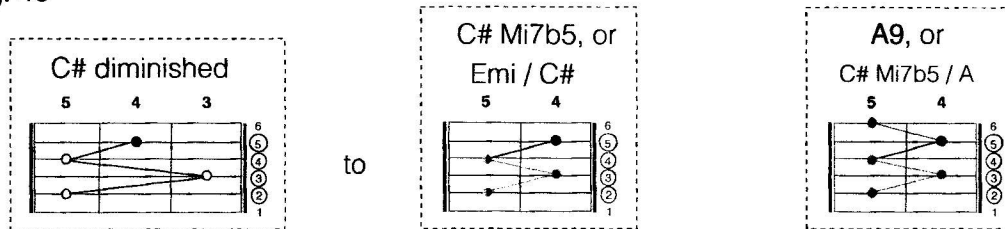
In example 44 the A9 form was displayed as Emi / A, (the Emi being a separate triad). The phenomenon itself is a direct product of the initial study of the diminished parental form, (when it was transposed vertically into the second adjacent set of strings). Of the three forms in that process:

eg. 45



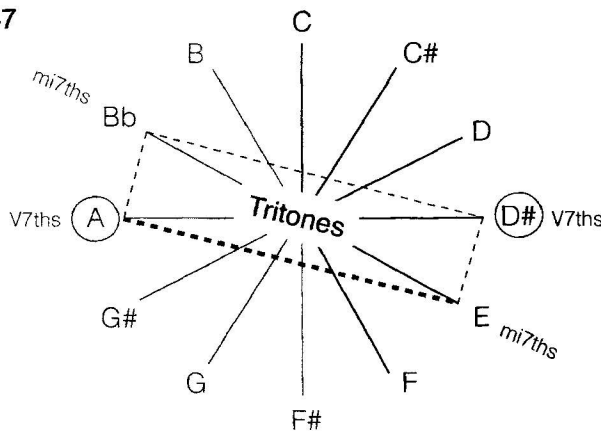
Of the two variations that come from either ascent, or descent of its chosen root, if chosen as A: C# diminished chord, with B: ascent of the tone Bb to B natural, it then becomes C: (the third alteration) C#mi7b5, (which can also be viewed as a polychord. Emi / C#)

eg. 46



Finally, the two structures are complete and can be viewed in the following way:

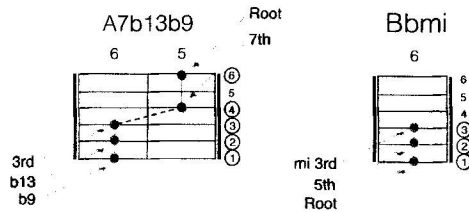
eg. 47



Beginning with the bottom line of the slanted rectangle within the circle of tritones the A (7th), or any one of its consonant alterations, (A7, A9, A13th, etc.) joins with an E (mi7th), at its Perfect 5th. Of those alterations the A9 chord, (as seen above) reveals the reason for this successful application.

As example 47 revealed (from the perfect 5th in the key of A) the use of a mi7th substitution, on specific alterations for consonant textures, so does the following example, (based upon the Bb, (a mi2nd from the root, in the key of A) only this time for the opposite effect. In the next example, with a more dissonant chord form, (A7b13b9) the following appears:

eg. 48

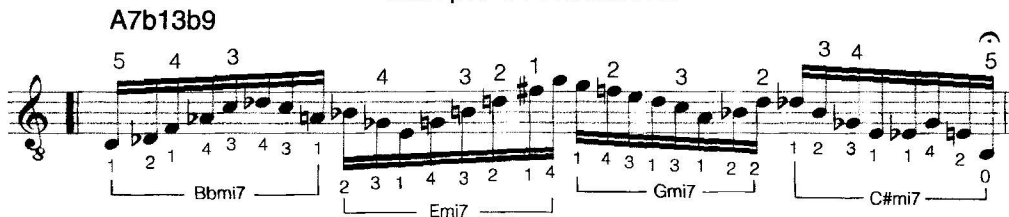


By removing the Root, and the 7th, (in the key of A) what's left is a Bb minor triad. As a new substitution, (Bbmi7th) for any of the more dissonant alterations, (7#9, b9, #5, b5, etc.).

Along with what's been discussed regarding those elements that are products of the b5, (tritone) variations, there's also mi 3rd points of intervallic division from the lowest to higher points in a diminished ascent, and these additional topics are successful when interfaced in random orders of multiple substitutions interfaced within ongoing patterns.

eg. 49

Multiple Substitutions



The four examples seen above in example 49 are actually the initial component parts of a diminished form, this time interfaced in sections. In real time performance improvisations of this nature are moving in various combinations that are constantly "shuffled" at random producing an endless number of variations.

Substitutions are literally replacements that are designed to cause chosen topics, (that seem complex) to be revealed in a simplistic way. When we view lead sheets we sometimes find it difficult to improvisation-ally interpret certain types of chord forms due to the names they're

given. An example of this can be seen in the name that's chosen for a chord form. A good example would be a name like Dbmi / D. As a polychord one of the first voicings that comes to mind is the following example:

eg. 50

Dbmi / D Dbmi / D E13

The image shows three musical staves, each with a treble clef and a key signature of two flats. Staff A is labeled 'A' and 'Dbmi / D'. It contains a polychord with notes Gb, Ab, Bb, C, D, and Eb. Staff B is labeled 'B' and 'Dbmi / D'. It contains an inverted polychord with notes Ab, Bb, C, D, Eb, and Gb. Staff C is labeled 'C' and 'E13'. It contains an E13 chord with notes G, Ab, Bb, C, D, Eb, F, and G.

