# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone

COMPOSITION & ARRANGING | JAZZ THEORY | MULTIMEDIA | SAXOPHONE



Composition

These pages are not intended to be treated as an authoritative text on the subject, (there are already many books in existence which cover the orthodox rules), so much as a practical *working* guide to writing and arranging music in a way which I have found to work well in the real world of popular commercial (and sometimes not so commercial) music. I have tried to achieve a balance between "doing it by the book" and looking at some of the realistic short cuts available. In some areas I have taken a slightly academic approach where I feel that the knowledge of certain rules (or *conventions* as I prefer to call them) are invaluable. In others I have relied purely on my experience of what happens in the music business.

Musical boundaries are being broken all the time and so these tutorials cover more than one genre, not purely orchestral and not purely pop and commercial. Although I have concentrated mostly on western diatonic music, the area with which I am most familiar, many of the techniques I describe can be applied to all types of music, traditional or avant garde and from whatever culture. It would be narrow minded and uncreative to assume that we can't apply one set of conventions to various styles of music. For many years I have been composing and arranging in many different styles including pop, jazz, rock, rhythm & blues, big band, techno, orchestral, classical, country and folk. I have been involved in writing and producing music for the film, television, radio and the record industry as well as for my own gratification and pleasure. I have often needed several different textbooks when a problem arises. I hope that these tutorials will answer many of the questions that would normally take three or four different books to cover. Inevitably I have had to omit some of the more intricate aspects and would recommend much further study in specialist areas.

These notes are designed give the intermediate musician some short cuts to creative writing. In some instances there

are no short cuts but ways of avoiding some pitfalls are useful. The conventions that exist are of course a very important aspect, but not as important as that most intangible requirement: *inspiration*. I believe that at certain times we are all able to create music with a magical quality that breakks the rules and transcends all the studying we may do. No book can tell us how to do this, but at those other times, there's a lot to learn.

# PETE THOMAS: music producer / composer / saxophone

Pete Thomas is an established UK producer, session musician and composer of soundtrack music for film and television. He plays saxophone, flute, clarinet, guitar and percussion.

You will find audio soundfiles, (mp3) videos, biography and lots of useful links for any musician, saxophone player, producer or composer of modern music.

You will also find all the course material and tutorials Pete used during his time as a lecturer in composition at the University of Southampton. These include jazz theory, improvisation and multimedsia composition

Strange and Unusual Music

There are links to other musicians, composers and producers. Jazz, pop, R&B, rock & roll and plenty of cool, strange and unusual music

In addition to Pete's work as a producer, composer and saxophone player, you will also find details of his work as a composition and saxophone teacher

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**Course links:** Southampton University | Commercial Composition | Jazz and Pop Course

Web design: Pete Thomas

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





These pages are intended to accompany the Southampton University Jazz Theory course and were originally written in 1999. There are several different and sometimes opposing approaches to the teaching of jazz, this course attempts to draw on more than one of these approaches. It is intended only to give the student a brief background and some theoretical knowledge of the skills required for jazz improvisation, arranging and composition. My thanks to Dave Marchant who now teaches the course for some very useful edits, updates and additions.

The course is specifically geared towards "mainstream" jazz which was formulated during the middle period of the twentieth century. This era of jazz is based on the harmony of popular music at the time, with some innovations developed by the bebop greats such as Charlie parker, Dizzy Gillespie, and Thelonius Monk. Later forms such as modal jazz, and various styles of fusion are not covered, though much of the same theory still applies. Initial learning usually requires some well defined rules. This course attempts as far as is possible to lay down some rules which should be approached as an aid to learning the basics rather than as a dogma to be applied to a subject that ideally is at its best when breaking rules or pushing boundaries. I have used one of the modern approaches of using scales to approach improvisation over chord changes, although I have emphasised several times that this approach, though useful at first, should never dominate the true art of improvisation which relies more on melodic inspiration and original use of the "jazz language". As no improviser can ever be 100% original, this often means learning phrases and licks from the vast repertoire of jazz greats and gaining an intuitive feel for "borrowing" and developing them

The course is not a complete *on-line tutor,* for beginners as it originally relied on weekly lectures to fully explain the topics and demonstrate the examples, however anyone with a reasonable basic knowledge of theory should be able to pick up a lot of new ideas and approaches. You should read and understand the lessons, but most importantly **play** the exercises. Even if you are not a piano player, it is important to be able to play the chords on a keyboard, and transpose them into different keys.

# MULTIMEDIA

Pete Thomas, Music producer, composer, saxophone

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**MULTIMEDIA**
**AUDIO-VISUAL**
**WEB COLOURS**

keep an eye on this space as there will be a lot more recording articles added very soon.

**RECORDING**
**COMPRESSION**

# SAXOPHONE

Pete Thomas, Music producer, composer, saxophone

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I have developed these exercises and tutorials over the last twenty five years during my career as a performing and recording musician. Keep an eye on this page as I will soon add a whole load of technique exercises.

