

7. Chords

Even if Chapters 3-5 were mainly about melody and the monophonic aspects of mode, it was impossible to totally avoid mentioning chords and harmony. Now, harmony is no side issue in the rest of this book: it's the central topic. If that is so we'll need a vocabulary capable of designating harmony's nuts and bolts. That's why this chapter is devoted to explanation of the chord-naming conventions used in the rest of this book. And that, in its turn, means that this is not a discursive chapter. It's intended rather as a reference resource whose core consists of the various charts and tables displaying TERTIAL chords, their designations and abbreviated labels (pp. 223, 226, 232-233, 235). Please note that QUARTAL harmony is dealt with separately in Chapter 10.¹

Definition and scope

CHORD, from Greek χορδή (*chordē*, Latin *chorda*), originally meant the string of a musical instrument. Eventually, *chord* came to denote the simultaneous sounding of two or more different tones by any polyphonic instrument or by any combination of instrument(s) and/or voice(s). The simultaneous sounding of notes of the same name, i.e. unison pitches or pitches separated by octave intervals, does not qualify as a chord. A two-note chord is a DYAD, a three-note chord a TRIAD, a four-note chord a TETRAD and a five-note chord a PENTAD.

Chords need not be heard as such by members of a musical tradition whose polyphony emphasises the interplay of independent melodic lines (counterpoint) much more strongly than music in the Western post-Renaissance tradition of melody and accompaniment. In most types of popular music chords are generally regarded as belonging to the accompaniment part of that dualism.

1. In conventional music theory the notions TERTIAL (to do with thirds) and TRIADIC (to do with triads) are often confused; see pp. 249-251 for clarification of this issue. See pp. 293, 295-301 for details of difference between tertial and quartal harmony.

Tertial triads

Tertial chords are based on the stacking of thirds. Tertial TRIADS are fundamental harmonic building blocks in euroclassical music, in most forms of jazz and in many types of popular music.

A TRIAD is *any* chord containing three different notes. The *tertial common triad* is a particular, and particularly common, type of triad constructed as two simultaneously sounding thirds, one superimposed on the other. As Figure 33 shows, c and e (separated by a major third) together with e and g (minor third) constitute the *major common triad* of C major (c-e-g), while d and f (minor third) together with f and a (major third) make a D minor triad.

Fig. 33. Tertial common triads on each degree of C ionian / A aeolian

	C	Dm	Em	F	G	Am	B°
Triad notes:	c-e-g	d-f-a	e-g-b	f-a-c	g-b-d	a-c-e	b-d-f

Two types of tertial chord shorthand appear in Figure 33: [1] LEAD-SHEET CHORD SHORTHAND (C, Dm, Em, etc.); [2] ROMAN NUMERALS (I, ii, iii, IV etc.). Both systems are in common everyday use. Lead-sheet chord shorthand, explained on pages 229-244, is 'absolute' in that, for example, the abbreviation C denotes a major triad based on c \sharp and on no other note, Dm a minor triad based on d \sharp and no other note, etc. The roman numeral system is, however, 'relative'.

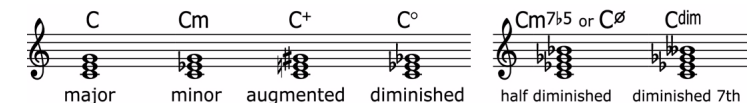
Roman numerals

Roman numerals are used to denote chords and their relation to the tonic (keynote) of *any* key or mode. This sort of *relative* chordal designation can, with few modifications, be transferred to the study of any polyphonic music for which a keynote or tonic can be established. More specifically, each roman numeral designates the *root* note of the scale degree on which the chord is built. For example, the *upper-case* roman 'one' (I) in Figure 33 means a *major* common triad with scale degree 1 ($\hat{1}$ at its root. In the key of C, where $\hat{1}$ is c \sharp , 'I' designates *not the note* c \sharp but a C major triad built on c.²

Minor triads are expressed using *lower-case* roman numerals. As shown in Figure 33, ‘vi’ means a minor triad on scale degree 6 ($\hat{6}$). In the C major scale, the ionian mode, $\hat{6}$ is $\flat\hat{7}$, so ‘vi’ means an A minor common triad (Am). The ‘i’ under that ‘vi’ in Figure 33 designates the same A minor common triad, except that it is now, as ‘i’, the triad on scale degree 1 ($\hat{1}$) in A aeolian (A ‘natural minor’). The lower line of roman numerals in Figure 33 reveals that what was the tonic major triad I (‘one’) in C major becomes \flat III (‘flat three’) in A aeolian. It’s the same C major triad as before but this time in the key of A aeolian, not C ionian. It further reveals that the F and G major triads that were IV (‘four’) and V (‘five’) in C ionian are \flat VI (‘flat six’) and \flat VII (‘flat seven’) in A aeolian. That’s worth knowing because \flat VI \rightarrow \flat VII \rightarrow i (or I) constitutes the highly popular aeolian cadence, no matter which key you’re in — F \rightarrow G \rightarrow Am (or A) in A, C \rightarrow D \rightarrow Em (or E) in E, \flat A \rightarrow \flat B \rightarrow Cm (or C) in C, etc. It’s the aeolian equivalent of the ionian cadence formula IV \rightarrow V \rightarrow I (F \rightarrow G \rightarrow C in C, \flat A \rightarrow \flat B \rightarrow E \flat in E \flat , etc.). These relationships should become clearer after perusal of Table 14 (p. 223).

The major triads in Figure 33 are C, F and G. As we just saw, they occupy scale degrees $\hat{1}$, $\hat{4}$ and $\hat{5}$ in the ionian mode as the triads I, IV and V but occur on degrees $\flat\hat{3}$, $\flat\hat{6}$ and $\flat\hat{7}$ in the aeolian as the triads \flat III, \flat VI and \flat VII. The minor triads Dm, Em and Am are on scale degrees $\hat{2}$, $\hat{3}$ and $\hat{6}$ in the ionian (ii, iii, vi) and on $\hat{4}$, $\hat{5}$ and $\hat{1}$ (iv, v, i) in the aeolian. Moreover, the major scale’s $\Delta\hat{7}$ ($\flat\hat{7}$ in C) and the minor scale’s $\hat{2}$ ($\flat\hat{2}$ in A) produce a diminished triad (vii $^\circ$ and ii $^\circ$) that is rarely heard without the addition of a fourth note. The two most common diminished tetrads are the diminished seventh (e.g. C $^{\dim}$) and the half-diminished chord (‘seven flat five’, e.g. Cm $^{\flat 5}$). They appear top right in Table 13 (p. 222).³ There’s one tertial triad that, unlike the three types shown in Figure 33, cannot be generated by superimposing two mode-specific thirds. It’s the augmented triad and it’s included with the other three types in Table 13.

