

# **Chord Concepts**

**Compiled by Jim Stringer channeling the TwangGuru  
from material collected between 1956-2023 and beyond**

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## Chord naming procedure:

1. **Identify the root** – in common practice, the root can be determined from the Ionian scale of the tonic key... think of the most basic bass pattern. This convention applies regardless of whether the basic tonic chord is major, minor, or dominant. **NOTE: The root is not always the lowest note in the chord voicing. In fact, your voicing may even exclude the root.**
2. **Identify the “Quality” of the chord.** For this discussion, all chords are based on one of these model scales: Ionian, designated by an upper case ‘M’ (also used is a ‘Δ’); Dorian, designated by a lower case ‘m’ (some use ‘-’); Mixolydian, (Dominant 7<sup>th</sup>) no quality designation.
3. **SPAN of the chord when arranged in Root Closed Position** – that is, identify the chord tones, then rearranged on the staff in thirds. The span is the interval between the root and the highest note in the chord. **NOTE: Not all chord tones need to be present. It’s not uncommon to omit some scale notes, even the 5<sup>th</sup> or the root.**
4. **Altered notes** – those notes that are not part of the associated modal scale. For example, if the note Gb were to appear in a C7 chord, it would be called a “Flat Fifth” (C7b5).

# Analyzing The Chords in “My Foolish Heart”

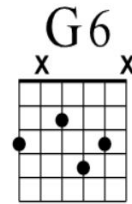
## G6 – Ionian - G2(R), E3(6), B3(3), D4(5)

	1	3	5	7	9	11	13(6)
Ionian	G	B	D	F#	A	C	E
In Chord	X	X	X	-	-	-	X

Deg. 1 2 3 4 5 6 7 8 9 11 13  
 scale: **G** A **B** C **D** **E** F# G A C E

### Primary Intervals

G2 - E3 == M6 (DR2)  
 E3 - B3 == P5 (DR1)  
 B3 - D4 == m3 (DR2)



### Secondary Intervals

G2 - B3 == M3 (DR2)  
 E3 - D4 == P5 (DR1)

### Third level interval

G2 - D4 == P5 (D1)

If I add up the dissonance ratings, I get DR=9, which by comparison to other chords analyzed here, is heavily on the consonant end.

If I applied the same analysis to an RC position G6 (G3-B3-D4-E4), the I get a DR of 11, and, as predicted, it sounds a little dissonant, probably due to the M2 interval, D4-E4.

**Note – I think primary intervals contribute a bit more to the DR, and the G2-B3 which has more dissonance than G2-B2 should be considered as additional dissonance. But, I don’t think it’s ever going to boil down to a simple mathematical formula, so it’s probably best just to think of this DR as a minimally objective guide to what is a fundamentally subjective element. In any case, lipstick is not going to make or break the M7 pig.**

## CM9 – Ionian - C3(R), E3(3), B3(7), D4(9)

	1	3	5	7	9	11	13
Ionian	C	E	G	B	D	F	A
In Chord	X	X	-	X	X <sup>8va</sup>	-	-

Deg. 1 2 3 4 5 6 7 8 9 11 13  
 scale: **C** **D** **E** **F** **G** **A** **B** **C** **D** **E** **F** **G** **A**

### Primary Intervals

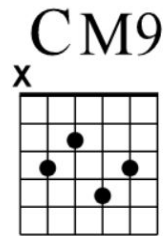
C3 - E3 == M3 (DR2)  
 E3 - B3 == P5 (DR1)  
 B3 - D4 == m3 (DR2)

### Secondary Intervals

C3 - B3 == M7 (DR5)  
 E3 - D4 == m7 (DR4)

### Third level interval:

C3 - D4 == M2 (DR4)



Total DR is 18 and predictably, it has a little more dissonant character than the initial G6 voicing.

