

Understanding Harmony

(Major Diatonic Harmony)

An approach to understanding jazz and
popular music

Third Edition

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(Part One - Major Diatonic Harmony)

An approach to understanding jazz and popular music

Understanding musical harmony can be intimidating for the uninitiated. The subject, however, is not so complex as it probably appears from the outside. Many concepts are based in formulas and ideas. By using these formulas and ideas consistently we can learn and apply them. Once concepts are explained and exercises are done to familiarize the student, the information can become second nature with steady use. There is nothing especially difficult or mysterious about this information, nor should it be difficult to use. This book attempts to explain the basics of Western harmony in plain language starting by defining the elements of harmony and then using these elements to construct scales and chords. No music notation is used, only physical comparisons, diagrams and descriptions. This approach aids in conceptualizing harmony for popular music composition and improvisation.

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The Elements of Harmony

Let's begin by looking at some important musical terms we need to know to get started.

INTERVAL - the harmonic distance between pitches.

How do we measure these distances? We measure them with the most basic intervallic measurement in Western music (the music we listen to) the **HALF STEP** (no, its not some new, bizarre country and western dance). The **HALF STEP** is also the physical distance of one fret to the next on a guitar, or one key to the next on a piano. The next biggest interval we can measure is the first cousin of the half step, the **WHOLE STEP**, and as you might have imagined is the distance of two frets on a guitar finger board or two keys on a piano. With these two intervals, the half step and the whole step, we can measure any group of pitches we like, and figure out its sound and function.

Western music is based on the **12 TONE SYSTEM** in which an **OCTAVE** is divided into 12 half steps, or a **CHROMATIC SCALE**. An octave is the pitch that is reached when a frequency is doubled (and the scale sequence repeats). On the guitar fingerboard, octaves for open strings are sometimes marked by double dots 12 frets up from the nut. On a piano the 12 notes form a physical pattern which then repeats.

A **SCALE** is a series of intervals in a sequence completing an octave. Probably the most recognizable scale to us is the **MAJOR SCALE**.

Using the notation from the box below, the Major Scale is built like this:

Whole Step = W or \square	Half Step = H or ∇
-----------------------------	---------------------------

W W H W W W H
 $\square \square \nabla \square \square \square \nabla$

or

do re mi fa sol la ti do
 $\square \square \nabla \square \square \square \nabla$

Notice the relationship of 2 sets of $\square \square \nabla$ seperated by one \square

$\square \square \nabla - \square - \square \square \nabla$

or

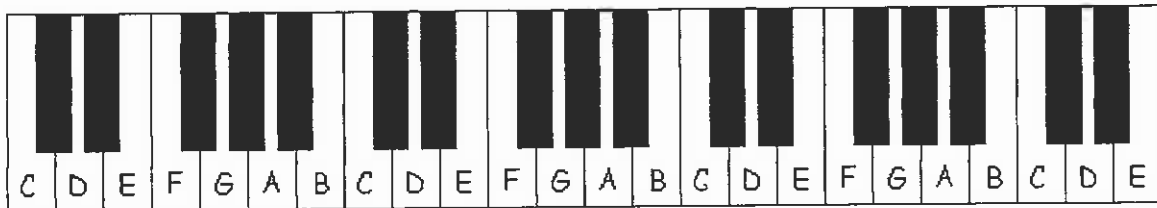
do re mi fa sol la ti do
 $\square \square \nabla - \square - \square \square \nabla$

Elements, cont.

If we start on the note "C" and follow the major scale formula of steps and half steps,



This is because the distance from E to F, and from B to C is naturally a half step. If you look at a piano keyboard you will notice there are no black keys between these two pairs of notes.



Memorize that the distance from B to C and E to F is a half step. This also means that all other consecutive notes are a whole step apart. For example:

- A to B is a whole step
- C to D is a whole step
- F to G is a whole step, etc.

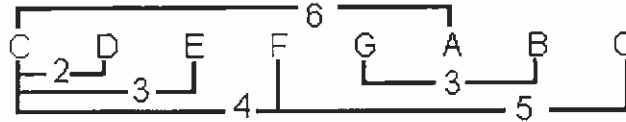
Remember:

E to F	Half Step
B to C	Half Step

All other consecutive intervals	Whole Step
---------------------------------	------------

Interval Names

Any interval can have a "name" (and every interval does!). Instead of names like Joe or Bob or Fred, they're named primarily by the number of notes in their span.



C to D is a 2nd (C-D), C to E is a 3rd (C-D-E), C to F (C-D-E-F) is a 4th
1-2 1-2-3 1-2-3-4

Interval names also include another word; a sort of describer, or qualifier. This qualifier tells you the quality of the interval (2nd, 3rd, 4th, etc.) by giving its exact size. This means every interval name has 2 parts - one part (the number) is its basic size and another part (its quality) is its exact size. Intervals also present themselves as shapes on the keyboard or string instrument fingerboard. Here's a list of those qualities:

Qualities of Intervals

Major
Minor
Perfect
Diminished
Augmented

These qualities are added before the basic size to give us interval names like:

Major 3rd
Minor 6th
Perfect 4th
Diminished 5th
Augmented 5th

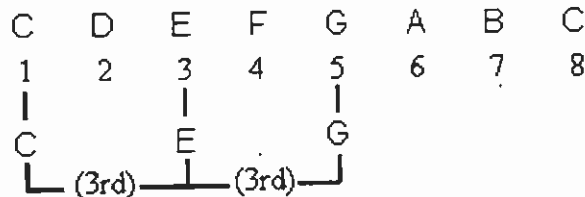
We'll be discussing quality names and what they mean later so familiarize yourself with any that you may not have heard of before.

Not only can we measure an intervals size and quality, we can also hear it! Sometimes it takes a little training, but it can be done! Many musicians who play by ear, are frequently acquainted with the sound qualities of intervals but haven't learned to name them.

The Big Cool Number 3

The system of harmony that we use is built on intervals of a 3rd. Its super secret code name is tertiary harmony, named after a group of Greeks called the Tertians (just kidding).