2. When other chord-specific notes than the root are pitched lowest, such a chord is called an inversion (see p. 225).
3. ii $^{\flat 5}$ and vii $^{\flat 5}$ are very common in the euroclassical and jazz repertoires.

Table 13: *Four types of tertial triads (on C) + 2 diminished tetrads*

<i>triad type</i>	<i>thirds</i>	<i>fifth</i>	<i>notes</i>	<i>lead sheet⁴</i>
major	maj + min	perfect	c e g	C
minor	min + maj	perfect	c e \flat g	Cm
augmented	maj + maj	augmented	c e g \sharp /a \flat	Caug /C ⁺
diminished	min + min	diminished	c e \flat g \flat /f \sharp	Cdim/C ^o

As shown in Figure 33 (p. 220) and Table 13, major triads consist of a minor third on top of a major third (e.g. e–g over c–e for C), minor triads of a major third over a minor third (e.g. e \flat –g over c–e \flat for C minor), while augmented triads comprise two superimposed major thirds (e.g. e–g \sharp over c–e) and diminished triads two minor thirds (e.g. e \flat –g \flat over c–e \flat). In principle, all tertial triads of the type contained in Table 13 contain a root note, its third and its fifth.

Table 14 (p. 223) shows lead sheet and roman-number symbols for each scale degree in all seven heptatonic ‘church’ modes.⁴ It’s included mainly for reference purposes when discussing chord sequences and functions in different keys and modes. However, some aspects of symbol convention in Table 14 need explanation.

[1] Since the locrian mode’s tonic triad is diminished (I^o) and includes no perfect fifth, it is rarely used as a chord in ‘everyday tonality’ and will be discussed no further in this context. Of course, that does not mean that the locrian mode is never used melodically; on the contrary, it is very common in heavy metal.⁵

[Text continues with §2 on page 224 after Table 14.]

- See pp. 94–99 for explanation of *diatonic ‘church’ modes*. See pp. 229–244 for full explanation of *lead sheet* and *lead-sheet chord shorthand*.
- See pp. 162–163, esp. fnnt. 19 (p. 163).

Table 14: Roman-numeral triads for all seven steps in all ‘church’ modes

<i>ionian</i> in C	I	ii	iii	IV	V	vi	vii
	C	Dm	Em	F	G	Am	Bm
<i>dorian</i> in C	Dm or D	Em	F	G	Am	Bm ^{7b5}	C
	i I	ii	bIII	IV	v (V)	vi ^{7b5}	bVII
<i>phrygian</i> in C	Em or E	F	G	Am	Bm ^{7b5}	C	Dm
	i I	bII	bIII	iv	v ^{7b5}	bVI	bvii
<i>lydian</i> in C	F	G	Am	Bm ^{7b5}	C	Dm	Em
	I	II	iii	+iv ^{7b5}	V	vi	vii
<i>mixo-lydian</i> in C	G	Am	Bm ^{7b5}	C	Dm	Em	F
	I	ii	iii ^{7b5}	IV	v	vi	bVII
<i>æolian</i> in C	Am or A	Bm ^{7b5}	C	Dm	Em	F	G
	i I	ii ^{7b5}	bIII	iv	v (V)	bVI	bVII
<i>locrian</i> in C	B [°]	C	Dm	Em	F	G	Am
	i [°]	II	iii	iv	V	VI	vi
	C [°]	D ^b	E ^b m	Fm	G ^b	A ^b	B ^b m

[2] Common triads based on scale degrees in all modes except the ionian involve at least one roman-numeral symbol preceded by an accidental, usually \flat . That's because the roman numbering of tertial triads comes from the theory of euroclassical music whose default mode is ionian. Consequently, the roman numbering of triads in other modes has to indicate divergence from that ionian standard.⁶ That's why 'III', for example, always means a major triad on $\hat{3}$, the major-third scale degree in relation to the tonic, i.e. an E major triad in C, or a C \sharp major triad in A, etc., whereas ' \flat III' designates a major triad on $\flat\hat{3}$, the minor third in relation to the tonic, i.e. an E \flat major triad in C, a C major triad in A. Similarly, 'vi' always indicates a minor common triad on the major sixth ($\hat{6}$), i.e. an A minor triad in C, an F \sharp minor triad in A, etc.

[3] It is not uncommon for music in the dorian, phrygian or aeolian mode to use a PERMANENT PICARDY THIRD as tonic triad: \mathfrak{i} becomes I. The triad on $\hat{5}$ can also be 'majorised' in some cases: v can become V. These devices are explained on pages 276-284 and marked in columns 1 and 5 (I and V) in Table 14.

Ex. 179. I vi ii7 V7 sequence ('vamp') in C and D major



Bearing in mind that pitches extraneous to the tertial common triad, most frequently the flat seventh, are expressed as super-scripted arabic numerals, it is clear that |I-vi-ii⁷-V⁷| designates the same chord progression in *any* major key, whereas |C Am Dm⁷ G⁷| and |D Bm Em⁷ A⁷| designate the same sequence in two keys only (C and D major respectively, ex. 179). Similarly, a repeated |I- \flat VII-IV| progression (C B \flat F in C) is found as D C G (in D) throughout Lynyrd Skynyrd's *Sweet Home Alabama* (1974) and as G F C at the end of The Beatles' *Hey Jude* (1968b; in G). Note that tertial triads built on pitches foreign to the ionian mode must be preceded by the requisite accidental, for example ' \flat VII' for a major triad

6. Chords based on $\flat\hat{3}$ are ' \flat III/ \flat iii', those on $\hat{3}$ are 'III/iii'.

built on $b\flat$ in the key of C major. Similarly, notes within a tertial chord that are extraneous to the current key of the piece must also be preceded by the requisite accidental, e.g. ‘ $ii^{\flat}b^5$ ’ for the second-degree seventh chord in C minor with d as root and containing also f , $a\flat$ and c .

Inversions

Fig. 34. C major triad inverted →

In most popular music the lowest note in a chord is usually also its root. However, in choral

The figure shows four chords on a grand staff (treble and bass clefs).
 1. Chord 1: C major triad in root position (C, E, G). Labels: C, I, I.
 2. Chord 2: C major triad in first inversion (E, G, C). Labels: C/e, I/3, iii6.
 3. Chord 3: C major triad in second inversion (G, C, E). Labels: C/g, I/5, V4.
 4. Chord 4: C major tetrad in third inversion (C, E, G, Bb). Labels: C/bb, I7, vii2.

settings and in music strongly influenced by the euroclassical tradition, tertial chords are often *inverted*, i.e. the chord's root note does not have to be its lowest. The first three chords of Figure 34 show a C major common triad [1] in root position (with c in the bass), [2] in *first inversion* (with its third, e , in the bass) and [3] in *second inversion* (with its fifth, g , in the bass). The final chord of Figure 34 is a tetrad (a chord containing four different notes): it's a C major triad with the flat seventh ($b\flat$) in the bass, i.e. the tetrad C^7 in third inversion (with its seventh, $b\flat$, as lowest note).

