Modern Harmony Simplified

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summarized, clarified, & embellished by Guitar Lessons Ithaca
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I. Basic Concepts

A. Maj scale construction: w w h w w w h (see article "Constructing Major Scales")

B. 9, 11, 13 = 2, 4, 6

C. can alter scale degrees to get b2/b9, #2/b3/#9, #4/b5/#11, #5/b6/b13, b7

II. Intervals and Chords

A. Intervals are indicated as a number plus M, P, m, or + (ex: P4, M3, m7, +5)

B. Inverted intervals - to find the inverted interval subtract original interval from 9 and invert the quality as follows:

M → m
m → M
P = P
+ → dim
dim → +

(ex: e to g is m3, so g to e is M6 as 9-6=3 and m → M)

C. Stacking 3rds creates harmony as in 1, 3, 5, 7, 9, 11, 13 all in same chord; Chord classifications: triad, 7^{th}, 9^{th}, 11^{th}, 13^{th}

D. Types of Chord

1.	Triads:	maj, min, dim, aug, sus4, sus2
2.	7^{th}:	maj7, 7, min7, m7b5
3.	Other 4-note chords:	add 9, 6, m6, m(maj7), dim7, 7sus4
4.	Chords with tensions:	7b9, 7#9, m9, 11, -11, 7#11, maj7#11, 13, maj13, 7(b13)

E. Inversions (ex: root position: Cmaj7, first inversion: Cmaj7/E, second inversion: Cmaj7/G, third inversion: Cmaj7/B)

III. Harmonizing Scales – (see "How to Harmonize a Scale")

A. Mode names and intervals (see "Quick & Easy Guide to Modes")

B. Triad & 7th chord harmonized scale formulas (see “Harmonized Scale Chart”)

C. Modal harmonized scales

Ionian I Imaj7	IIm IIm7	IIIm IIIm7	IV IVmaj7	V V7	VIm VIm7	VIIdim VIIm7b5
Dorian Im Im7	IIm IIm7	bIII bIIIMaj7	IV IV7	Vm Vm7	VIdim VIm7b5	bVII bVIImaj7
Phrygian Im Im7	bII bIIVMaj7	bIII bIII7	IVm IVm7	Vdim Vm7b5	bVI bVImaj7	bVIIm bVIIm7
Lydian I IMaj7	II II7	IIIm IIIm7	#IVdim #IVm7b5	V Vmaj7	VIm VIm7	VIIm VIIm7
Mixolydian I I7	IIm IIm7	IIIdim IIIm7b5	IV IVmaj7	Vm Vm7	VIm VIm7	bVII bVIIMaj7
Aeolian Im Im7	IIdim IIm7b5	bIII bIIImaj7	IVm IVm7	Vm Vm7	bVI bVIMaj7	bVII bVII7
Locrian Idim Im7b1	bII bIImaj7	bIIIm bIIIm7	IVm IVm7	bV bVMaj7	bVI bVI7	bVIIm bVIIm7

D. Diatonic extensions add color, but stay away from 9th on III and VII chords, 11th on I and V chords, and 13th on II, III, IV, VII chords, as shown:

major

	I	II	III	IV	V	VI	VII
9ths	maj9	m9	…	maj9	9	m9	…
11ths	…	m11	m11	maj7(#11)	…	m11	m7 (b5, 11)
13ths	maj13	…	…	maj13(#11)	13	…	…

minor

	I	II	III	IV	V	VI	VII
9ths	m9	…	maj9	m9	7b9	maj9	9
11ths	m11	m7 (b5,11)	…	m11	…	maj7(#11)	…
13ths	…	…	maj13	…	…	maj13(#11)	13

E. Basic harmonic analysis with Roman Numerals (see “Jazz Theory – Analyzing Tunes”)

IV. Harmonic Functions

A. Scale degrees: 1 tonic, 2 supertonic, 3 mediant, 4 subdominant, 5 dominant, 6 submediant, 7 leading tone (same for min or maj)

B. Chord Functions

1. Tonic = consonant = no 4^{th} = I, III, VI

2. Subdominant = neutral = has 4^{th} but no 7 = II, IV

3. Dominant = dissonant = has 4^{th} & 7^{th} = V & VII

Chord	Function	Scale Degrees
Imaj7	Tonic	1, 3, 5, 7
IIm7	Sub-dominant	2, 4, 6, 1
IIIm7	Tonic	3, 5, 7, 2
IVmaj7	Sub-dominant	4, 6, 1, 3
V7	Dominant	5, 7, 2, 4
VIm7	Tonic	6, 1, 3, 5
VIIm7b5	Dominant	7, 2, 4, 6

C. Minor keys

1. borrow from harmonic minor for V ex: | V | I | in Am is | E7 | Am |

2. Tonic = I, III, VI; Subdominant = II, IV; Dominant = V, VII

Chord	Function	Scale Degrees
Im7	Tonic	1, b3, 5, b7
IIm7b5	Subdominant	2, 4, b6, 1
bIIImaj7	Tonic	B3, 5, b7, 2
IVm7	Subdominant	4, b6, 1, b3
V7	Dominant	5, 7, 2, 4
bVImaj7	Tonic	b6, 1, b3, 5
bVII7	Dominant	b7, 2, 4, b6