The simplest types of chords we can build are called triads, so called because they are made of 3 notes. The most common way to build triads is to select them from a scale. For instance, to build a C major triad, we can select the 1st, 3rd, and 5th notes of the C major scale (2 consecutive intervals of a 3rd).



We can build even more chords in the key of C major by starting on each note of the scale and building in 3rds. The chords that we build from a scale are said to be diatonic to that scale or key. Here are the diatonic triads of C Major.

I chord: C major (I Maj)



II chord: D minor (II min)



III chord: E minor (III min)



IV chord: F major (IV Maj)



V chord: G major (V Maj)



VI chord: A minor (VI min)



VII chord: B diminished (VII dim)



Every major key has this set of chords:

I II - III - IV V VI - VII^o

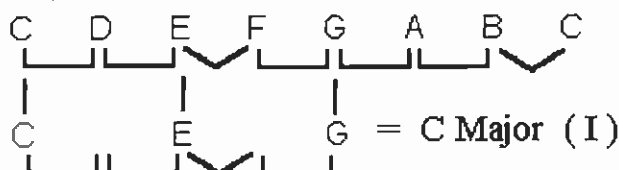
Qualities of Triads

You probably noticed that some of those diatonic triads on page 3 were major, some were minor, and one of them was diminished.

Q: How do we tell if a triad is major, minor, diminished, or augmented?

A: 1) by its sound "quality" and/or
2) by analyzing its basic elements.

Let's take a closer look at these diatonic triads and break them down into their most basic elements (steps and half steps). Here's the first triad in the key of C major.



We know that from C to E is a 3rd and from E to G is a 3rd as well. However, these two 3rds are not quite the same size.

C to E is two whole steps creating a major 3rd.



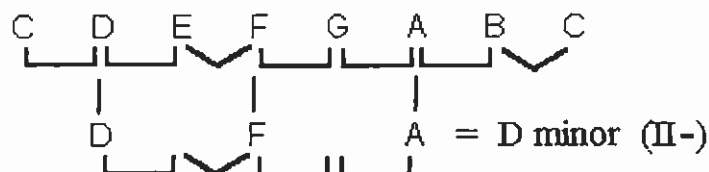
E to G is one whole step and one half step creating a minor 3rd



- When the first interval of a triad is a major 3rd and the second interval of a triad is a minor 3rd we can say (and hear) that the triad is major.
- When the first interval of a triad is a minor 3rd and the second interval of a triad is a major 3rd we can say (and hear) that the triad is minor.

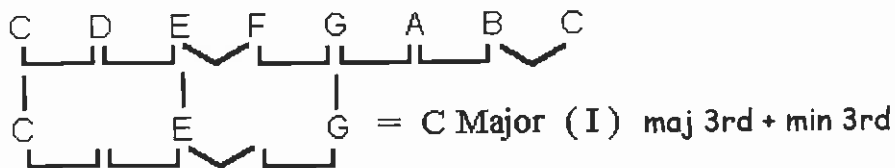
Does all this seem complicated? Well it's really pretty simple. If the first interval of a triad is a maj 3rd then the triad is major and if the first interval of a triad is a minor 3rd the triad is minor!!

Let's look at the second diatonic triad in the key of C major:

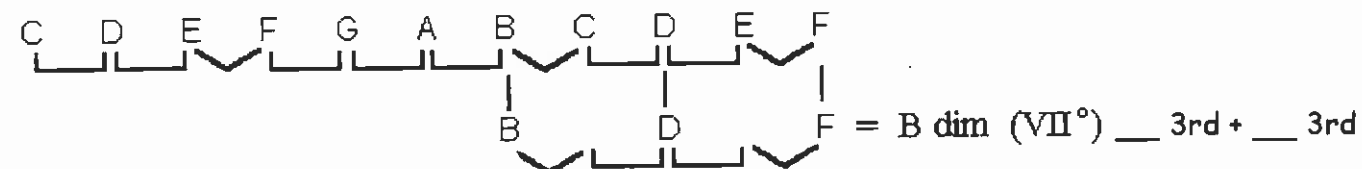
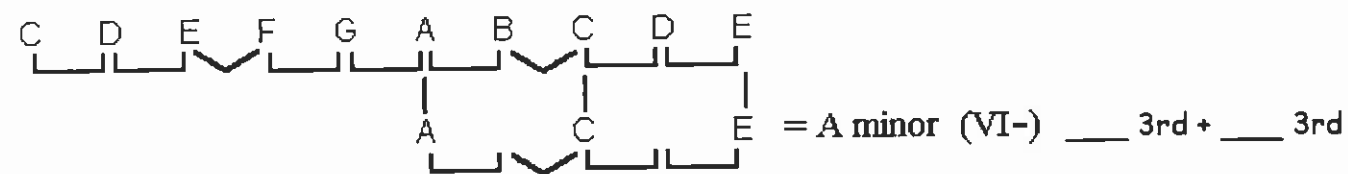
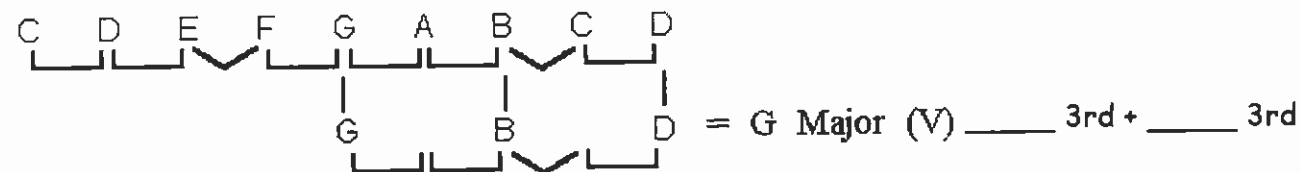
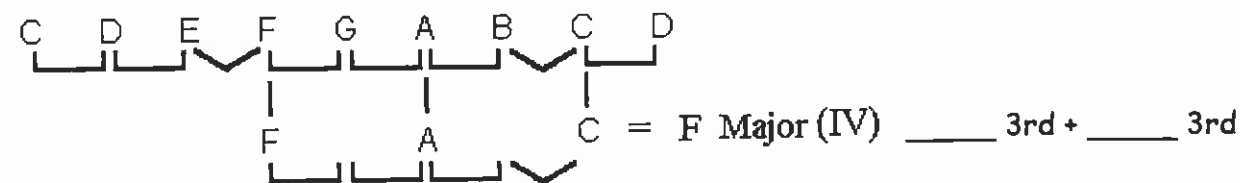
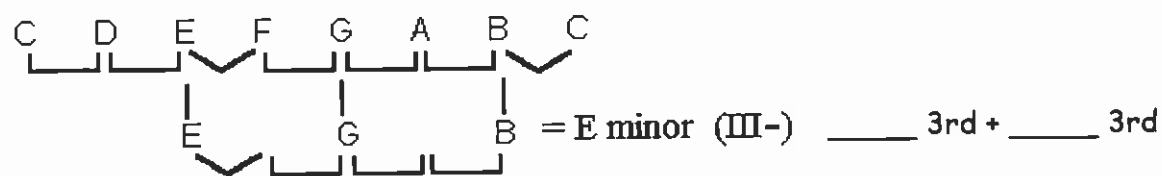
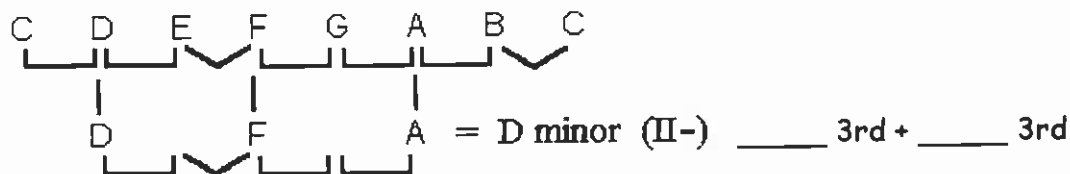