European textbook harmony symbols, derived from figured bass techniques of the baroque era (bottom line of symbols in Fig. 34), are largely incompatible with the way in which chords are understood by most musicians today. Therefore, if inversions need to be referred to, they are most commonly denoted in the absolute terms of lead sheet chord symbols (top line in Fig. 34), sometimes in the relative terms of roman numerals, as shown in the line of symbols between the two staves, i.e. as $I/3$ for the tonic triad with its third as bass note, $I/5$ for the same chord with its fifth in the bass, etc.

Recognition of tertial chords

Individual chords can be identified and named according to their constituent notes and harmonic functions. They can also be recognised phenomenologically. Table 15 (pp. 226–229) lists some common tertial chords together with references to their occurrence in well-known pieces of popular music. It also shows, where applica-

ble, with which musical styles or with what kind of mood the chords are often associated.

Table 15: *Familiar occurrences of tertial chords (ends on page 229)*

chord short- hand	full chord descrip- tion	occurrences	style
	(common) major triad	First and final chord of most national anthems, <i>White Christmas</i> (Crosby 1942), the <i>Internationale</i> (Degeyter 1871), <i>Blue Danube</i> waltz (Strauss 1867). Chords in chorus of <i>Yellow Submarine</i> (Beatles 1966). <i>Happy Birthday</i> , last chord.	
m	(common) minor triad; 'minor'	1st long chord in Pink Floyd's <i>Shine On Crazy Diamond</i> (1975). 1st chord in <i>It Won't Be Long</i> , <i>She Loves You</i> and <i>I'll Be Back</i> (Beatles 1963b; 1964a). 1st and last chord in Chopin's Funeral March (1839).	
+	augmented triad; 'aug- mented', 'aug' [o:g]	Gershwin's <i>Swanee</i> (1919) at "how I love you!". Second chord in <i>Being For The Benefit Of Mr Kite</i> and <i>Fixing A Hole</i> (Beatles, 1967)	
6	added sixth chord; 'six', 'add six'	1st chord, at 'When whippervills call', in <i>My Blue Heaven</i> (Donaldson 1927). 1st and last chord in <i>Mack The Knife</i> (Weill, 1928); in chorus of <i>Alabama Song</i> , at 'Moon of Alabama' (Weill, 1927). Last 'Yeah' in <i>She Loves You</i> (Beatles, 1963b).	jazz 1920-40s
m6	minor triad with added (maj.) sixth; 'minor six'	First chord in verse of <i>Alabama Song</i> , at 'Show us the way to the next'... (Weill, 1927). First chord after fanfare in the <i>Wedding March</i> (Mendelssohn, 1843).	
7	(dominant) seventh chord; 'seven [chord]'	Penultimate chord in most hymns and national anthems. First chord in Beatles' <i>I Saw Her Standing There</i> (1963a), <i>I Wanna Be Your Man</i> (1963c), <i>She's A Woman</i> (1964d), <i>Taxman</i> (1966), <i>Get Back</i> (1969b).	
7+	seventh chord with augmented fifth; 'seven plus', 'seven aug' [o:g])	Cole Porter (1933): <i>You're Bad For Me</i> , upbeat to chorus. Miles Davis (1961): <i>Some Day My Prince Will Come</i> , second chord, at 'day'. Mary Hopkins (1968): <i>Those Were The Days</i> , at 'were the' (upbeat to chorus). Beatles (1969a): <i>Oh! Darling</i> , after 'broke down and died' before reprise of hook.	

<i>chord short- hand</i>	<i>full chord descrip- tion</i>	<i>occurrences</i>	<i>style</i>
7 \flat 5	seventh chord with diminished fifth; 'seven flat five'	Jobim (1963): <i>Garota da Ipanema</i> , penultimate chord; (1964): <i>Samba da una nota so</i> , 4th chord; (1969): <i>Desafinado</i> , 2nd chord.	bossa nova, bebop
Δ or maj or maj7	major seven[th] chord; 'major seven'	Cole Porter (1932): <i>Night And Day</i> , first chord of chorus. Erroll Garner (1960): <i>Misty</i> , 1st downbeat chord of chorus. Beatles (1963d): <i>This Boy</i> , 1st chord. Tom Jones (1965): <i>It's Not Unusual</i> , 1st chord. Burt Bacharach (1968): <i>This Guy's In Love With You</i> , 1st three chords. Beatles (1969a): <i>Something</i> , 2nd chord.	jazz standards, pop 1960s-70s
m7	minor seven[th] chord; 'minor seven'	Youmans (1925): <i>Tea For Two</i> , first chord (on 'tea'). Bacharach (1964): <i>Walk On By</i> , first chord. Beatles (1965b): <i>Michelle</i> , second chord; (1968a): <i>Rocky Racoon</i> , 1st chord in hook; (1969a): <i>You Never Give Me Your Money</i> , first chord.	jazz standards, pop 1960s-70s
m Δ 7 m Δ 9	minor, major seven[th]/ninth (or nine)	Hagen (1944): <i>Harlem Nocturne</i> (the 'Mike Hammer' theme), first downbeat chord of tune. Norman/Barry (1962): <i>James Bond Theme</i> , final chord.	detective & spies
m7 \flat 5	minor seven flat five or half diminished	Addinsell (1942): <i>Warsaw Concerto</i> , 2nd chord. Miles Davis (1973): <i>Stella By Starlight</i> , 1st chord. Nat King Cole (1955): <i>Autumn Leaves</i> (Kosma), 1st chord of middle eight.	& classics romantic
dim	diminished seventh chord; 'diminished', 'dim'	Beatles (1963b): <i>Till There Was You</i> , 2nd chord (at 'hill'); Beatles (1967a): <i>Strawberry Fields</i> , at 'nothing is real'.	horror chord silent movies.
9	(dominant) ninth chord; 'nine'	Beatles (1964a): <i>Things We Said Today</i> , at 'dreaming' ('some day when we're dreaming'); (1969a): <i>Because</i> , highlighted chord at 'round'/'high'/'blue'.	swing bebop
+9	plus nine chord	Hendrix (1967b): <i>Purple Haze</i> , 1st chord. Beatles (1969a): <i>Come Together</i> , start. Blood Sweat & Tears (1969): <i>Spinning Wheel</i> , first chord.	rock c. 1970, jazz fusion