D. Natural Tendency of Harmonic Progressions

1. generally, Tonic → Subdominant → Dominant → Tonic (starting from any point in the cycle) (ex1: | Am | F | G | C | which is | VI | IV | V | I | ex2: | Em | Dm | Bm7b5 | Am | which is | III | II | VII | VI | ex3: | G7 | C | F G | C | which is | V | I | IV V | I |

2. the direction can reverse, but usually resumes its normal direction (ex1: | F | C | F | G | which is | IV | I | IV | V | ex2: | E7 Am | E7 Dm | E7 Am | Dm E7 Am / | which is | V I | V IV | V I | IV V I / |)

3. the I chord can be interjected anywhere without disrupting the flow (ex1: | C | F | C | G | which is I I | IV | I | V | ex2: | Dm Am | E7 Am | Dm E7 | Am | which is | IV I | V I | IV V | I |

V. Dominants and Tritones

A. Tritone interval is 3 whole steps apart; very dissonant; wants to resolve in contrary motion by half steps (ex: b and f resolves to c and e)

B. Diatonic chords that have tritone interval

1. V7 has tritone interval (ex: G7 has b and f as its 3rd & 7th), which can resolve to I or VI (ex: | G7 | C | or | G7 | Am |), but resolving to Im is not as compelling a resolution because while one voice moves ½ step, the other a whole step (ex: in | G7 | C- | the b resolves up ½ step to c but f resolves whole step down to eb)

2. VII (m7b5 chord) has tritone and resolves similarly (ex: | Bm7b5 | Cmaj7 | or | Bm7b5 | Am |)

C. V to I is perfect cadence and V chords are “primary dominants” but you can also have “secondary dominants”, which are V chords of other diatonic chords (ex1: | C | E7 | Am| = | I | V/VI | VI | ex2: | C | C7 | F | = | I | V/IV | IV |)

VI. II V I Progression

A. Primary (ex: | D-7 | G7 | Cmaj7 | is primary II V I key C)

B. Secondary - resolving to a different chord in key (ex: | F#m7b5 | B7 | E-7 | is a secondary II V I to III chord in key of C)

C. Minor II V I (ex: | Dm7b5 | G7b9 | Cm |). The b9 is used to create another tritone relationship in the V (ex: d and ab, the 5 and b9 of G7b9) which resolves by half-steps to I (ex: to eb and g in Cm)

D. Melodic minor II V I (ex: | Dm7 | G7 | Cm |)

VII. Tritone Substitution

A. If take tritone intervals which resolve by half steps (ex: b & f to c & e), and invert them (ex: f & b) you get a new resolution point (ex: f# & a#)

B. two V7 chords 3 whole steps apart have the same 3rd and 7th and can substitute for each other (ex: Db7 & G7 subsitute for each other because the note b is the 7th of Db and the 3rd of G and the note f is the 7th of Db and the 3rd of G) (ex: | Cmaj7 | Gm7 C7 | Fmaj7 | which is | I | II/IV V/IV | IV | can become | Cmaj7 | Gm7 Gb7 | Fmaj7 | which is | I | II/IV subV/IV | IV |)

C. Tritone subs are an easy way to achieve a deceptive cadence (i.e. harmony that goes somewhere unexpected (ex: | C | G7 | F#maj7 |)

D. Tritone subs are commonly found in II V Is (ex: | Fm7 | E7 | Ebmaj7|)

VIII. Other Chords and Tensions

A. dim7 = 1 b3 b5 bb7 (ex: Cdim7 = c eb gb bbb)

1. symmetrical chord made up of four m3 intervals

2. has 2 tritones (ex: c to gb and eb to bbb)

3. usually resolves:

a. ascending chromatic (mainly as I #Idim7 II)
(ex: | Cmaj7 | C#dim7 | Dm7 |)

b. descending chromatic (mainly as I bIIIdim7 II)
(ex: |Cmaj7 | Ebdim7 | Dm7 |)

c. as a same-root auxiliary chord (mainly as Idim7 to I or Vdim7 to V)
(ex: |Cdim7 | C maj7 |)

B. 7 sus 4 = 1 4 5 b7 (usually as V7sus4 I where sus4 note is the tonic of I chord and thus adds no tension)

C. other tensions

1. 9 – common in maj, dom, min chords except III and VII in maj key

2. 7b9 - used on V chords in minor or major; has 2 tritones so resolves perfectly for either; provides additional chromaticism of b9 of V to 5 of I maj7 (ex: ab to g in | G7b9 | Cmaj7)

3. 7 #9 – adds tension on a V chord; #9 on V is same as 3 of I m7 (ex: bb is #9 of G7#9 and 3rd of Cm7) and resolves up ½ step to 7 of Imaj7 (ex: bb to b in | G7#9 | Cmaj7 |)

4. 11 – adds color to minor 7 chords (ex: Cm11 = c eb g bb d f); acts as a more modern 7sus 4 chord where maj 3rd is present (ex: C11 = c e g bb d f)