See!...The minor 3rd interval comes first, so the triad is minor.

Diatonic Triads in the Key of C Major



Fill in the blanks with "maj" for major or "min" for minor to show the size of each interval making up the triad.



You can see that the VII chord is two minor 3rds grouped together. It's smaller than a major or minor triad. This is the famous **diminished triad**!

The Accidental (sharps and flats)

Sharps (\sharp) make any pitch higher by a half step.

Flats (\flat) make any pitch lower by a half step.

Naturals (\natural) negate any sharp or flat for that specific pitch.

Double sharps (\times) and double flats ($\flat\flat$) double those functions.

The idea of using these accidentals is so we can adjust individual notes to be higher or lower in pitch. This lets us to do things like:

- use keys besides C Major or
- use pitches that don't happen to be diatonic to the key we're in.
- alter the size of intervals

By using accidentals we can start on any note we choose and still keep the intervallic relationship of a Major scale :



Here is a G scale with no accidentals:



By "sharping" the F we have the G Major scale:



Here is an F scale with no accidentals:



By "flattening" the B we have the F Major scale:



Some notes can be called enharmonic. That's when two notes have different names and the same pitch. For example:

- A sharp and B flat are enharmonic.
- B sharp and C natural are enharmonic.

The Major Scales

By knowing the intervals in a major scale and the functions of accidentals, we can build a major scale from any note we choose. Build major scales from the notes given.

* Be sure to work from left to right and build in steps and half steps.



"Sharp" Keys

"Flat" Keys



Interval and Triad Terminology

Although intervals and triads are two different subjects, we use the same words to describe their qualities - major, minor, augmented and diminished. This can be a little confusing. The following explanation should help you keep it straight in your mind which is which and why they are names as they are. Here is a description of each as they apply.

Qualities of Intervals

Major, Minor, Perfect, Augmented and Diminished

There are two "families" of intervals: 1) Perfect and 2) major/minor

Perfect Intervals

Perfect intervals are thought of as having one "normal" size.

Going beyond the "normal" size of a perfect interval by a half step gives us:

Augmented - larger (add to)

Diminished - smaller (subtract from)

The intervals that are "normally" perfect are:

Perfect unisons (same pitch)

Perfect 4ths

Perfect 5ths

Perfect octaves

- If an interval is perfect, then one half step larger than perfect is augmented and one half step smaller than perfect is diminished.
- Examples: a "diminished" 5th is a half step smaller than a "perfect" 5th. An "augmented" 4th is a half step larger than a "perfect" 4th.
- The word "perfect" is commonly omitted when we talk about unisons, 4ths, 5ths, and octaves because that is their "normal" size. Therefore it is only necessary to describe them with "augmented" or "diminished" when they are altered.

Major/Minor Intervals

The intervals that are normally major or minor are all the rest:

Major/minor intervals have two "normal" sizes.

maj/min 2nds

maj/min 3rds

maj/min 6ths

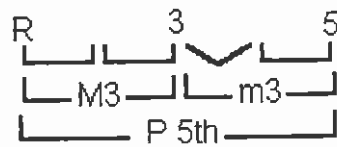
maj/min 7ths

- These intervals (2nds, 3rds, 6ths, and 7ths) should always be prefixed with "major" or "minor" when talking about them as both terms describe their "normal" size.

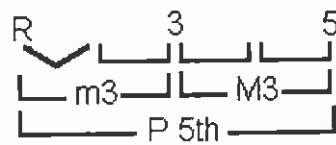
Qualities of Triads

major, minor, augmented and diminished

Major triad = maj 3rd + min 3rd



Minor triad = min 3rd + maj 3rd

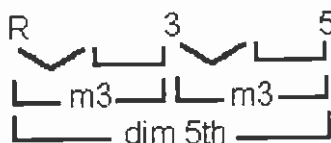


Augmented triad = maj 3rd + maj 3rd



Notice in the augmented triad that the distance from the root (R) to the fifth (5) is no longer "perfect". By stacking a major 3rd with a major 3rd, this has caused that interval to be increased by a half step, making it "augmented". This gives the augmented triad its name.

Diminished triad = min 3rd + min 3rd



Notice in the diminished triad that the distance from the root (R) to the fifth (5) is no longer "perfect". By stacking a minor 3rd with a minor 3rd, this has caused that interval to be decreased by a half step, making it "diminished". This gives the augmented triad its name.