<i>chord short- hand</i>	<i>full chord descrip- tion</i>	<i>occurrences</i>	<i>style</i>
maj9	major nine chord	Jobim (1963): <i>The Girl from Ipanema</i> , 1st chord.	
m ⁹	minor nine chord	Warren (1938): <i>Jeepers Creepers</i> , 1st chord of chorus. Weill (1943): <i>Speak Low</i> , 1st chord in chorus. Raksin (1944) <i>Laura</i> , 1st chord in chorus.	jazz stands.
11	chord of the eleventh; 'eleven chord', 'eleven'	Righteous Brothers (1965): <i>You've Lost That Lovin' Feeling</i> , 1st chord. Beatles (1967b): <i>She's Leaving Home</i> , at 'leaving the note', 'standing alone', 'quietly turning', 'stepping outside', 'meeting a man'; (1970): <i>Long And Winding Road</i> , at first occurrence of 'road'. Abba (1977): <i>Name of the Game</i> , at repeated 'I want to know'.	gospel, soul, fusion, post-bop
m11	minor eleven chord	Miles Davis (1959): <i>So What</i> , all chords. Goldenberg (1973): <i>Kojak Theme</i> , first two chords under melody.	post- bop
13	chord of the thirteenth; or thirteen chord	Degeyter (1871): <i>Internationale</i> , upbeat to chorus. Big Ben Banjo Band (1958): <i>Luxembourg Waltz</i> , 1st chord (upbeat). Beatles (1969a): <i>Because</i> , just before ecstatic "Ah!" on D chord.	pre-jazz, swing, bebop
add9	major triad with added ninth	Bacharach (1970b): <i>Close To You</i> , 1st chord (at 'why do birds suddenly appear?'); Nilsson (1974): <i>Without You</i> , 1st chord.	pop ballads
madd9	minor triad with added ninth; minor add nine	Al Hirt (1966): <i>Music To Watch Girls By</i> , 1st chord. Lionel Richie (1983): <i>Hello</i> , 1st chord. Rota (1966): <i>Romeo and Juliet</i> , main theme, 1st chord.	sad, bitter- sweet
/3	major triad in first inversion	Beach Boys (1966): <i>God Only Knows</i> , hook line at 'knows what I'd be'. Foundations (1967): <i>Baby, Now That I've Found You</i> , at 'let you go' and 'even so'. Procol Harum (1967b): <i>Homburg</i> , 3rd and 4th chords in introduction.	'classical'
/5	major triad in second inversion	Beach Boys (1966): <i>God Only Knows</i> , 1st chord. Foundations (1967): <i>Baby, Now That I've Found You</i> , at 'love you so'. Procol Harum (1970): <i>Wreck of the Hesperus</i> , start of major key section.	'classical'
m ₅	minor triad in second inversion	Simon & Garfunkel (1966): <i>Homeward Bound</i> , 2nd chord; Sinatra (1969): <i>My Way</i> , 2nd chord.	reflective ballads, 'classical'

<i>chord short- hand</i>	<i>full chord descrip- tion</i>	<i>occurrences</i>	<i>style</i>
7/7	seventh chord in third inversion	Beach Boys (1966): <i>God Only Knows</i> , at ‘are stars above you’. Foundations (1967): <i>Baby, Now That I’ve Found You</i> . Procol Harum (1967): <i>Homburg</i> , 2nd chord. Abba (1974a): <i>Waterloo</i> , 2nd chord, on the ‘oo’ of ‘At Waterloo’ in verse 1.	‘classical’
/7	major triad with major seventh in bass	Procol Harum (1967): <i>Whiter Shade Of Pale</i> , chord 2. Eric Clapton (1974): <i>Let It Grow</i> , 2nd chord.	‘classical’, reflective
sus4	suspended fourth chord; ‘sus four’, ‘suspension’	Beatles (1965a): <i>You’ve Got To Hide Your Love <u>Away</u></i> . Rolling Stones (1965): <i>Satisfaction</i> , 2nd of two chords in main riff. Marvin Gaye (1966): <i>Ain’t No Mountain</i> , 1st chord in introduction.	pop 1960s- 70s

Lead sheet chord shorthand

G, D7, Em7, C#m7b5, Bbsus4, Amadd9 and so on: these are just a few examples of the shorthand used to designate individual chords in many forms of popular music. The rest of this chapter aims to explain how that system of chord labelling works.

LEAD SHEETS are sheets of paper displaying the basic information necessary for performance and interpretation of a piece of popular music. Elements usually included on a lead sheet are: [1] melody, including its mensuration, in staff notation; [2] lead sheet chord shorthand, usually placed above the melody; [3] lyrics, if any. Such types of written music are used extensively by musicians in the fields of jazz, cabaret, chanson and many types of dance music. Lead sheets consisting of lyrics and chord shorthand only are common among musicians in the rock, pop and Country music sphere. Lead sheets originated for reasons of copyright. In the 1920s, the only way to protect authorship of an unpublished song in the USA was to deposit a written copy with the Copyright Division of the Library of Congress in Washington. To protect the rights of songs recorded by early blues artists, musicians had to provide the Library of Congress with a transcription of the melody’s most salient

features along with typewritten lyrics and basic elements of the song's accompaniment (Leib, 1981:56).⁷ Such a document was called a lead sheet, its function descriptive rather than prescriptive, not least because: [1] the most profitable popular music distribution commodity of the time was not the recording but three-stave sheet music in arrangement for voice and piano; [2] most big band musicians read their parts from staff notation provided by the arranger. However, guitarists and bass players of the thirties usually played from a mensurated sequence of chord names, i.e. from 'basic elements of the song's accompaniment' as written on a lead sheet. With the decline of big bands and the rise of smaller combos in postwar years, with the increasing popularity of the electric guitar as main chordal instrument in such combos, and with the shift from sheet music to records as primary music commodity, lead sheets ousted staff notation as the most important scribal aide-memoire for musicians in the popular sphere. Other reasons for the subsequent ubiquity of lead sheets are that: [1] their interpretation demands no more than rudimentary notational skills; [2] since they contain no more than the bare essentials of a song, an extensive repertoire can be easily maintained and transported to performance venues.

By LEAD SHEET CHORD SHORTHAND is meant: [1] symbols used on a *lead sheet* to represent, descriptively or prescriptively, the chords of a song or piece of music; [2] the widespread system according to which music practitioners most frequently denote chords.