- Pete

# COMPOSITION & ARRANGING

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## COMPOSITION

Composition is the creation of an original musical work. It involves the creation of a melody, and in the case of a song, lyrics. The composer often supplies a harmonic and rhythmic content but in most countries the copyright in the composition exists only in the melody and lyrics. (Possible exceptions would be a work for percussion instruments with no pitch). In the case of modern dance/rap music the copyright in the composition is often claimed by the programmer, but this is a "grey area" currently disputed under current law.

## ARRANGING

Arranging involves taking the bare essentials of a musical work, in some cases just the melody, and creating a means by which that work can be transformed into a musical performance. It is often the case that an arranger will also use the harmonic and rhythmic structure suggested by the composer, but will frequently desire or be briefed to change or develop these aspects.

Traditionally arranging is done by means of a written score but can also be done by communicating verbally with the musicians and relying on their memory to recreate the arrangement (Often called a "head" arrangement). In current pop and dance music computers are often used to generate sequenced backing tracks, usually referred to as programming. This is also a form of arrangement where electronic instruments are concerned (e.g. synthesisers and samplers), but is not within the scope of this book and needs to be dealt with as a separate subject. Computer programmes are also available that will translate sequenced information into musical notation, so that parts conceived aurally may be communicated in a conventional score. In this case knowledge of conventional arranging techniques can still be very useful and in many cases essential.

Arranging may involve the creation of original melodic ideas such as counterpoint and backing figures, answering phrases, introductions and so on, however the copyright ownership of the composition will always remain with the composer, along

with the rights to all performing and mechanical royalties. A separate (beneficial) copyright exists in the arrangement and belongs to the arranger. This allows the arranger to grant specific or restricted use of the arrangement by whoever has licensed such use (usually by a payment to them arranger). An arranger can be commissioned to write a piece of music either for all uses (a "buyout"), or for specific limited use. E.g. an arrangement may be commissioned solely for use on the radio. In this case a fee would be negotiated only for such usage. If the client then wishes to use the arrangement on TV, in a film, on a recording, in a lift, on a karaoke, at an exhibition etc, then they must apply to the arranger for a further licence to allow this, usually with another payment.

## ORCHESTRATION

Orchestration involves taking a given arrangement and assigning it in parts to different instruments, usually in the form of a written score. An arranger may employ an orchestrator.

It is essential to gain a basic working knowledge of the instruments for which one is writing. This includes their ranges of pitch and dynamics. Many instruments produce a tone that varies depending on the pitch; for example the flute is quite weak in its lower register and in a normal acoustic environment would not be able to compete with louder instruments. Some instruments are transposing instruments; i.e. the pitch that sounds is not in the same key or octave as the written notation. Scores can be written these days with transposing instruments either notated in concert pitch (non transposed) or in their own key.

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## COMPOSITION - TIPS AND HINTS

- Know when to use rules, and when not to
- Think of the melody as a conversation, with phrases logically following one another, possibly as questions and answers.
- Repetition, development and contrast can all be used to create and release tension, but be careful, too much repetition is boring. Too much development can become obscure and too much contrast can be disconcerting. Melody writing, like all aspects of music, is about creating tension and releasing it in the "right" place. You will grab the listener's interest if the tension is not always released where expected, but holding tension for too long may not be appropriate; always be aware of the genre in which you are writing.
- If you have already conceived the chord sequence this will often tell you where the first phrase will develop, but also feel free to go somewhere else and change the chords if inspiration arrives.
- Many good tunes are very simple either rhythmically or melodically or both. Compare composing with writing poetry where one strives to say a lot with a few words.
- If you are writing a pop song try starting with a title, a riff or hook.
- The first ideas are often the best.
- Study many types of music, not just the area in which you wish to compose, and allow ideas to crossover" from one style to another.
- Analyse melodies and try to find out what makes them good.
- Try inverting or reversing your melodies. Study twentieth century compositional techniques, e.g. tone rows, chance (throwing dice to choose the notes - randomising function on a sequencer).
- Force yourself to write a tune every day. Sooner or later there have to be some good ones.
- Don't just compose with your instrument, sing or whistle as you go about your daily life and write down the good tunes. Try to remember dreams with music in them.
- Try to bring original melodic material into your improvisation rather than relying on licks and clichés. Improvisation should just be a speeded up process of

composition.

- Keep a notebook, tape recorder, note down any melodic fragments
- Try to be objective. Imagine yourself not as a composer or musician but the person listening to your music for the first time. You may suddenly some superfluous passages or devices that are just there to impress people with your musical knowledge.
- It helps to be aware of your reasons for composing, whether its money, respect (self or from family and friends) fame and stardom, spiritual awareness or a desire to entertain or spread love and peace. Try and be aware of what emotions you are trying to arouse in the listener.
- Don't use rules to merely to compose, but use them to improve a tune if you think it could be better. Composition may be up to 99% inspiration: try to learn where that inspiration comes from. Some composers get it from meditating or being at peace with the world, others from the panic of fulfilling a deadline. Everyone finds inspiration in different ways.