Fill in the notes of these major scales and build and name their diatonic triads. Use the example on page 6 as a guide. It's not necessary to write in the scale for each chord although space is provided to do so if it helps you. Simply spell and name the diatonic triads in each key.

Diatonic Triads in the Key of G Major

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, a G major triad is shown with notes G, B, and D. The text "= Major (I)" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, an A minor triad is shown with notes A, C, and E. The text "=" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, a B minor triad is shown with notes B, D, and F#. The text "=" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, a C major triad is shown with notes C, E, and G. The text "=" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, a D minor triad is shown with notes D, F#, and A. The text "=" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, an E minor triad is shown with notes E, G, and B. The text "=" is written to the right of the triad.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are G, A, B, C, D, E, F#, G. Below the staff, an F# minor triad is shown with notes F#, A, and C. The text "=" is written to the right of the triad.

Diatonic Triads in the Key of D Major

Fill in the Major scale and build and name the diatonic triads.
Use the example on page 6 as a guide.

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes D, E, and F# to a triad on a lower staff. The triad is labeled "= Major (I)".

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes E, F#, and G to a triad on a lower staff. The triad is followed by an equals sign (=).

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes F#, G, and A to a triad on a lower staff. The triad is followed by an equals sign (=).

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes G, A, and B to a triad on a lower staff. The triad is followed by an equals sign (=).

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes A, B, and C# to a triad on a lower staff. The triad is followed by an equals sign (=).

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes B, C#, and D to a triad on a lower staff. The triad is followed by an equals sign (=).

A musical staff with a treble clef and a key signature of one sharp (F#). The scale notes are D, E, F#, G, A, B, C#. Below the scale, three vertical lines connect the notes C#, D, and E to a triad on a lower staff. The triad is followed by an equals sign (=).

Diatonic Triads in the Key of A Major

Fill in the Major scale and build and name the diatonic triads.
Use the example on page 6 as a guide.

= _____ Major (I)

= _____

= _____

= _____

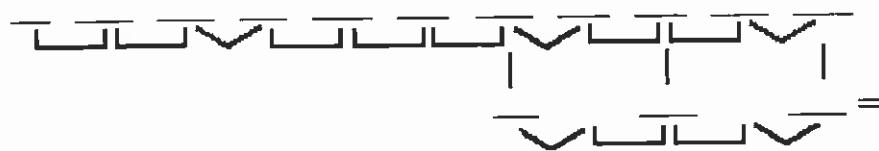
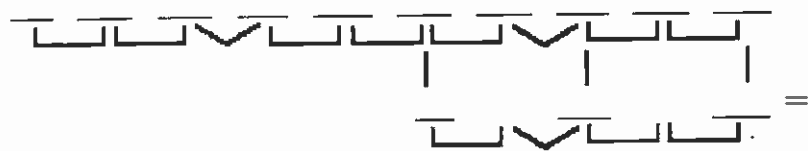
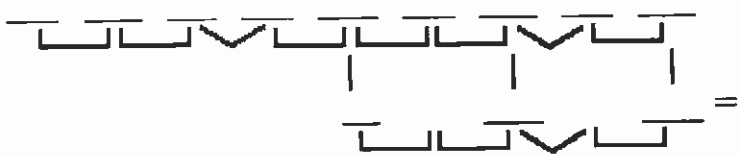
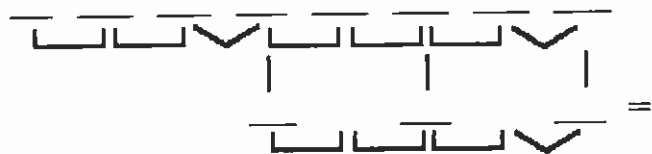
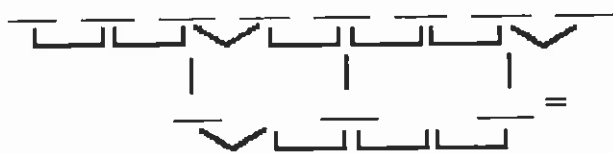
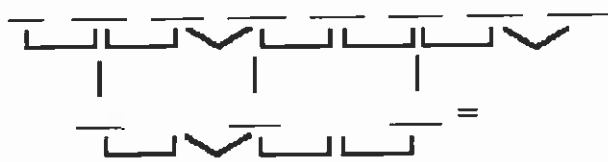
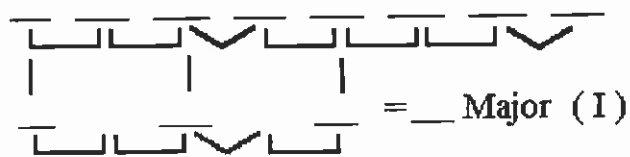
= _____

= _____

= _____

Diatonic Triads in the Key of F Major

Fill in the Major scale and build and name the diatonic triads.
Use the example on page 6 as a guide.



Diatonic Triads in the Key of Bb Major

Fill in the Major scale and build and name the diatonic triads.
Use the example on page 6 as a guide.

Example: A staff with a major scale (C-D-E-F-G-A-B) and a triad (C-E-G) below it, labeled "= Major (I)".

Staff with a major scale and a triad below it, followed by an equals sign.

Staff with a major scale and a triad below it, followed by an equals sign.

Staff with a major scale and a triad below it, followed by an equals sign.

Staff with a major scale and a triad below it, followed by an equals sign.

Staff with a major scale and a triad below it, followed by an equals sign.

Staff with a major scale and a triad below it, followed by an equals sign.

Diatonic Triads in the Key of Eb Major

Fill in the Major scale and build and name the diatonic triads.
Use the example on page 6 as a guide.

= Major (I)

=

=

=

=

=

=

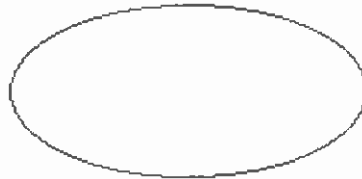
Functions of Chords in a Key

Each chord in a key (I, II, III, IV, V, VI, and VII) has a function. You could think of this function as a "job" or a "role". In classical music each diatonic chord is described with its own function. In jazz and popular music we view all chords in a progression as having one of only three function. These three functions are: tonic, subdominant, and dominant. They may be described like this -

- Tonic - is at rest and easily moves to any other chord
- Subdominant - adds some tension to a progression and "wants" to either resolve to tonic or "become" dominant.
- Dominant - Very strong tension and "wants" to release or resolve to tonic or become subdominant.