Since there are probably as many variants of lead sheet chord shorthand in circulation as there are musical subcultures, it is impossible to provide a definitive overview of the system. Still, even though a few of these variants diverge from the codification practices described below, most variants follow by and large the principles expounded in this chapter. Table 16 (pp. 232-233) provides a

7. Among those artists were Sippie Wallace, Bertha 'Chippie' Hill and Eva Taylor. Among musicians providing those lead sheets were George Thomas, Richard M Jones and Clarence Williams. Thanks to Paul Oliver for this information (phone conversation, 2000).

selection of fifty tertial chords and their lead sheet symbols, all with the note *c* as root. Table 17 (p.233) shows how the shorthand translates into spoken English used by musicians.⁸

Lead sheet chord shorthand table: explanations

Table 16 (pp.232-233) charts fifty different chords based on the note *c*. Each chord is identified with: [1] its number in the chart so that it can be referred to concisely from the commentary following the tables; [2] the stack of thirds from which each chord derives its lead-sheet shorthand; [3] a valid way of spacing (voicing) each chord at the piano. The first section of the chart (p. 232) is presented in ascending order of the number of thirds supposedly contained in the chords: first simple triads, then seventh chords, ninths, elevenths and thirteenth. That part of the table is followed by a selection of added, suspended and inverted chords (p. 233).

Fig. 35. *Symbols used in Table 16 (overleaf)*

The top line in Table 16 (overleaf) is not for playing. As visualised in Fig-

Stacked thirds (theoretical)

98 ← chord n°s in table → 99

× = note omitted

R.H. Viable voicing on piano

R.H. 8vb!

L.H.

Lead sheet chord shorthand

C11

C+9

C-10 alternative shorthand

enharmonic alternative

ure 35, it just presents the stacking of thirds at the theoretical basis of each chord. The lower two staves, however, present a viable way of playing each chord on a piano keyboard. Please note that the little '8' under the treble clef of the piano part follows the practice of notation for guitarists and tenor vocalists. That means your right hand has to play everything one octave lower than written. The left hand part should be played as notated. Table 17 (p. 233) spells out the chord names in Table 16. That is followed (p. 234, ff.) by a detailed explanation of lead-sheet chord shorthand and its conventions. *[Text continues on page 234 after Table 17]*

8. For a short guide to the aesthetic identification of chords and for fuller structural description of common chords, see Table 15, (p.226,ff.).

Table 16: Lead sheet chord shorthand chart for C (1)⁹

Stacked thirds

Viable piano voicing

TRIADS

1 2 3 4

5 6 7 8

Caug Cm C⁺ C^o C7 Cm7 C^Δ Cm^Δ

SEVENTHS

9 10 11 12

13 14 15 16

C7^{aug} C^ø Cdim7 Cdim C9 Cm9 C^Δ9 Cm^Δ9 C-9

NINTHS

18 19 20 21

22 23 24 25

C-10 C9^{aug} C⁺9 C9⁺ C9^b5 C-9^b5 C11 Cm11 C11^b5 C11-9^b5

ELEVENTHS

THIRTEENTHS

26 27 28 29 30 31 32

C13 C13-9 C-13-9 C13+9 C-13+9 C13+11 C^Δ13+11

[Explanations and text continue on page 234 after Table 17]

9. For explanation of chords 45-50 (descending bass), see p. 241.

Table 16 (cont'd): *Lead sheet chord shorthand chart for C (2)*

ADD & SUS

INVERSIONS, &c

Table 17: *Full names of most lead sheet chords in Table 16.*

<i>chord</i>	<i>chord n^o</i>	<i>as spoken in English</i>
C ⁺ or C ^{aug}	3	C plus, C augmented, C aug [o:g]
C ^o	4	C diminished triad
C7 C9 C11 C13	5, 13, 22, 26	C seven C nine C eleven C thirteen
C ^Δ C ^{maj} (7) C ^Δ 9	7, 15	C major seven C major nine
C7 ^b 5 or C7-5	10	C seven flat five, C seven minus five
C7 ^{aug} , C7 ⁺	9	C seven aug[mented], C seven plus
C9 ⁺ (C9 ^{aug}) C ⁺ 9	19 18	C nine plus (C nine aug[mented]), C plus nine
C13+11 (C11+13)	31	C thirteen plus eleven (C eleven plus thirteen)
Cm7 Cm9 Cm11	6, 14, 23	C minor seven C minor nine C minor eleven
Cm ^{maj} or Cm ^Δ 9	8, 16	C minor major seven, C minor major nine
Cm7 ^b 5 or C ^o or Cm7-5,	11	C minor seven flat five, C half diminished, C minor seven minus five,
C ^{dim} or C ^{dim} 7	12	C dim[inished] [dim], C diminished seventh
C6 Cm6	33, 34	C six, C add six, C added sixth C minor six, C minor add[ed] sixth
CSUS(4) CSUS9	37, 39	C sus (four), C four suspension, C suspended fourth; C sus nine
Cadd9 Cmadd9	35, 36	C add nine, C minor add nine
C/3 or C/e	41	C major first inversion, C (with) third in bass, C (with) e bass, C first inversion

[1] Table 16 (pp. 232-233) contains one chord per ‘bar’. If two chords appear in the same ‘bar’ it’s because they’re one and the same chord. For example, C⁺9 (n° 99 in Figure 35; or chords 12 and 18 on page 232), can be written in radically different ways depending on tonal context.

[2] Certain notes must, for reasons explained later, be omitted from certain chords, for example the major third (e~~4~~) in the C¹¹ chord shown as n° 98 in Figure 35. Such obligatory omissions are indicated by an elongated X through the note in question.

[3] Sometimes the piano part in Table 16 misses out notes that appear in the stack-of-thirds row with no ‘obligatory omission’ line through them (e.g. both chords in Figure 35).

Basic rationale of lead sheet chord shorthand

Lead sheet chord shorthand has an *entirely tertial basis*. Since this system of abbreviation evolved during the heyday of tertial harmony in popular music, its simplest symbols denote common triads built on the designated note (e.g. ‘C’ for a C major common triad). Moreover, characters placed after the triad name tend merely to qualify that tertial triad, either in terms of notes added to it or by denoting chromatic alteration of any degree within the chord except for the root and its third. Similarly, the odd-number integers seen most frequently after the triad symbol (7, 9, 11, 13) represent pitches stacked in thirds above the two thirds already contained within the triad (1-3, 3-5) on which a more complex chord is based (e.g. C⁹ containing b \flat and d — flat seventh and major ninth — in addition to c-e-g). The shorthand system also assumes that root and bass note are the same. Developed in style-specific contexts, lead sheet chord shorthand allows for the concise representation of chords in many types of popular music, for example jazz standards, chanson, *Schlager* and many types of pop, rock and Country music. The system is, however, cumbersome and in need of radical reform when it comes to codifying inversions and to non-tertial harmony (see Chapter 10).