## Bm11 – Dorian - B2(R), A3(7), D4(3), E4(11)

	1	3	5	7	9	11	13
Dorian	B	D	F#	A	D	E	G
In Chord	X	X <sup>8va</sup>	-	X	-	X	-

Deg. 1 2 3 4 5 6 7 8 9 11 13  
 scale: **B** C# **D** E **F#** G **A** B C# **D** **E** F# **G**

### Primary Intervals

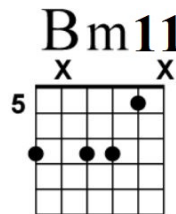
B2 - A3 == m7 (DR3)  
 A3 - D4 == P4 (DR1)  
 D4 - E4 == M2 (DR4)

### Secondary Intervals

B2 - D4 == m3 (DR2)  
 A3 - E4 == P4 (DR1)

### Third level interval

B2 - D4 == M2 (DR4)



Total DR is 15. Also, I think this chord has an “unstable” quality because it is behaving as a II-V-I to the Am.

## E7b5 – Mixolydian - Bb2(b5), G#3(3), D4(7), E4(R)

	1	3	5	7	9	11	13
Mixolydian	E	G#	F#	A	D	F	A
In Chord	X	X	b5	X	X	-	-

Deg. 1 2 3 4 5 6 7 8 9 11 13  
 scale: **E F# G# A B C# D E F# G# A B C#**

### Primary Intervals

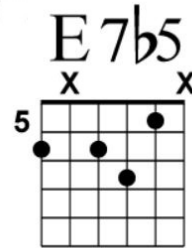
Bb2 - G#3 == m7 (DR3)  
 G#3 - D4 == TT (DR4)  
 D4 - E4 == M2 (DR4)

### Secondary Intervals

B2 - D4 == M3 (DR2)  
 A3 - D4 == m6 (DR2)

### Third level interval

B2 - D4 == TT (DR4)



Total DR is 19. This chord in this voicing sounds even more “unstable” than the Bm11 because it works as the II in a II-V-I, resolving to the next chord, an Am7, which begins a new phrase.

This voicing has a Bb in the bass – a flat fifth. Generally, in chord naming, the “tritone”, is referred to as a flat fifth, regardless of whether the tonic key signature is a “sharp” or “flat” key.

It would NOT be appropriate to name this chord as if Bb was root. It’s clear that the root progression of the song is 1, 4, 3, 6, 2, where the 3/6/2 is a 2-5-1 cousin. A good rule of thumb is to apply “Occam’s Razor” to chord naming... accept the simplest solution which is to stay inside the modal framework.

## Am7 – Dorian - A2(R), G3(7), C4(3), E4(5)

	1	3	5	7	9	11	13
Dorian	A	C	E	G	B	D	F
In Chord	X	X	X	X	-	-	-

Deg. 1 2 3 4 5 6 7 8 9 11 13  
 scale: **A B C D E F G A B C D E F**

### Primary Intervals

A2 – G3 == m7 (DR3)  
 G3 - C4 == P4 (DR1)  
 C4 - E4 == M3 (DR2)

### Secondary Intervals

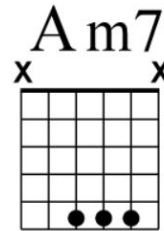
A2 - C4 == m3 (DR2)  
 G3 - E4 == M6 (DR2)

### Third level interval

A2 - E4 == P5 (DR2)

Total DR is 12

As mentioned above, this chord is the beginning of a new phrase, so it's appropriate that it would have some stability. Because it follows a Bm/E7, it also functions as a "resting" place, as if it were a new "tonic" chord – even though there's no real modulation at this point of the song – we're still working with G as the tonic chord.



## Sixth Chords, Added (add) and Suspended (sus)

Modes are sometimes best thought of **in the way that they differ**. For example, the **only** thing that differentiates chords based on, for example, G Ionian Mode, from those based on G Mixolydian Mode, is that the Mixolydian **has an F natural, rather than the F# of the Ionian mode**. So, all that can differentiate Major Mode chords from Dominant Mode chords is the presence of the 7 or b7. Chords which **DO NOT** include the seventh tone of the defining mode, are ambiguous quality and can be used interchangeably.