We can also relate the three types of chords as an elastic or rubber band in different states.

When the rubber band is relaxed it is like a tonic chord.



When it is somewhat stretched it is like a subdominant chord.



When it is stretched to near breaking point it is like a dominant chord.



The chords we ordinarily think of as being tonic, subdominant, and dominant are:

<u>Tonic</u>	<u>Subdominant</u>	<u>Dominant</u>
I	IV	V

You should recognize these as the major chords diatonic to a major key. The rest of the diatonic chords in a major key then become substitutes for the "basic" tonic, subdominant and dominant chords.

<u>Tonic</u>	<u>Subdominant</u>	<u>Dominant</u>
I	IV	V
III-	II-	VII ^o
VI-		

Harmonic Analysis

Analyze these chord progressions. Assign each chord the appropriate roman numeral of the scale degree. Start with the last chord in the progression and work toward the beginning. Be sure to indicate the function of each chord - Tonic(T), Subdominant(S), or Dominant(D). All exercises are in C major. The slashes represent bar (measure) lines. Playing these exercises (in any key) will help you understand chord functions. The chords in parentheses are "turn around" chords. These are played when you want to go back to the beginning.

Example:

C /F /G /C //

Would be analyzed like this:

C (I,T) /F (IV,S) /G (V,D) /C (I,T) //

Exercise 1

/C / /F /C /
 /C / /G / /
 /C / /F /C /
 /C /G /C /(G) //

Exercise 2

/C /Am /Dm /G /
 /C /Am /Dm /G /
 /F / /C / /
 /F / /G / /
 /C /Am /F /G /
 /F /G /C /(F G) //

Exercise 3

/C /G /G /C /
 /C /F /C G /C //

Exercise 4

 /C /Dm /Em /Dm /
 18 /F /G /C G /C //

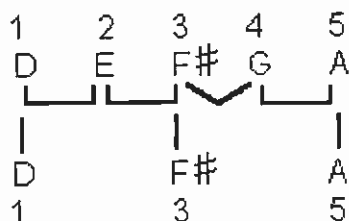
Spelling Chords (Triads)

It's important to use the correct letter names of notes when spelling a triad in order to understand the relationships of the notes to the chords. For example:

A Dmaj triad is spelled D F #A

The F# is called F# and not Gb because a Dmaj triad must have a Root, 3rd, and 5th.

"F" is the 3rd note from D in a scale sequence.



Triads are the basis for our entire system of harmony. They are the building blocks for using and understanding any and all parts of everyday western harmony. Therefore it is a good idea to understand and memorize all the triads.

Understanding and Memorizing the Triad System

Look at triads as three different groups:

<u>GROUP ONE</u>	<u>GROUP TWO</u>	<u>GROUP THREE</u>
(major)	(minor)	(diminished)
C E G	D F A	B D F
F A C	E G B	
G B D	A C E	

Group 1 (major) triads (C, F, and G major) are the I, IV, and V chords in the key of C. They're more or less "born" major.

To keep the major quality in a Group 1 triad when starting on a root note a half step higher or lower, add that same accidental to the 3rd and 5th as well.

$$C^{\flat} \text{Maj} = C^{\flat} E^{\flat} G^{\flat} \qquad F^{\sharp} \text{Maj} = F^{\sharp} A^{\sharp} C^{\sharp}$$

To make them minor in quality, make sure the 3rd is a half step lower than the root and 5th.

$$C \text{ minor} = C E^{\flat} G \qquad F \text{ minor} = F A^{\flat} C$$

To make them diminished in quality, make sure the 3rd and the 5th are a half step lower than the root.

$$C \text{ diminished} = C E\flat G\flat$$

$$G \text{ diminished} = G B\flat D\flat$$

To make them augmented in quality, make sure the 5th is a half step higher than the root and 3rd.

$$C \text{ augmented} = C E\sharp G\sharp$$

$$F \text{ augmented} = F A\sharp C\sharp$$

Here is the formula for Group One Chords:

	diminished	minor	major	augmented
Group One	↓3 ↓5	↓3	-----	↑5

<u>GROUP ONE</u>
(major)
C E G
F A C
G B D

<u>GROUP TWO</u>
(minor)
D F A
E G B
A C E

<u>GROUP THREE</u>
(diminished)
B D F

Group 2 (minor) triads (D, E, and A minor) are the II, III, and VI chords in the key of C. They're "born" minor.

To keep the minor quality in a Group 2 triad when starting on a root note a half step higher or lower, add that same accidental to the 3rd and 5th as well.

$$D\sharp \text{ minor} = D\sharp F\sharp A\sharp$$

$$A\flat \text{ minor} = A\flat C\flat E\flat$$

To make them major in quality, make sure the 3rd is a half step higher than the root and 5th.

$$D \text{ Major} = D F\sharp A \quad E\flat \text{ Major} = E\flat G B\flat$$

To make them diminished in quality, make sure the 5th is a half step lower than the root and 3rd.

$$D \text{ diminished} = D F A\flat$$

$$A \text{ diminished} = A C E\flat$$

To make them augmented in quality, make sure the 3rd and the 5th are a half step higher than the root.

$$E\flat \text{ augmented} = E\flat G B$$

$$A \text{ augmented} = A C\sharp E\sharp$$

Here is the formula for Group Two Chords:

	diminished	minor	major	augmented
Group Two	↓5	-----	↑3	↑3 ↑5

GROUP ONE
(major)
C E G
F A C
G B D

GROUP TWO
(minor)
D F A
E G B
A C E

GROUP THREE
(diminished)
B D F

The Group 3 (diminished) triad (B dim.) is the VII chord in the key of C.

To keep the diminished quality when starting on a root note a half step higher or lower, add that same accidental to the 3rd and 5th as well.

B \flat diminished = B \flat D \flat F \flat

B \sharp diminished = B \sharp D \sharp F \sharp

To make it major in quality, make sure the 3rd and 5th are a half step higher than the root.