Symbol components

Lead sheet chord symbols (see Table 18, below) are built from the following components placed in the following order: [1] note name of the chord's root, present in every symbol; [2] triad type, if not major; [3] type of seventh, if any; [4] ninths, elevenths and thirteenths, if any, with or without alteration; [5] altered fifth, if any; [6] added notes outside the tertial stack, or omitted notes and suspensions, if any; [7] inversions, if any. Since components [2] through [7] are only included when necessary, chord symbols range from very simple (e.g. C, Cm, C7) to quite complex (e.g. F#m6add9, Bb-13+9). Table 18 summarises the order of presentation for symbols most commonly used in connection with tertial chords containing neither added notes, nor suspensions nor inversions.

Table 18: Normal order of components in lead-sheet chord shorthand

1: root note name	A, B \flat , B, C, C \sharp /D \flat , D, D \sharp /E \flat , E, F, F \sharp /G \flat , G, G \sharp /A \flat				
chord/interval type	perfect	major	minor	augmented	diminished
2: <i>triad</i> type		[omit]	m (=min/mi)	aug <i>or</i> +(5)	^o [unusual]
3: type of <i>seventh</i>		maj(7) <i>or</i> Δ	7		dim(7) <i>or</i> o(7)
4a: <i>thirteenth</i>		13	-13		
b: <i>eleventh</i>	11			+11	
c: <i>ninth</i>		9	-9	+9	
5: <i>fifth</i>				+ <i>or</i> aug	-5 <i>or</i> \flat 5

Note name of the chord's root

Note names may be in English, as in the top row of Table 18, or are written according to Germanic or Latin language conventions.¹⁰ English root note names are always in upper-case.

10. German note names are the same as in English except: [1] B \sharp is called *H*, [2] B \flat is called *B*, [3] F \sharp , C \sharp etc. are called *Fis*, *Cis*, etc., and [4] E \flat , A \flat , D \flat are called *Es*, *As* and *Des*. C D E F G A and B are called *do ré mi fa sol la si* in French (a Latin language), F \sharp is *fa \sharp* (*fa dièse*) and B \flat is *sib* (*si bémol*), etc.

Tertial triad type

No extra symbol is necessary for standard major triads: just ‘C’ on its own is always a C major common triad. The qualifier ‘MAJOR’ *applies exclusively to sevenths, never to thirds* (see p. 236). On the other hand, ‘MINOR’ (‘m’) *applies to the third and to no other note* in the chord. Chords built as or on a common minor triad must include the triad type qualifier ‘m’ (or ‘mi’ or ‘min’), always lower-case, immediately after the chord root’s note name. For example, ‘Cm’ means a C minor common triad, i.e. c-e \flat -g.¹¹


Augmented triads consist of two superimposed *major thirds* (e.g. c-e-g \sharp), *diminished* triads of two superimposed *minor thirds* (e.g. c-e \flat -g \flat). The adjectives *augmented* and *diminished* qualify in this case *alteration of scale degree 5*. Augmented fifths are usually indicated by a ‘+’, or by ‘aug’ (e.g. ‘C+’, or ‘Caug’). While the diminished triad is uncommon on its own, the augmented triad (C⁺, B \flat ⁺, etc.) occurs quite frequently in popular music.

To avoid linguistic incongruities like ‘Amadd9’ in chord shorthand —there’s nothing mad about it— it’s preferable to write root name and triad type in normal typeface, subsequent symbols in a smaller typeface and/or as superscript, for example ‘Am^{maj7}’ or ‘Am^{add9}’.¹²

Type of seventh

Since, in the often jazz-related styles for which lead sheet symbols were originally developed, the minor (flat) seventh (e.g. b \flat in relation to c) is more common than the key-specific major seventh (e.g. b \natural in relation to c), and since the qualifier ‘minor’ is applied exclusively to the *third* in tertial triads, a common major triad with an added MINOR SEVENTH requires no other qualification than the numeral 7 (Table 16: 5): FLAT SEVEN IS DEFAULT SEVENTH in the same way as default triads feature major thirds. On the other hand, tertial chords containing a key-specific MAJOR SEVENTH need to be flagged with a maj or Δ (Table 16: 7). Since maj and Δ are reserved as QUALIFIERS OF THE SEVENTH and of no other scale degree, the ‘7’

11. For other minor triad symbols, see ‘Flat, sharp, plus and minus’ on page 242.

12. Free lead sheet shorthand font downloadable at  tagg.org/zmisc/FontKeys.html.

may be omitted in conjunction with these symbols (e.g. Cmaj or C^Δ = Cmaj7). However, the simple '7' is always present to denote the default tetrad of the seventh whose seventh degree is always flat or minor, see Table 16: 5-12).

Seventh chords containing an AUGMENTED FIFTH indicate such alteration by 7⁺ or 7^{aug} (Table 16: 9). DIMINISHED FIFTHS in seventh chords containing a major third appear as 7⁻⁵ ('seven minus five') or 7^{b5} ('seven flat five', see Table 16: 10). Seventh chords containing minor third, diminished fifth and flat seventh — m7^{b5}, a very common chord in euroclassical and jazz-related styles —, are usually abbreviated m7^{b5} or m7⁻⁵, or sometimes just ø ('minor seven flat five' or 'half diminished', Table 16: 11). The dim chord constitutes a special case, containing both diminished seventh and fifth, and is most frequently indicated by dim placed straight after the root note name, sometimes by dim7 ('diminished seventh' or just dim; Table 16, chord no. 12).

Ninths, elevenths, thirteenths

Chords involving ninths, elevenths and thirteenths are assumed to include, at least theoretically, some kind of tertial triad and some kind of seventh (p.232: 13-32). Chords containing elevenths presuppose the presence of a ninth, and thirteenth chords the presence of an eleventh as well as a ninth, all in addition to a seventh and the major or minor triad of the root note. To save space, shorthand denoting all such chords is usually presented in descending order of intervals requiring qualification — thirteenths, elevenths, ninths, fifths — once the root note name, the minor triad marker (if necessary) and the major seventh symbol (if necessary) have been included (Table 16: 17-32). The only exception to this practice is the chord containing major thirteenth and augmented eleventh (13+11) which is sometimes referred to in reverse order as 11+13 (p.232: 31-32). Shorthand for chords of the thirteenth, eleventh and ninth include no mention of the eleventh, ninth or seventh below them, unless any of those degrees deviate from their default values (perfect eleventh, major ninth, minor seventh). For example, the '11' in 'C11' assumes the presence of the default ninth and flat sev-

enth (d and b \flat), whereas the '9' in C⁺¹¹⁺⁹ is included on account of its alteration from d to d \sharp /e \flat .