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## ELEMENTS OF MUSIC

Music is the organisation of sound into *melody* (pitch) and *rhythm* (time). This is the basic structure on which a composer (or orchestrator) will add further elements including *harmony*, *timbre* and *dynamics*.

Composition (on its most basic level of "writing a good tune") will often involve only the rhythm and melody, however in "western tonal music" the melody usually implies the harmony. Exceptions to this include a lot of pop/dance or rap music of the last two decades. Traditionally a composer or composer/lyricist team wrote the basic tune (melody and rhythm) and words along with any further orchestrational development, or else would get a dedicated orchestrator to do the latter.

In vocal music either the words (lyric) or the music could be written first, or both at the same time.

Most forms of pop and jazz music combine all the above elements. The basic melody usually consists of notes of different pitches (even rapping often varies the pitch and intonation) which are organised in time (rhythm). This is usually arranged against a backing provided by a rhythm section which can consists either of musicians or a programmed track (typically drums/percussion – bass –piano/guitar). This backing often contains a complex rhythmic and melodic counterpoint to the main melody, which can be divided into three main areas:

| | | |
|---|---|---|
| Bass drum patterns | Evolved from early forms of dance music and jazz where bass (and/or bass drum) plays on beats 1 and 3. | Often synchronised with bass instruments |
| Snare drum patterns | Evolved from early forms of jazz where snare (and/or R.H of piano) plays on beats 2 and 4 (backbeat) | Often synchronised with guitar or keyboard |
| Cymbal patterns | Subdivisions of beat, eg 8 or 16 | Often synchronised with guitar or keyboard |

In addition the harmonic changes can form a rhythm, ie the position and duration of harmonic changes can imply a strong rhythm, especially if a recurring pattern is implied.

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## DEVELOPMENT OF MOTIFS

Very often a large part of composition involves expanding a very short simple idea into an entire work. A motif may be just a few notes, but careful development can make a little go a long way.

Development may be achieved by thinking about unity and variety. If the motif is repeated that is unity. If a contrasting motif follows (An "answer") that is variety. There are several stages in between if a motif is repeated but with varying degrees of changes. Using the different musical dimensions mentioned earlier (melody, rhythm, harmony, timbre and dynamics) there are many possibilities of creating logical development. You can use exact or approximate repetition of different dimensions. In composition (as opposed to arranging and orchestration) it makes more sense to start with just the three main elements (melody, rhythm and harmony)

| ***Repeat*** | ***Vary*** |
|---|---|
| Melody | Rhythm and/or harmony |
| Rhythm | Melody and/or harmony |
| Harmony | Melody and/or rhythm |

In addition one can use *approximate* repetition, especially of melody. This is often necessary if the harmony is changing and can be done by:

1. Repetition of the main contour of melody (shape)
2. Repetition of selected notes of the melody (essential pitches)
3. Repetition of melody at different pitch (exact transposition)
4. Repetition of melody using same intervals on different scale degree (tonal transposition or sequence)

*Examples:*

lacucaracha

In "La Cucaracha" the opening motif is firstly repeated then followed by an answer (motif 2). Motif 1 then appears again slightly altered to fit the harmony (motif 1a), but the main contour of the melody is retained. This is then repeated (unity – it follows the same method as the opening statement) and is then followed by the another answer (motif 2a) which combines unity and variety. Unity is achieved by using the same rhythm as motif 2 but with different notes and intervals. There is already tension at this point due to the V7 chord. As the opening 4 bar phrase has a cadence from I to V7 on bar 4, we expect (and receive) the second 4 bar phrase to cadence at the same point. This is unity that is totally appropriate to a folk dance tune.

In Autumn Leaves the opening 4 note motif is repeated in sequence with almost exactly the same rhythm, one step lower each time. This is not an *exact* transposition, it is a*tonal* transposition. The first three notes of the opening motif are the first, second and third degrees of G minor, so the third degree is

*minor*. The first three notes of the sequenced repeat of this motif are the first, second and third degrees of F mixolydian (the scale that corresponds to F7) so the third is *major*.

This 8 bar "A" section is repeated, so that the rhythmic repetition of the motif builds tension which is release at the first bar of the "B" section

autumn leaves

*Exercise:*

a. Using the 8 bar La Cucaracha extract, add more tension at the final cadence by extending the second phrase (e.g. delay the perfect cadence by one bar).
b. Add even more tension by adding a bar at this point with a different time signature.
c. Add more tension by using more sophisticated harmony.

*You will probably find that:*

a. makes the tune more interesting. The sort of thing you might use if arranging or composing a jazz piece but with folk influences, but that
b. and (c) destroy the "folk" feel, and though still valid as an art composition, remove it from the realms of commercial composition.

*Exercise:*

a. Take an existing well known piece of music and develop the opening motif in different ways.
b. Take a well known existing piece of music and develop the opening motif with an answering motif.