5. #11 – commonly used in:

    a. IV chord in maj key (ex: Fmaj7#11 in C)

    b. VI chord in min key (ex: Abmaj7#11 in Cm)

    c. in a 7#11 in Lydian dominant settings (ex: Bb7#11 in C)

    d. as a way to hide tension of a tritone sub, since the #11 is the tonic of the original chord (ex: | Dm7 | Db7#11 | C maj7 |, where the Db7 subs for G7 and the #11 is the g itself)

    e. as a I maj7 #11 for lydian effect (ex: Cmaj7#11 in key C)

6. 13 – used in maj, dominant, and minor chords, although in the latter, the 3 and 13 make a tritone and is very tense (ex: eb to a form tritone in Cm13)

7. b13 – commonly used in V chords when resolving to I min, where the b13 of V = 3 of I (ex: eb is b13 of G7b13 and 3 of Cm7); also achieves half-step resolution to a Imaj (ex: eb to e in | G7b13 | Cmaj7 |)

IX. Modal Interchange & Modulation

A. Characteristics of Modal Interchange

1. occurs when 1 or more chords are borrowed from a different mode

2. mode that lends its chord(s) shares same tonic as original key (ex1: borrowing chords from C Aeolian while in C Ionian) (ex2: | C | Dm | Am | becomes | C | Dbmaj7 | Am | by borrowing from C Phrygian

3. Works with both major and minor interchanges (maj keys borrow from Dorian, Aeolian, Phrygian, min keys borrow from Ionian, Lydian, Mixolydian), although more common to borrow from min while in major than vice versa

4. Is only a temporary harmonic departure (ex: Cmaj7 Abmaj7 Bb7 Cmaj7 where the middle 2 chords borrow from Aeolian, but is not a mode change as it resolves back to Cmaj)

B. Classification of Modal Interchange Chords

1. Subdominant (contains b6 interval, thus act as IVm)

   a. IIm7b5 from Aeol & Phryg (ex: | Cmaj7 | Dm7b5 | G7 | Cma7 |)

   b. IVm7 or IVm6 from Aeol & Phryg (ex: | Cmaj7 | Fm7 | G7 | Cma7 |)

   c. bVI from Aeol & Phryg (ex: | Cmaj7 | Abmaj7 | G7 | Cma7 |)

   d. bVII7 (backdoor dominant) from Aeol (ex: | Cmaj7 | Fmaj7 | Bb7 | Cma7 |)

   e. bIImaj7 or bII6 from Phryg (ex: | Cmaj7 | Dbmaj7 | Cma7 |)

2. other (do not contain b6)

   a. Im from Aeol. Dor & Phryg (ex1: | Cmaj7 | Cm7 | Cma7 | ex2: | Cm7 | G7 | Cmaj7 |)

   b. bIIImaj7 from Aeol, Dor & Phryg (ex1: | Ebmaj7 | Fmaj7 | Cma7 | ex2: | Cmaj7 | Ebmaj7 | Abmaj7 | Dbmaj7 | Cmaj7 |)

   c. Vm7 from Mixo, Aeol, Dor & Phryg (ex1: | Cmaj7 | Gm7 | Cma7 | ex2: | Cmaj7 | Gm7 | G7 | Cmaj7 |)

   d. II7 from Lyd (ex: | Cmaj7 | D7 | Dm7 | Cma7 |)

   e. #IVm7b5 from Lyd (ex: | Cmaj7 | F#m7b5 | Fmaj7 | Cma7 |)

   f. bVIImaj7 from Dor (ex: | Cmaj7 | Bbmaj7 | Cma7 |)

C. Modulation (change keys); most common modulation techniques are:

1. pivot chords (same chord found in both keys) (ex1: the Am chord is found in both keys of C and G as in | Cmaj7 | Dm | G7 | Cmaj7 G7 | Cmaj7 | Am | D7 |

Gma7 | ex2: the F#m chord is common to both E and D as in | D | F#m | B7 | Emaj7 |)

2. common root (ex: | Cmaj7 | Cm7 | F7 | Bbmaj7 | the Cm chord took us from C to Bb)

3. auxiliary key (ex: | Dmaj7 | Gmaj7 | Gm7b5 C7 | Fm7 Bb7 | Ebmaj7 | where Gm7b5 and C7 are borrowed from Fm to take us from D to Eb)

X. Other Tonalities

A. Basic Blues

I7	I7	I7	I7
IV 7	IV7	IV7	IV7
V7	IV7	I7	V7

ex: | F7 | % | % | % |
| Bb7 | % | F7 | % |
| C7 | Bb7 | F7 | C7 ||

B. extended blues harmony (see post “Blues, part 6, Five Levels of the Blues”)

C. modal

1. melody is primary and chord progression doesn’t have usual tension and resolution

2. examples are So What, Cantaloupe Island, and Maiden Voyage

3. mode is pre-conceived (ex: So What is in Dorian)

4. have minimal chord changes

5. commonly employs quartal harmony (ex1: Dm Dorian chord can be voiced with any portion of the sequence d g c f b e a d) (ex: C Lydian chord can be voiced with any portion of c f# b e a d g c)