Certain notes are often omitted from ninth, eleventh and thirteenth chords. While most of the omissions are preferential, one is mandatory: removing the major third from a 'major' eleven chord because of an internal minor-ninth dissonance created between the major third lower in the chord and the eleventh usually at the top, for example the e \flat_3 against the f $_4$ in C¹¹ (see chord 98 in ex.35, p. 231, n^o 22 in Table 16, p. 232).¹³ Other omissions relate largely to register. For example, with an accompanimental register in the middle of the piano keyboard and with bass notes usually between one and two octaves lower, sounding the fifth in chords of the ninth and thirteenth can often sound 'muddy'. It is for this reason that fifths are omitted in chords 17, 18 and 26-31 on page 232.

Altered fifths

Although simple augmented and diminished triads are encoded + or aug and dim or ° respectively, the symbol for altered fifths (+ and -5 or b5) in chords of the seventh, ninth, eleventh and thirteenth is *always placed last* after all other relevant information (e.g. C7 \flat 5, Cm7 \flat 5, C7⁺, etc; see Table 16, chords 9-12, 19-21, page 232).

Additional symbols

Omitted notes

The more notes a chord theoretically contains, the more difficult it becomes to space those notes satisfactorily on the keyboard or guitar. As we just saw with the 'eleven chord', the principle of tertial stacking even leads to unacceptable dissonance that can prove impossible to resolve without removing a note from the stack. Such removal also applies to any thirteenth chord whose theoretical ter-

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13. The issue is not in fact the minor ninth as such (one octave plus a semitone) because the minor nine chord (C-9, no. 17 on p.232) is itself defined by the same interval. It is rather a question of how the dissonance is spaced and whether it is produced in relation to the root or to another note in the chord. In the C-9 on page 232 there are two octaves and a semitone between the root note C $_2$ and its minor ninth d \flat_4 .

tial stack contains an unaltered eleventh: that note is always left out of thirteenth chords based on the major triad (p. 232, chords 26-30). Similarly, the perfect fifth is often omitted from thirteenth chords as well as from certain ninth chords.¹⁴ All these omissions constitute standard practice and need not be indicated in lead sheet chords.

One chord which was often understood to require indication of note omission was the 'bare' fifth, often used as rock power chord and previously noted (in E) as 'E no 3' or 'E omit G#'. A much less clumsy way of indicating open fifths is used in metal contexts where a simple '5' suffices, e.g. 'E5' for the dyad e₁-b₁, 'C5' for c and g, 'F5' for f and c, etc. (see chords 1 and 2 in Figure 36, p. 240).

Added ninths and sixths

Added chords are those consisting of a simple triad to which another single note has been added without inclusion of intervening odd-number degrees that result from tertial stacking. For example, add₉ and madd₉ chords are triads to which the ninth has been added without including an intermediate seventh (p. 233, chords 35-36). Similarly, the two sixth chords (p. 233, chords 33-34) are qualifiable as added because they both consist of a triad to which a major sixth has been added without any intervening sevenths, ninths or elevenths making them into chords of the thirteenth. It should be remembered that the 'm' in 'm6' refers to the *minor* third, not to the *sixth* which is always major (e.g. Cm⁶ = c-e_b-g-a₁; p.233, chord 34). Unlike added ninths, added sixth chords are rarely indicated with the prefix 'add' before the '6'.

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14. In fact, the more notes a chord has to include, the more difficult it becomes to space its constituent notes in a convincing way and the more likely it is that pianists will skip a note whose presence is not essential to the sonic identity of the chord. Guitarists are probably less affected by the problem: not only is it impossible to play all seven notes of a thirteenth chord using a six-stringed instrument; it can also be hard to convincingly accommodate all five or six notes in some ninth and eleventh chords. Besides, since both guitarists and pianists playing in the styles in which these sorts of chord occur — bebop jazz, for example — rely on the bass player for most root notes and fifths, problems of spacing and internal dissonance decrease.

Suspended fourths and ninths

Suspensions are chords that should be resolved into a subsequent tertial consonance. The most common suspensions in popular music, **sus4** and **sus9**, both resolve to common major or minor triads, the fourth of **sus4** to a third, the ninth of **sus9** to the octave (e.g. the **f** in **C^{sus4}** to the **e** of **C** or the **e \flat** of **C \flat m**, the **d** in **C^{sus9}** to the **c** of **C** or **C \flat m** (resolutions marked with arrows by chords 37-40 on page 233). The absence of any numeral after **sus** assumes that the suspension is on the fourth. Although **add9** chords (p.233: 35-36) and **sus9s** (39-40) may be identical as individual chords, **sus9** should typically resolve in the manner just described, while **add9** need not.

Even more important than the distinction between **add** and **sus** is the use of chords that, taken out of context, may look or sound like **sus4**, **sus9** or **add9** but which in quartal harmony are nothing of the sort. Chords 3-6 in Figure 36 are basic triads in quartal harmony and should be designated as suggested below, not according to the norms of tertially based lead-sheet chord shorthand. For example, chord 5, below, is a ‘C four’ (**C⁴**, *not* **C^{sus4}**) and chord 6 an ‘F two’ (**F₂**, *not* **F^{sus9}** or **Fadd9**). ‘**G⁴**’, ‘**C⁴**’, ‘**F⁵**’, ‘**C⁵**’ and other conventions of quartal harmony are all explained in Chapter 10.

Fig. 36. Six basic quartal dyads and triads with abbreviations



Inversions

Inversions of tertial chords are exemplified by chords 41-45 in Table 16 (p. 233). Every standard tertial chord contains a root note (‘1’), a third (‘3’) and a fifth (‘5’). If the *root note* is pitched *lowest* of those notes, like chord numbers 1-39 in Table 16, that chord is in **ROOT POSITION**. If the *third* is lowest, for example the **e \sharp** in a C major triad or the **e \flat** in a C minor triad, the chord is said to be in **FIRST INVERSION** (e.g. chords 41-42 in Table 16: **C₃** and **C \flat ₃**). If the *fifth* is lowest, the same chord is in **SECOND INVERSION**, like the **g \sharp** in chords

43-44: $C_{/5}$ and $Cm_{/5}$. Tertian seventh chords can be also be inverted on the *seventh*, in which case they are in THIRD INVERSION, for example chord 45 on page 233, a $C7$ with $b\flat$ in the bass: $C_{/7}$ or $C7/b\flat$.