Replace the opening motif of (b) with an original motif so that the answer still makes sense

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## UNITY AND VARIETY - TENSION AND RELEASE

Two very important factors in music, as well as most other artforms, are the creation of tension and release. In this chapter we will look at how tension and release can be created by combining *unity* and *variety*.

| Unity | Variety |
|---|---|
| Repetition | Lack of repetition |
| Static harmony | Changing harmony |
| Smooth dynamics | Radical dynamics |
| Unchanging orchestration | Changing orchestration |
| Limited range of pitch | Wide range of pitch |
| Rhythmic continuity | Rhythmic variety |

**N.B. Unity does not necessarily imply monotony and variety does not necessarily imply interest.**

By combining unity and variety ***tension*** and***release*** can be created. The good composer knows when to introduce contrasting material at the right time to release that tension. (For example by repeating an idea until the point where the listener is about to get bored). Tension can also be created by the lack of repetition, by the use of many contrasting and changing musical ideas and then released by the sudden appearance of repeated or static material.

On the other hand we don't have to assume that it's wrong to keep repeating a melodic phrase beyond the stage where it may be considered boring. There are many instances where you may wish to create a "hypnotic" or soothing effect. In this case beware that there may be a tension created by constant repetition that you don't want, so it may be worth introducing some very subtle and gradual change either in the harmony, tone colour, rhythm or melodic content. Imagine the calming effect of listening to the gentle rhythm of waves on a seashore. This rhythm is not exactly constant metronomically, neither is each wave identical. There may be changes in the background sounds (seagulls or children playing).

Sometimes variety can be created by using unexpected intervals. This can create interest but if it is overdone the interest ceases to exist as the surprise element is replaced with predictability. There's a very fine balance required in the use of such devices, which is often purely subjective, and in most cases subconscious on the part of the composer. You may decide to use a "wrong" note. For instance most people would consider a Db on a C major chord to be an unpleasant dissonance (as opposed to a pleasant or useful dissonance). However if it is "set up" or "prepared" (for example by a repeated phrase where that note does fit the harmony and the C major is then introduced) then the dissonance can make sense and become useful. One may also want to look at where the melody had come from and where it was leading.

In previous centuries harmonies which we accept as pleasing used to thought of as unpleasant dissonances, for example a suspended fourth on a chord had to be "prepared" by stating the note prior to the chord. This rule though it does have some use is largely irrelevant in the music written today. It is perhaps better to think of dissonance not as an unpleasant sound but as a harmony that possesses some tension

or need to go somewhere, whether to another dissonance or a consonance (a harmony that sounds "at rest").

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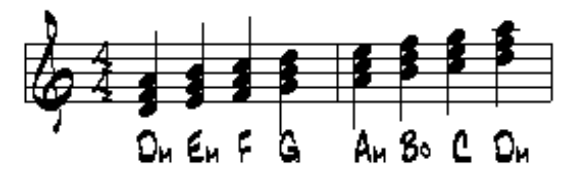
## MODES

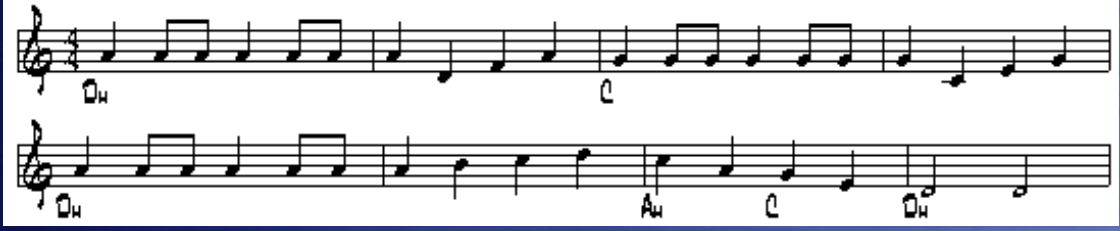
Modes can be used freely in pop music, either in a traditional form, as a one or two chord riff (eg modal jazz or riff based pop, funk etc) or as a way of finding interesting chord substitutions (modal interchange)

### Traditional (melodic) use of modes

Typical examples can be found in folk music. As with conventional tonal harmony a chord can be built up in 3rds from a root note, which can be any note of the scale:



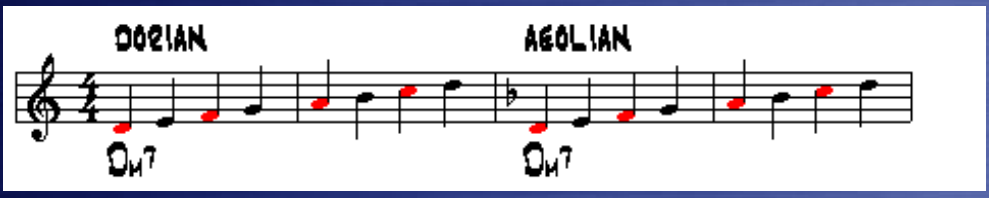

Generally the harmony is kept simple with triads rather than 7ths. The diminished or half diminished on VI would rarely be used.