B Major = B D \sharp F \sharp

B \flat Major = B \flat D F

To make it minor in quality, make sure the 5th is a half step higher than the root and 3rd.

B minor = B D F \sharp

B \flat minor = B \flat D \flat F

To make it augmented in quality, make sure the 3rd is half step higher than the root and the 5th is a whole step higher than the root.

B augmented = B D \sharp F \sharp

B \flat augmented = B \flat D F

Here are the formulas for all three groups:

	diminished	minor	major	augmented
Group One	↓3 ↓5	↓3	-----	↑5
Group Two	↓5	-----	↑3	↑3 ↑5
Group Three	-----	↑5	↑3 ↑5	↑3 ↑↑5

Name That Triad (Group One)

C	E	G
---	---	---

F	A	C
---	---	---

G	B	D
---	---	---

C	E ^b	G
---	----------------	---

F	A ^b	C
---	----------------	---

G	B ^b	D
---	----------------	---

C [#]	E	G [#]
----------------	---	----------------

F [#]	A	C [#]
----------------	---	----------------

G ^b	B ^b	D ^b
----------------	----------------	----------------

G [#]	B	D [#]
----------------	---	----------------

F	A ^b	C ^b
---	----------------	----------------

F [#]	A	C
----------------	---	---

C	E	G [#]
---	---	----------------

C [#]	E	G
----------------	---	---

G ^b	B ^{bb}	D ^b
----------------	-----------------	----------------

G ^b	B ^b	D
----------------	----------------	---

C [#]	E [#]	G [#]
----------------	----------------	----------------

F ^b	A ^b	C ^b
----------------	----------------	----------------

G	B ^b	D ^b
---	----------------	----------------

G	B	D [#]
---	---	----------------

C [#]	E [#]	G [#]
----------------	----------------	----------------

F	A	C [#]
---	---	----------------

G [#]	B	D
----------------	---	---

C	E ^b	G ^b
---	----------------	----------------

Name That Triad (Group Two)

D	F	A
---	---	---

A	C	E
---	---	---

E	G	B
---	---	---

D	F \sharp	A
---	------------	---

A \flat	C	E
-----------	---	---

E	G \sharp	B
---	------------	---

D	F	A \flat
---	---	-----------

A	C \sharp	E
---	------------	---

E	G	B \flat
---	---	-----------

D \flat	F	A
-----------	---	---

A	C \sharp	E \sharp
---	------------	------------

E	G \sharp	B \sharp
---	------------	------------

D \sharp	F \sharp	A \sharp
------------	------------	------------

A	C	E \flat
---	---	-----------

E \flat	G	B \flat
-----------	---	-----------

D \flat	F	A \flat
-----------	---	-----------

A \flat	C \flat	E \flat
-----------	-----------	-----------

E \flat	G	B
-----------	---	---

D \sharp	F	A
------------	---	---

A \sharp	C \sharp	E \sharp
------------	------------	------------

A \flat	C \flat	E \flat
-----------	-----------	-----------

D \flat	F \flat	A
-----------	-----------	---

E \flat	G \flat	B $\flat\flat$
-----------	-----------	----------------

D	F \sharp	A \sharp
---	------------	------------

A Special Chord

We have discussed all the basic triad forms except one little guy known as the sus or suspended chord. The idea is to replace the 3rd of a Major chord with a 4th. The 4th is always one half step up from the major 3rd. The resulting chord is constructed Root - 4th - 5th. That 4th note really desperately sounds as though it "wants" to resolve back to the third. This is what gives it the name suspended.

Examples:

A Major = A C# E A sus = A D E

C Major = C E G C sus = C F G

Change these Major chords to sus chords:

D Major = _____ D sus = _____

E Major = _____ E sus = _____

F Major = _____ F sus = _____

G Major = _____ G sus = _____

Inversions

Chords can be "inverted". This means that the order or sequence of notes is not always the same. Triads may be built as:

Root - 3rd - 5th

3rd - 5th - Root

5th - Root - 3rd

or any other sequence you can think of.

Any notes in the chord may also be doubled so that a chord may have two or more of any of its elements. However it's put together, a chord is still built with the same ideas and concepts that we've discussed.

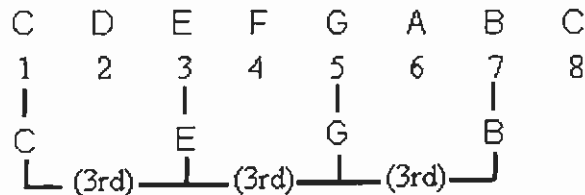
That completes our information on triads. You should have all the information you need to understand how triads are made and their functions in Major diatonic harmony.

Next - 4 note chords.

4 Note Chords

Until now we have talked only about the mighty triad, the 3 note chords that are the basis of all western harmony. We've discussed and listened to its qualities, measured it, examined the shapes of intervals, and given every aspect of it a name. This information is vital and important and if you have any doubt as to any aspects of the triad, you should review all materials before going on.

Four note chords are the next logical extension of the triad. You may be familiar with the term "7th chord". The next step beyond the triads' 1-3-5 is, of course, the 7th tone. Triads with the 7th added are "4 note chords".



Like the diatonic triads, each degree of the major scale has its own 7th chord and those 7th chords have special qualities. There are four qualities of 7th chords diatonic to a major scale. They are:

Maj7th dom7th (or "7th") min7th min7th ♭5

- The elements of a 4 note chord that determine its basic quality are the 3rd and the 7th.
- Other elements like altered 5ths, 9ths, 11ths, or 13ths are always listed separately.

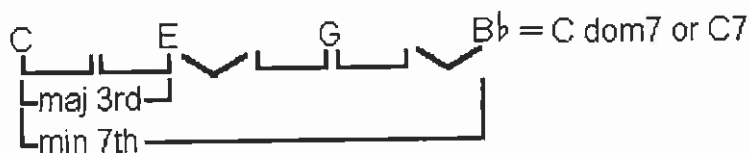
the Major 7th Chord

The 3rd of the chord is an interval of a major 3rd from the root and the 7th of the chord is a major 7th from the root.