In form A, certain players would find its dissonance confusing to even interpret what should be improvised against it. Of course it can be inverted into form B, (a more compatible voicing) but even though the sound of that inversion is more harmonious it still remains complex due to the name it's been given. In form C what's been added, (as a pedal tone, just for the sake of its true identity) automatically simplifies it. It's now an inversion of an E13, (quite a common chord form). The substitution now used against that chord is Bmi7th.

Decoding

The decoding that taking place in the following study will use a melodic topic that was introduced earlier, (as a line form in Section III / Example 33). It will now be applied to each of the chord forms in the upcoming "lead sheet" of a composition with various changes. The purpose of the following two pages is to reveal the decoding of a complex series into a simple replacement. The composition used for this demonstration is a ballad titled "Welcome to a Prayer". In the first example it's seen as a common lead sheet with the changes above its melody. The second, (on the opposite page) is the decoding of these changes into one simple substitution, (the mi7th). Also to be kept in mind is the use of "multiple substitutions", (as defined in example 49).

These types of variation are what embodies the essence of improvisation. Our use of intervals, along with melodic phrases that are generated directly thru our emotions to create what's most important, an artistic power or force that supports our intentions.

SECTION VI

Complexity to Simplicity

The transfer of chordal frameworks
into unified substitutions.

Theme

("Welcome to a Prayer")

Ballad :

Pat Martino

C7b9 **A** Fmi9 Ab/Bb Ebmi9 Ab7#5 Dbmi9

(Guitar)

Cma7/A Cma7/G Gbmi7b5 1. B7b9 A9b5 Dmi9 G13b5 B7#5

4 5 6 7 8

B Emi9 A7b5 Dbmi7b5 Gb7#5 Bmi9 E13 (Dbmi / D) A13b9 A7#5

9 10 11 12

Dmi9 G13b5 Cmi9 Gb13b5

13 14 15 16

2. B7b9 Bmi11b5/E Cma7b5/E Dbmi7b5/E C7b9 3. Bmi7#5 / E

6 7 8 (solo) >

Final Ending

Chords & Substitutions

("Welcome To A Prayer")

Ballad:

Chords: *C7 (b9)
Substitutions: Dbmi7

A Fmi9 Fmi7 Ab / Bb Fmi7 Ebmi9 Ebmi7 Ab7(#5) Ami7 Dbmi9 Dbmi7

Cma7 no 5th / G Cma7 no 5th / A F#mi7 (b5) Ami7 Ami7 Ami7

1. B7 (b9) Cmi7 Dmi9 Bbmi7 A7 (b5) Dmi7 G13 (b5) Abmi7 B7 (#5) Cmi7

B Bmi7 (#5) / E Emi7 A7 (b5) Bbmi7 Dbmi7 (b5) Emi7 Gb7 (#5) Gmi7 Bmi9 Bmi7 Dbmi / D ... (E13) Bmi7 A13 (b9) Bbmi7 A7 (#5) Bbmi7

Dmi9 Dmi7 G13 (b5) Abmi7 Cmi9 Cmi7 *Gb13 (b5) Dbmi7

2. B7 (b9) Cmi7 Bmi11 (b5) / E Dmi7 Dbmi7 (b5) / E Emi7 Cma7 (b5) / E Ami7 Cma7 (b5) / E Ami7

3. Bmi7 (#5) / E Emi7

Final

Any scalular module, or number of them can be attached to this system. Variations of them through their transposition, as well as the number of tones in chosen scales, or melodic groups multiplies the process exponentially.

Here's another example of application. I had a student interested in the composition Giant Steps. In addition to his study of the song itself, I including linear substitutions thru its chordal structures. The study was further extended in the following way ... the topic, for its motif was explored using three words: Coltrane, (name) Tenor, (instrument's range) and Blue, (from the album "Blue Trane"). Their transfer into melodies came from an alphabetic interface using the Aeolian Mode:

eg. 53

A Minor

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7 | | | | | | | 7 | | | | | | | 7 | | | | | 5 | | | | | | |
| Letters: | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| Scale: | A | B | C | D | E | F | G | A | B | C | D | E | F | G | A | B | C | D | E | F | G | A | B | C | D | E |

Letters: C O L T R A N E T E N O R Resolution

Tones: C A E F D A G E F E G A D E D E G A

Letters: B L U E

Tones: B E G E

Examples 1, and 2 move toward a final segment serving as the resolution of this process, and in both cases remain as chosen improvisations. Also, each of these examples were selected as modal variations in the key of C.

Alphabetic Junction

Under any conditions imagination produces interesting alternatives. For the sake of composition there are times when creative continuity seems to fade, and becomes momentarily replaced with emptiness.

It's rewarding using musical techniques to embrace other forms of language. In taking the english alphabet and displaying it above a scalular series, collectively the two separate systems become a singular device that serves to translate one language of words into another of melodies.

eg. 51

C Major

| | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 7 | | | | | | | 7 | | | | | | | 7 | | | | | | | 5 | | | | |
| Letters: | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
| Scale: | C | D | E | F | G | A | B | C | D | E | F | G | A | B | C | D | E | F | G | A | B | C | D | E | F | G |

The following dichotomy proves to function as a good example. The words " Beautiful ", and " Ugly " now produce the following tonal structure:

eg. 52

Letters: B E A U T I F U L | U G L Y | Resolution

Tones: D G C B A D A E G | B B G F E

T 7 8 8 7 10 7 10 7 8 | 12 4 3 6 5

A

B