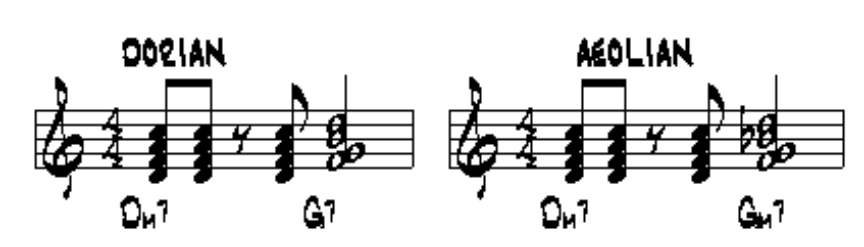

Note that in this Dorian example the VII chord (C) is used for the final cadence. One of the main features of modal music is the lack of a traditional V7 -I perfect cadence (Except, of course, the Ionian mode which is the major scale). In this example the Am could also have been continued through bar 7 to give a Vm-I cadence.

### Modal Jazz & Riffs

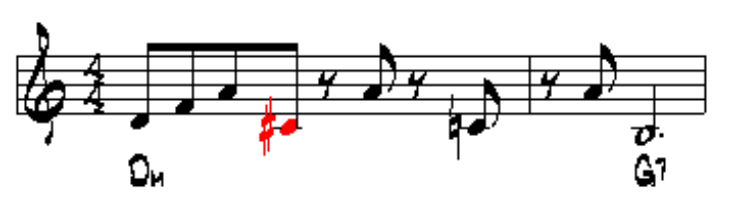
If only one chord is used for a tune, it can imply more than one mode, either for composing a melody or for improvising. This ambiguity can be used very effectively to allow the music to shift between different modes (and moods):




If two chords are used as a riff, then they will usually imply a particular mode:

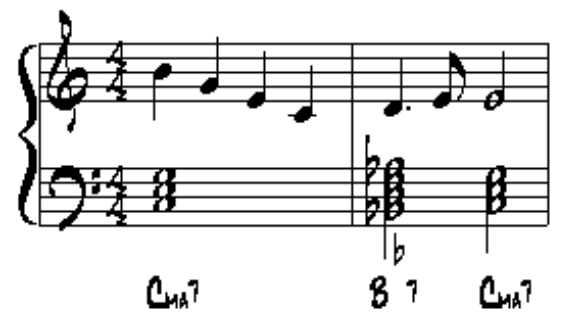



In the following example of a typical Latin riff, the C# is a passing note, so a Dorian mode is still implied, though in improvisation or composition a C# could be used either to coincide with the C# in the riff, or as a neighbour (or "leading") note.



**Modal Interchange**

This is where conventional tonal harmony is used but chord substitutions are used whicf "borrow" chords from a mode. In the following example a bVII chord is used to substitute for a more conventional V7. In this case you imagine that you switch temporarily from C major to C Aeolian.



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## FORM

Commercial or pop music of the first half of this century was usually written as dance music or for musical shows, (stage and/or film).

The usual form of a song would be:

*Verse* The verse usually occurred once at the beginning and sets up the "storyline" of the song, a kind of vocal introduction.

*Refrain* The main body of the song consisting of two or Chorus) three sections. The first section("A"section) would usually be 8 or 16 bars and is usually repeated. There would then be a second section with a different melodic and harmonic basis (the middle 8, bridge or "B" section). The "A" section would then be repeated. We call this "AABA" form. Other forms such as "ABAC" (How High The Moon) and ABAC (Autumn Leaves) are used but are not quite so common. The term middle 8 maybe used however many bars there are.

The whole refrain or chorus may be repeated several times. Jazz and dance adaptations of popular show tunes would often omit the verse.

Another form of popular music of this era is the Blues. Here the form is usually based on the 12 bar blues form (sometimes extended to 16 bars). The structure of the song consists of repeated verses (telling a story) interspersed with choruses, where the chorus always has the same words.

The 12 bar blues is divided into 3 phrases of 4 bars each. It is very common for the second of these phrases to simply be a repetition of the first. This is a device which possibly originated when the singer would be improvising the words, and a repeat of the first phrases would give them more time to think up the words for the third phrase.

This form originates from the "call and response" worksongs of the plantation slaves, where one person would call out a "verse" and the rest would respond with a "chorus". This form can also be seen in European folk music, early ballads and sea shanties.