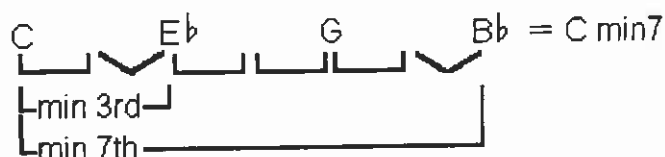
the Dominant 7th or "7th" Chord

The 3rd of the chord is an interval of a major 3rd from the root and the 7th of the chord is a minor 7th from the root.



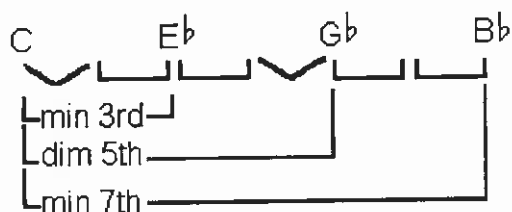
the Minor 7th Chord

The 3rd of the chord is the interval of a minor 3rd from the root and the 7th of the chord is a minor 7th from the root.



the Minor 7th \flat 5 Chord (Half Diminished)

The 3rd of the chord is a minor 3rd, the 5th is a diminished 5th, and the 7th of the chord is a minor 7th from the root.



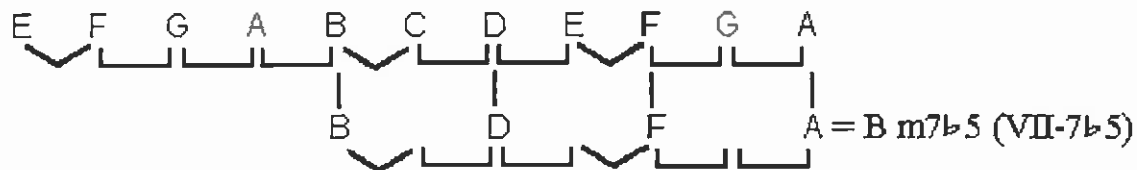
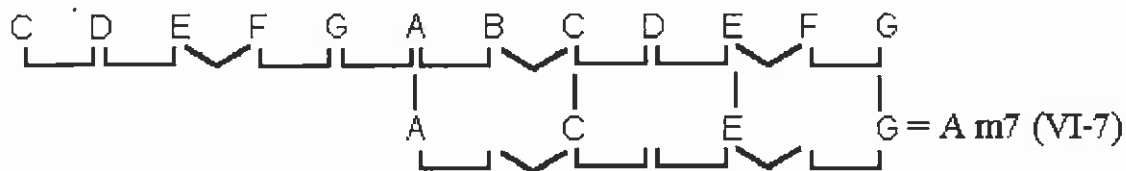
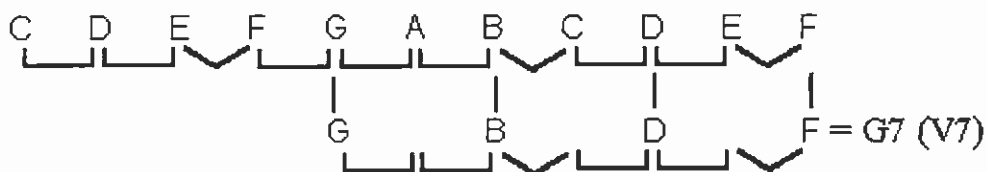
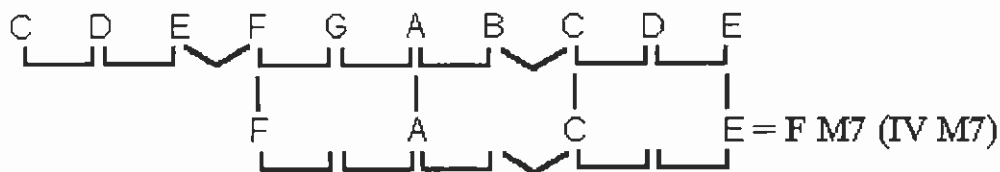
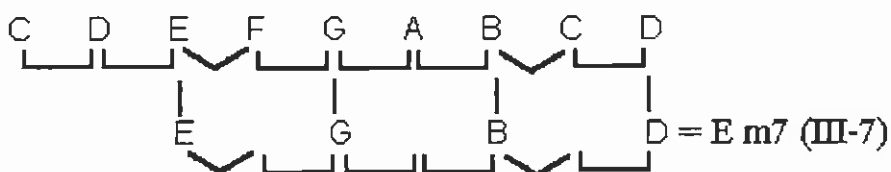
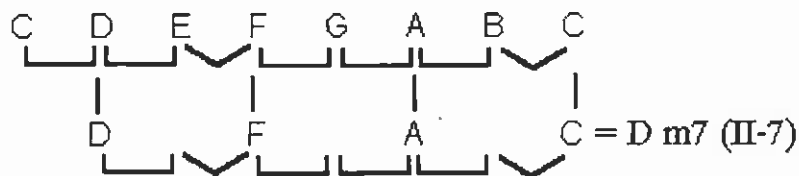
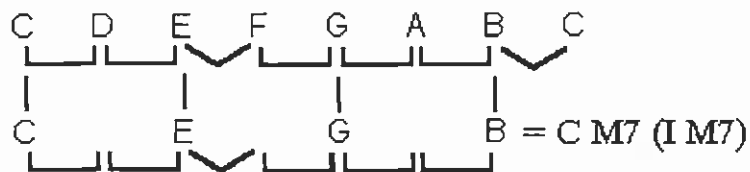
You could also think of them this way:

Maj7th -	1,3,5,7
Dom7th -	1,3,5, \flat 7
min7th -	1, \flat 3,5, \flat 7
min7th \flat 5 -	1, \flat 3, \flat 5, \flat 7

Examine the list of diatonic 7ths in the key of C Major on the next page and compare their characteristics.

Diatonic 7ths (4 note Chords)

Key of C Major



Diatonic Sevenths in the Key of G Major

Fill in the Major scale and build and name the diatonic seventh chords. Use the example on page 27 as a guide.

A musical staff showing a G major scale (G-A-B-A-G-F-E-D-C-B-A-G) and a G7 chord (G-A-B-A-G-F-E-D-C-B-A-G) below it. The chord is labeled "M7 (I)".