Chords that include **the fourth note, but not the 7th note** of the scale are generally referred to a **sus4**. For example, C/F/G/C would be called Csus4. It's often felt that sus4 chords must be resolved to the triad, but that's not always true in modern music.

If a chord includes 1-3-5-9, then it's ambiguous and is called an add9. For example, (C, E, G, D) is called **Cadd9**. (This is different than a **C9**, which implies the presence of the supporting Mixolydian 7<sup>th</sup>.)

Likewise, the chord C, D, G, A is referred to a **C6** (which cannot include the 7 as that would differentiate the quality as a Dominant or Major chord.) Assuming a G root context, the chord, "B2(3), D3(5), G3(R), A3(9) is a **Gadd9**; "F#2(7), B2(3), D3(5), G3(R), A3(9)" is a **GM9**, because of the presence of the Ionian 7<sup>th</sup>; "E3(6), A3(9), D4(5), G4(R), which has neither 7 or b7, but does include the 6<sup>th</sup>, is frequently called **G6/9**. Because with not 7 or 3 scale tones, its quality is ambiguous and can be used in a major, minor or dominant context.



# Diminished and Augmented Chords

In this method of Chord Naming, there's really seldom an instance where it's necessary to use the term **Diminished or Augmented**.

These two descriptive qualities are necessary when referring to Intervals and Triads:

**Augmented Interval** is a Major or Perfect interval (eg, M3 or P5) made chromatically  $\frac{1}{2}$  step larger (eg., G-C# is an augment 4th).

**Augment Triad** is a major triad with an augmented 5<sup>th</sup> (eg. G-B-D#)

**Diminished Interval** is a minor or Perfect interval (eg. m3 or P4) made  $\frac{1}{2}$  step smaller, (eg. G-Db).

**Diminished Triad** is a minor triad with a diminished 5<sup>th</sup> (eg. A-C-Eb)

However, most chords that might be designated as “dim” can be analyzed as a Dominant chord with altered notes. For example, the progression, G/G#dim/Am/D (a 1, 1#dim, 2m, 5), the G#dim is most likely functioning as the 6 chord and the progression is best understood as G, E7b9, Am, D7. Using the Occam's Razor criterion, this is a simpler solution that introducing a new quality of chord. In addition, there's no easily defined modal scale for “dim” chords (although the Locrian triad is a diminished triad). This same logic applies to “half-diminished” chords which is always more descriptively called a m7b5 – for example C-Eb-Gb-B is a Cm7b5.

Likewise, **Augmented** chords can almost always be given a more descriptive name. For example, in the chord progression C / Caug / F / Fm example, the Caug is acting as a pseudo 5 to the coming F... it would be better described as C7#5 – the bassist would almost certainly be treating it this way. Another case in which an ersatz aug chord could be explained otherwise is when it occurs as the dominant called a G7#5 (assumed dominant mode.)

When diminished triads (all intervals m3) are moved as a cluster by a m3, then it's probably most descriptive to refer to them as, for example Gdim, A#dim, C#dim – although each one of these can be re-analyzed as an inversion of a Dominant 7 chord, resolving to the tonic. The same is true of augmented triads move as a block by a major 3<sup>rd</sup>. Again – they can be re-analyzed as dominant 7 chords resolving to a tonic. It would be appropriate to use whichever designation communicated best.

# Intervals and Chord Voicing

Chord voicing can be analyzed by looking at the intervals between chord tones.

Chords have these intervals:

**Primary:** those between adjacent chord tones;

**Secondary:** the intervals between alternate chord tones;

**Third, Fourth, etc.:** intervals beyond primary and secondary.

In guitar chords, it's less common to have more than 4 notes in a voicing than in piano chords, although, there can be more and these intervals have to be considered when analyzing the voicing.