The blues form became very widespread during the 50s with the advent of rock and roll (which is based on the black American style rhythm and blues) and is still very common in rock music

Modern pop and commercial music (from the 60s onwards) still uses the AABA form without the introductory verse), but the repeated "verses and choruses" form is becoming more common. Today the

AABA form is often thought of as "verse, verse, chorus, verse" and some confusion can arise between this and the original structure mentioned above, where the B section is a middle 8 and definitely not a chorus. A typical modern pop song might be *verse x 2, chorus, verse, chorus, middle 8, (verse), choruses repeated to fade.*

Verses usually have different words but the same melody; choruses have the same words and the same melody. Often the chorus is one small phrase or word, referred to as a "hook" (possibly because it is supposed to be a "catchy" tune which "hooks" the

listener like a fish on a line).

In some cases the "hook will be an instrumental passage or riff which is often stated as an intro, recurring in the middle of the song and possibly again at the end.

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## COMPOSING TO PICTURE

These notes can be applied to most types of film from 30 second commercial to drama feature. There are no hard and fast rules as to the answers, but the composer will stand a better chance of creating an appropriate score if he/she spends time thinking about the questions. Sometimes the answers are obvious; sometimes they only come through a process of trial and error, even for the most experienced composers. Very often the issues are subjective, one of the composer's chief skills is the ability to understand the brief and almost get inside the mind of the director.

Music is sometimes considered by the director from the outset, but is often added right at the end after the final edit. It has an enormous bearing on the apparent pace of a film. It can make fast editing seem slower and slow editing fast.

There are different approaches for diferent film genres, e.g. it is common for musical accents and strong beats to coincide with action in traditional animation, where it can almost act as a sound effect track, but this approach with modern drama will often appear to be very "corny".

- What is the overall emotional value (fear, love, hate, liberation, ecstasy etc)
- What (emotions) can music add that is not already present in the film?
- Is it actually necessary to add anything?
- Are there places where pauses or silence would be more telling?
- Is it necessary to tell a story or just convey a mood?
- Is there a climax or turning point?
- Are there secondary "peak" moments?
- Should the music follow or contrast with the visual rhythm?
- Should music cues synchronise exactly with action, or come earlier or later?
- How does the music affect the rhythm of the film (eg the pace of the editing).
- Whose point of view needs to predominate?
- How does the music interact with dialogue, voice over, sound effects? Does it clash or complement?

- How does the genre of the music relate to the characters or the audience?

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## COPYRIGHT

Usually it comes down to a judge, and is therefore very unscientific. Therefore, judgements can be very tenuous and inconsistent.

*Guidelines:*

Copyright is a Three Legged Stool. If all 3 legs are in position, the case for an infringement of copyright exists. If any, or all, the legs are missing, the case is weakened, and the stool falls over.

The 3 legs are:

*1. Access*

- Has one composer had any way of hearing another work to allow one to be a copy?
- Two writers could by co-incidence have written identical pieces, and if one writer had no access, or way of hearing the other writers work, that would not be a copy.

*2. Originality*

- Is what you have allegedly copied original in the first place?

Classic blues licks and riffs are often used. They are not your original composition, and you have copied them, but you are not infringing, unless someone can prove that their work was original in the first place. (E.g. most 12 bar blues chord progressions). An example of when this would be an infringement would be the introduction to Johnny B Good. This copyright belongs to Chuck Berry.

Soundalikes, style-alikes, tributes, pastiche, parody, copy. They are all much the same and things are even worse if a parody is viewed as defamation of the artist! Then there are damages as well.

*3. Substance*

- Is what you have 'copied' a substantial part of the original work?
- What is substantial? Very vague, and open to interpretation, but can be defined in 2 ways:

(A) Qualitative

A distinctive hook, albeit very small, can be a qualitative copy. E.g. the opening notes of the Beatles 'Yesterday'.

(B) Quantitative

If whole chunks of an original work also occur in your work, that is a copy. So, if any one of the 3 legs doesn't hold up, the case for an infringement is lessened. However, experience shows that in most court cases, only one of the 'legs' gets referred to in any detail. The others might be referred to in passing, but their emphasis is less.

Even one leg being present can give someone the opportunity to put a case, often a bogus case. Even very tenuous access can be grounds for a nuisance case, which because of legal aid might go to court and costs a fortune in legal fees, which will never be claimed back from the individual pursuing the claim.

E.g. "I lost this tape on the bus and the artist must have found it and copied it". Or, a tape gets thrown on to a stage during a live performance and the artist is photographed catching it. So, access can be proven. Both of the above have happened, and that alone has lead to an out of court settlement, rather than having the expense of going to court.

If you are doing a sound-alike (or what you should start to call a style-alike), you to a greater or lesser extent involved in copying. Be careful. You must ask whether there is access, copying of the original and substantiality. If there is, then there is a real problem.

How far can you go? Try not to go close. Even something in the style of is dangerous. If you are intent on doing a copy, muddy the edges; introduce conflicting styles, so it cannot be compared with one individual artist, track or group. Don't refer to a single work, that is lethal. Bear in mind the qualitative factor. Don't string together a chain of classic riffs. Change the key. Change the time signature. Don't give it a title that implies a link to the original.