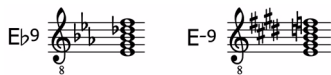
In many types of popular music, inversions most often occur as either: [1] offbeat shuttle notes, usually the fifth, to the root note, for example the ‘pa’ in bass ‘oom-pa’ patterns; or [2] as part or whole of a pattern passing from one chord in root position to the next. Since these passing-note patterns, often involving a third or seventh, are created aurally, typically by the bass player, without reference to notation, no standard lead sheet codification exists for these practices. This lacuna in lead-sheet chord shorthand makes chord labelling difficult in euroclassical harmony contexts.

One way of indicating inversions is, as suggested above, to write the relevant bass note by interval number or note name following the rest of the chord’s symbols and a forward slash, for example $C7_{/3}$ or $C7/e$, for a C seven chord with its third ($e\sharp$) in the bass. Inversions audible in pop recordings are often absent from published lead sheets and tend only to be indicated, if at all, when they occur on an important downbeat or its syncopated anticipation. The same goes for *chords that are held or repeated while bass notes change in conjunct motion*. For example, a bass line descending chromatically from Cm to $A\flat$ (chords 47-50 on page 233) would first pass through the chord labelled $Cm_{/\#7}$ or $Cm/b\sharp$. That indication may be accurate but the chord is unlikely to be called ‘C minor with a major seventh in the bass’ or ‘C minor over b natural’, much more likely to be thought of as a ‘another C minor’, because it’s simply part of the bass player’s job to take the music from Cm to $A\flat$ in an appropriate manner. In any case, you are unlikely to see | D $D/c\sharp$ | $Bm D_{/a}$ | G^A | as lead-sheet shorthand for the first five chords in Bach’s *Air* (1731), however accurate that may be. You’d more likely see just | D | Bm | G |. As explained in Chapter 11, musicians are expected to come up with the tonal details by ear and from experience.¹⁵

Anomalies

Flat, sharp, plus and minus

Fig. 37. $E\flat^9$ and E^{-9}



Sharp and flat signs (\sharp , \flat) are mainly reserved as accidentals qualifying the root note name. Figure 37 shows the ' \flat ' in ' $E\flat^9$ ' indicating that the root note e itself is flat ($E\flat$) and not its ninth ($f\sharp$ becoming $f\flat$). It is in this way possible to distinguish between an *E flat* nine chord, ($E\flat^9$: $e\flat$ - g - $b\flat$ - $d\flat$ - f), and an *E minus* nine chord (E^{-9} , i.e. E^7 with a flat ninth — e - $g\sharp$ - $[b]$ - d - $f\sharp$). Otherwise the rule is that in any chord, *all altered degrees apart from 3 and 7* (pp.236-236) are indicated by '+' for a note raised by a semitone and by '-' or ' \flat ' for a note lowered by one semitone. $C^7\flat^5$ and C^7-5 are in other words the same chord. It should be noted that there are conflicting conventions concerning the use of these symbols. For example, the *Real Book*[†] uses minus signs instead of 'm' to denote minor triads, flat and sharp signs instead of '+' and '-' to indicate chromatic alteration.

Enharmonic spelling

Lead sheet chord shorthand tends to disregard the rules of enharmonic orthography.¹⁶ For example, although the $\flat II \rightarrow I$ cadence at the end of the *Girl from Ipanema* (Jobim, 1963) might appear as $A\flat^9\flat^5 \rightarrow G^{maj}7$ on a lead sheet in G , the same $\flat II \rightarrow I$ cadence would in $E\flat$ almost certainly be spelt $E^9\flat^5 \rightarrow E\flat^{maj}7$ rather than the enharmonically correct $F\flat^9\flat^5 \rightarrow E\flat^A$. Similarly, distinction is rarely made between chords containing a falling minor tenth and those with a rising augmented ninth. The assumption seems to be that since both +9 and -10 refer to the same equal-tone pitch, the difference between them is immaterial. +9 ('plus nine') is much more com-

15. In fact, legal or illegal, on paper or the internet, publications of sheet music and of 'lyrics with guitar chords' are notorious for omitting chordal detail intrinsic to the sound of the song in question. For example, in the (legal) Warner sheet music version of Lionel Richie's *Hello* (1985) not a single A^{madd9} appears as either notes or among the 'guitar chords', even though that chord dominates the song's verses.

16. For more about *enharmonics* see p. 485, ff.

monly used than -10 ('minus ten'), even if the latter is more often enharmonically correct.

Non-tertial chords

Since non-tertial chords do not derive from stacked thirds, they are not translatable into lead sheet shorthand. Apart from open fifths, already mentioned, there are problems in encoding harmonies used in some types of jazz, as well as in some types of folk music and avant-garde rock.

The perverse habit of calling unsuspended quartal chords 'suspended' has already been mentioned (p. 240) and is raised again in the chapter on quartal harmony (p. 293).

Another anomaly is that musicians often conceptualise chords of the eleventh and thirteenth bitonally rather than in terms of stacked thirds, for example C^{13+11} as a D major triad on top of C7; or C^{11} as $Gm7$ or $Bb6$ with c in the bass. No satisfactory consensus exists as to how such chords might be more adequately encoded. One possible solution to part of the problem may be to refer to some of these chords in the way suggested in Table 36 (p. 240) and in the chapter on quartal harmony (p. 293, ff.).

Summary in 7 points

[1] CHORD means the simultaneous sounding of two or more differently named tones. DYADS contain two such tones, TRIADS three, TETRADS four and PENTADS five.

[2] The two most commonly used systems of chord designation are ROMAN NUMERALS and LEAD-SHEET CHORD SHORTHAND.

[3] ROMAN NUMERAL designation is RELATIVE in that it indicates the scale degree, in any key, on which a chord is based (e.g. a C major common triad is I in the key of C but $bIII$ in A). LEAD-SHEET CHORD SHORTHAND is ABSOLUTE (C can only be C).

[4] ROMAN-NUMERALS are mainly used to designate TERTIAL chords. LEAD-SHEET chord shorthand is ENTIRELY TERTIAL.

[5] There are four types of TERTIAL TRIAD: major, minor, augmented and diminished.

[6] Lead sheet chord symbols are built from the following components placed in the following order:

- note name of the chord's root, e.g. C;
- triad type, if not major, e.g. Cm, C⁺;
- type of seventh, if any, e.g. C7, C^Δ, Cm7, Cm^Δ7;
- ninths, elevenths and thirteenths, e.g. C-9, Cm^Δ9;
- altered fifth, if any, e.g. Cm7^b5;
- added notes outside the tertial stack, or omitted notes and suspensions, if any, e.g. Cm6, C7^{sus}4;
- inversions, if any, e.g. C/3, C/e.

[7] LEAD-SHEET CHORD SHORTHAND *cannot* be usefully applied in its current state to quartal harmony.