To confuse the issue, interval terminology and chord terminology use overlapping terms. Intervals can be **Unison**, **Perfect** (4<sup>th</sup> and 5<sup>th</sup>), **Major** (M2, M3, M6, M7), **Minor** (which is a major interval made one half step smaller (m2, m3, m6, m7). A **diminished** interval is a minor or perfect interval made a half step smaller), and an **Augmented** interval is a major or perfect interval made chromatically one half step larger, and the **Tritone** (3 major 2<sup>nd</sup> intervals above or below a root note). Obviously, there some overlap. Enharmonic intervals are those that **sound** the same in a tempered scale, but are **written or identified** differently, for example, C-F# could be called a tritone, an augmented 4<sup>th</sup> or a diminished 5<sup>th</sup>.

Intervals are considered either **consonant** or **dissonant**. There are several things that contribute to perceived consonance and dissonance. Each note has it's own overtone sequence – this is physics. A string is a complex vibration. When we play, for example, the G at the third fret of the E string, it vibrates, not only at the fundamental frequency (G2 = 98 hz), but at fractions of the string's length, or multiples of the fundamental frequency. –

One half the length == octave (G3, 196hz), first overtone;

One third of the length – 5<sup>th</sup> an octave above the fundamental, 294hz – almost D4, but slightly sharp. The tempered D4 frequency is actually 293.66.

One fourth of the length – octave-- perfectly in tune with G5 at 392 hz

One fifth of the length –close to (B6 490 hz); tempered (B6 = 493.88)

Higher partials, including octaves, don't coincide with tempered scale tones.

It's theorized that our ears hear dissonance based upon **intermodulation** (beating) between the both the fundamental and the overtones of a note. Beat frequencies in audible range seem to contribute most to dissonance. The more inter-modulation between the most prominent (usually, the lower) harmonics, the greater dissonance. The higher overtones (higher partials) are lower amplitude and contribute less to the perceived dissonance.

The “**timbre**” of the sound excites harmonics at different levels. On guitar, this derives from such variables as string gauge, pick material, where the string is picked, pickup type and position, and construction, body resonance (even in solid body guitars), and application of distortion effect. Here's a list of intervals considered consonance and dissonant. I've given each interval a dissonance rating (DR) from 0 (unison and octave) to 6 (minor 2<sup>nd</sup>).

**Perfect consonances:**

- unison (U) and octave (8va) (DR 0)
- Perfect fifth (P5) (DR 1) and perfect fourth (P4) (DR1)  
The P4 and P5 are usually considered equivalent on the consonance/dissonance scale, but a P4, to my ear, does less to contribute consonance than the P5.

**Imperfect consonances:**

- major third (M3) and minor sixth (m6) (DR-2)
- minor third (m3) and major sixth (M6) (DR-2)
- minor seventh (m7) (DR3)
- major second (M2) (DR4)

**Perfect dissonances:**

- tritone (TT) (D4)
- major seventh (M7) (D5)
- minor second (m2) (DR6)

The DR that I've assigned to the intervals is more subjective than objective. Generally, the m7 and M2 are considered equally dissonant, but I think the M2 is more dissonant subjectively. My judgment on this could be corroborated or controverted by extending the overtone sequences of the individual notes and analyzing the conflicts – a good project for a physics major; not so much for a simple “b-hee-b-hawp” geetar picker!

To generalize, interesting chords are created by balancing the distribution of consonant and dissonant intervals between the notes played (chord voices.) Dissonant intervals can be tempered by inclusion of consonant intervals – but too much consonance makes for bland chords.

## Voice Leading

The next consideration in chord progression construction is **voice leading**. The notes in a chord, particularly a 4-note guitar chord, and be considered individual voices – you have a bass, a tenor, and alto, and a soprano. We can consider the movement of each voice as a melody of its own. Some of the best chord progressions are those with the most interesting voice leading.