You must also consider whether the setting (visual imagery or voiceover) may suggest a closer link to the original than you intend. As well as copyright theft there is a "passing off as" law, by which the context may have much more bearing on the vase than any off the above considerations. This can be completely outside the control of the composer if such elements are added afterwards, but the composer may still be the defendant in a legal battle.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## LAYING OUT A SCORE

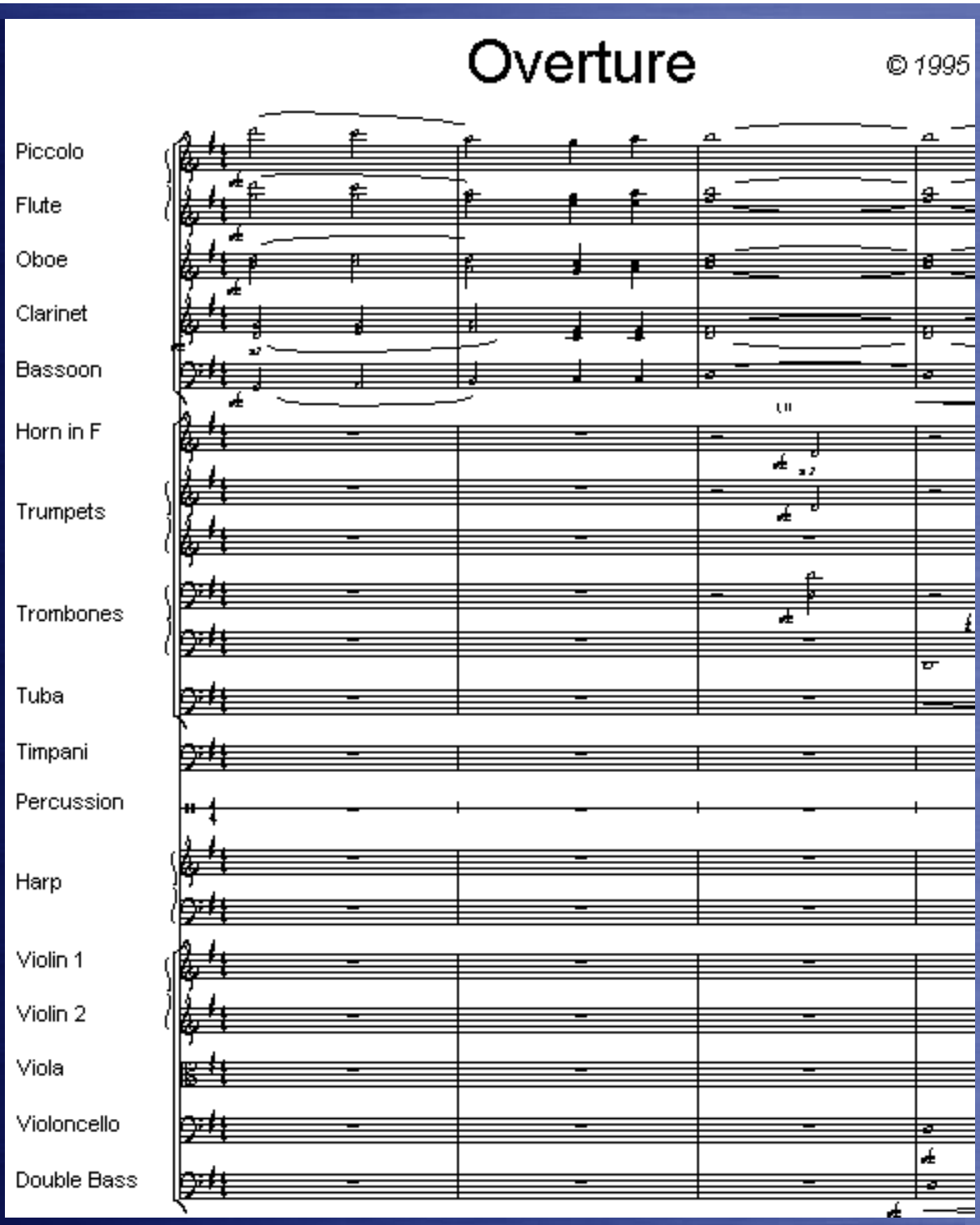
The title should be at the top centre of page one and the name of the composer and arranger on the right. It is a good idea to indicate whether the score is transposed or not (on the left).

Individual groups of instruments or sections (e.g. Brass, strings, saxophones, choir) are bracketed together down the left hand side of the staves, on every page. The names of the instruments are written to the left of each stave on the first page.