A musical staff showing a G major scale and an A7 chord (A-B-A-G-F-E-D-C-B-A-G) below it.

A musical staff showing a G major scale and a B7 chord (B-A-G-F-E-D-C-B-A-G) below it.

A musical staff showing a G major scale and a C7 chord (C-B-A-G-F-E-D-C-B-A-G) below it.

A musical staff showing a G major scale and a D7 chord (D-C-B-A-G-F-E-D-C-B-A-G) below it.

A musical staff showing a G major scale and an E7 chord (E-D-C-B-A-G-F-E-D-C-B-A-G) below it.

A musical staff showing a G major scale and an F7 chord (F-E-D-C-B-A-G-F-E-D-C-B-A-G) below it.

Diatonic Sevenths in the Key of D Major

Fill in the Major scale and build and name the diatonic seventh chords. Use the example on page 27 as a guide.

Example: Major scale and M7 (I) chord.

Diatonic Sevenths in the Key of A Major

Fill in the Major scale and build and name the diatonic seventh chords. Use the example on page 27 as a guide.

_____ = M7 (I)

_____ =

_____ =

_____ =

_____ =

_____ =

_____ =

Diatonic Sevenths in the Key of F Major

Fill in the Major scale and build and name the diatonic seventh chords. Use the example on page 27 as a guide.

Diatonic Sevenths in the Key of Bb Major

Fill in the Major scale and build and name the diatonic seventh chords. Use the example on page 27 as a guide.

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb} = \text{M7 (I)}$

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb} =$

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb} =$

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb} =$

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{F} \quad \text{G} \quad \text{A} \quad \text{Bb} \quad \text{C} =$

$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{G} \quad \text{A} \quad \text{Bb} \quad \text{C} \quad \text{D} =$

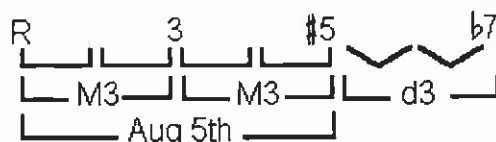
$\text{Bb} \quad \text{C} \quad \text{D} \quad \text{E} \quad \text{F} \quad \text{G} \quad \text{A} \quad \text{Bb}$
 $\text{Ab} \quad \text{Bb} \quad \text{C} \quad \text{D} =$

Augmented and Diminished Sevenths

Augmented and Diminished chords can be thought of as extensions of the Major and minor "families" of harmony. The augmented 7th is related to the major family because of its natural 3rd and the diminished is related to the minor family due to its "flat" or minor 3rd. Neither chord is diatonic to a major key but they play important roles in harmony due to their unstable nature.

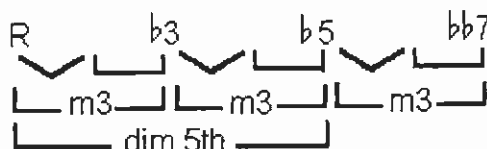
Augmented 7th

Augmented 7th chords can be thought of as a dominant 7th with a raised 5th. Its components would be: R - 3 - #5 - b7. The major 3rd and flat 7 give it its dominant quality while the raised 5th gives it a powerful instability. This is why it is commonly used as the 5 (V) chord of a progression (it "wants" to resolve).



Diminished 7th

Diminished 7th chords may be thought of as a continuation of the diminished triad - a continuous stacking of minor 3rds. Any note in this chord may be its root because of this symmetry. It also is very unstable sounding and is mostly used as a passing chord connecting two chords of a progression.



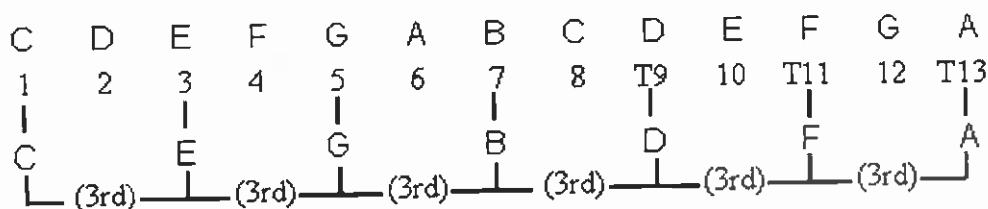
Chord Tensions

Some times we may see a chord notations that include numbers larger than 7. These are commonly 9, 11, or 13. Again, these are just continuations of a previous harmony built on 3rds. If we were to subtract 7 from any of these numbers, the result would reveal their secret identity (original scale degree).

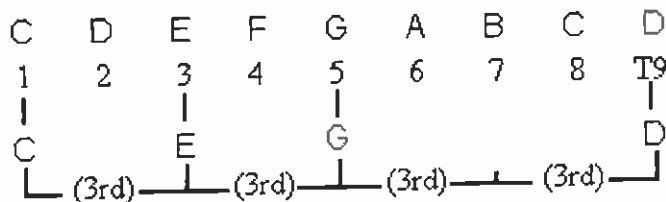
$9 - 7 = 2$ $11 - 7 = 4$ $13 - 7 = 6$

The numbers 9, 11, and 13 are used instead of 2, 4, and 6 when the root chord contains a 7. In addition each of these tensions may be altered (flatted or sharpened) to lend a different character to the basic harmony.

The 9th, 11th, or 13th is a tension and is labeled below with a "T".



If a chord is constructed with tensions 9, 11, or 13 and no 7th, then it is called an "add", such as C add9. C add9 would be an C maj triad with a 9th (the note D)



This completes our discussion of major diatonic harmony. Hopefully it has cleared up some of the mysteries or questions you may have had about the subject. Minor harmony and harmonic analysis are subjects for subsequent study.

Glossary

Here are some terms discussed in the book.

Enharmonic - when two notes have different names and the same pitch.

Half Step - the most basic (smallest) interval in Western music.

Interval - the harmonic distance between notes.

Octave - Pitch that is reached when a frequency is doubled or halved. There are 12 half steps in an octave.

Scale - a series of intervals in a sequence completing an octave.

Tertiary Harmony - harmony system based on the interval of a 3rd.

Triad - chord made with 3 notes.

Whole Step - two half steps.