Again, resorting to analysis of the first five chords in the “My Foolish Heart” arrangement, each of the 5 opening chords consists of 4 voices.

The lowest voice follows a melody: G-C-B Bb-A

The next (tenor) voice uses this melody: F#-A-A-Ab-G (note about G# vs Ab)

The alto voice melody is: B-B-D-D-C

And, the soprano melody is: D-D-E-E-E

In the example, I actually allowed the high voice to play the song’s melody:

D-(D-G-B-D)-(E-(E-F)) E-E....

So reviewing the analysis of this arrangement of “My Foolish Heart”, we can see how to give an appropriate name to the chords, how the chords’ intervals affect the color, and how the chords voices act like a choir adding distinct parallel and counter melodies to the primary melody.

## Other Modal Harmonies

As I clarified early in the discussion of Chords, this method of chord description applies to Diatonic or Modal music, often called “common practice”. It becomes much more ambiguous when we move away from the seven diatonic modes: Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, Locrian.

One interesting extension of Diatonic modes is to view scales as made up of two Tetrachords, four notes separated by three intervals, M2 and m2, and an interval which separates the lower and upper tetrachord. Interestingly, ALL the common diatonic modes, with the exception of Locrian, include the P5 interval (C-G = P5, D-E = P5, E-B = P5, F-C = P5, G-D = P5, A-E = P5, and B-F = P5). This need not be true of scales built on other tetrachords. Here are the tetrachord structures of the Diatonic modes using the C as tonic:

Ionian	C		D		E	F		G		A		B	C
Dorian	D		E	F		G		A		B	C		D
Phrygian	E	F		G		A		B	C		D		E
Lydian	F		G		A		B	C		D		E	F
Mixolyd	G		A		B	C		D		E	F		G
Aeolian	A		B	C		D		E	F		G		A
Locrian	B	C		D		E	F		G		A		B
	1	b2	2	b3	3	4	b5	5	#5	6	b7	7	8va

As you can see, not all possible tetrachords are represented. All modes, except Locrian, include the perfect 5 from the root. Here’s some alternative tetrachord-based scales:

#1	C		D		E		F#	G		A		B	C
#2	C		D	Eb		F	Gb		Ab		Bb		C
#3	C	Db		Eb		F		G	Ab		Bb		C
#4	C		D		E		F#	G		A		B	C
#5	C		D		E	F		G	Ab		Bb		C
#6	C	Db			E		F#		G#		A#	B	C
#7	C	Db		Eb		F		G	Ab			B	C
	1	b2	2	b3	3	4	b5	5	#5	6	b7	7	8va

From each one of these modes, chords can be constructed using an equivalent to the naming system for the standard diatonic modes. Also, chord progressions can be constructed using the base mode as the tonic.

Also, scales can be created from other interval structure, even departing from the 12 tone scale. Much music has been created for microtonal instruments – see [Harry Partch](#), for example.

## Some helpful references:

Wikipedia has many articles on chords, intervals and scales such as this one: [Guitar Chord](#)

George Russell's ground breaking concept of harmony: [The Lydian Chromatic Concept](#)

This book from Jazz, R&B, and studio guitarist, Mickey Baker, was one of the first published method books in the genre. It's short on explanation, but presents many chord forms and has been an early tutorial for many guitarists, including myself.

[Mickey Baker Jazz Guitar Book 1](#)

This was composed as my tribute to Mickey Baker, referring to Baker's own tune, "Baker's Dozen". But he was most known for his six string innovation and expertise – so, Baker's half dozen. I limited my backing chords to those I had learned so many years ago from his book, and I included a variant of his "Love Is Strange" signature lick in my solo. This lick was my first "lead" guitar bit as an 8 year old beginner in 1956.

[Jim Stringer & the AM Band – "Baker's Half Dozen"](#)

This is a direct link to the example that I've referenced in this writing.

[Jim Stringer plays "My Foolish Heart"](#)