There are conventions as to the order in which the instruments appear from the top of the score, e.g.:

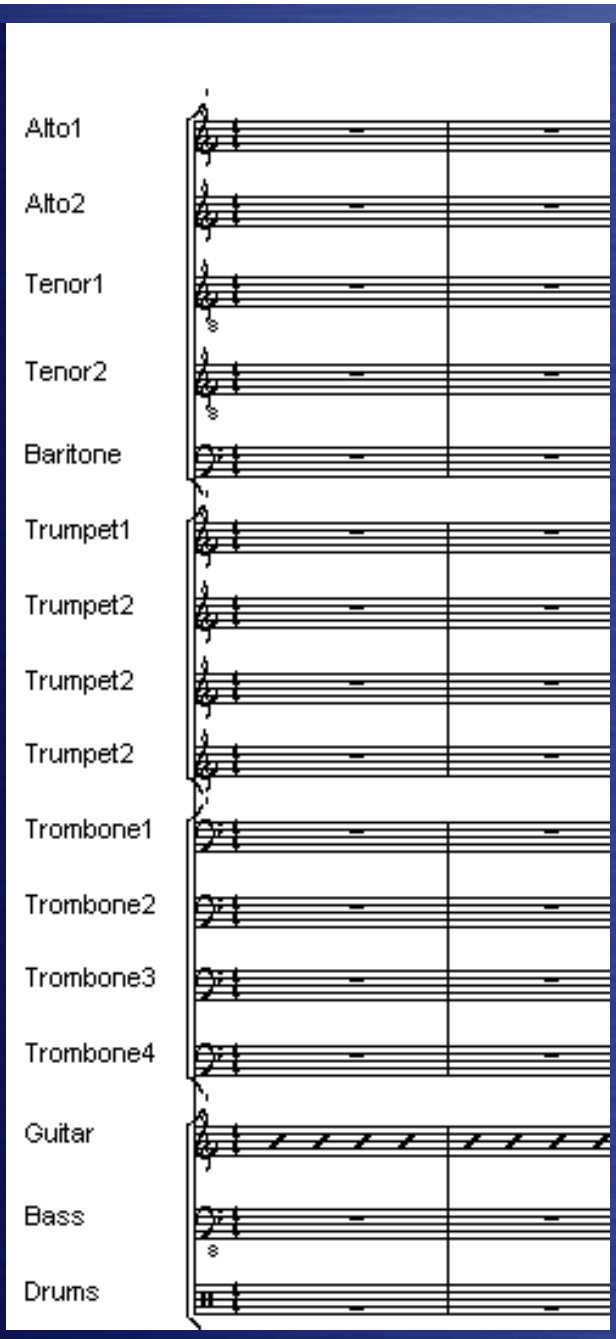
**ORCHESTRA**

- Woodwind
- Brass
- Percussion (Timpani, non-pitched, pitched
- Keyboards etc
- Strings




**JAZZ ORCHESTRA (BIG BAND)**

- Saxes (Woodwind)
- Trumpets
- Trombones
- Rhythm section




Each "family" of instruments is given its own staff. Where there are more than two parts to a staff, two or more staves may be used. Clarity is very important at this stage especially if your score is to be copied into individual parts by a copyist, who must be able to understand your intentions. Three or four instruments playing "block" chords may be written on one staff, but where complex polyphony would make this difficult for the copyist to decipher use another staff. A good rule is to imagine that you didn't write the score, then imagine yourself having to copy the score onto individual parts.

When writing for an unconventional line up it will probably help you to put the highest instrument at the top of the score and work down the page to the lowest, while keeping the rhythm section at the bottom.

Notes and rests should be written so that each beat is vertically aligned on different parts.

## PLANNING THE SCORE

Useful tips:

- Make a rough sketch of the arrangement. E.g. intro, statement of theme, backings, counterpoint, solos, ensemble passes, modulations, restatement of theme, climax, coda. Decide on instrumentation for various sections and choose keys appropriate to the instruments. Use the ideas we mentioned for composition regarding unity and variety. Having planned the entire arrangement don't be frightened to change as you go along if you feel inspired.

- Fill in the melodic lines and make a note of the harmony in chord symbols throughout. With vocal scores fill in the vocal line and lyric. (The latter is more important than it first appears as you may wish to make a musical comment on certain words)

- The same ideas regarding variety and unity that apply to composition can also apply to your arrangement whether it's an entire symphony or an improvised jazz arrangement. Just as we think of the melody creating and releasing tension the shape of the entire arrangement can do this as well. For instance we can think of repeated verses building tension and a chorus bringing release. In the case of jazz arrangements the composer will often rely on an improviser to develop the material. Here the improvisation is just an extension of composition, the good improviser thinks (either consciously or subconsciously) about building and releasing tension, repetition and development of ideas.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## THE STRING ENSEMBLE

The string section consists of violins (1st & 2nd), violas, violoncellos (usually abbreviated to cellos or celli) and double basses. There are conventions as to the ratios of instruments; e.g. a large orchestral ensemble may consist of 16 first violins, 14 seconds, 12 violas, 10 cellos and 8 basses (16, 14, 12, 10, 8).

Smaller ensembles would use a similar ratio (12, 10, 8, 6, 4 - 8, 6, 4, 3, 2) In pop and commercial music the basses will often be omitted as their role is covered in the rhythm section. Arco (bowed) passages would sound muddy, and pizzicato (plucked) as played by orchestral players would obstruct the feel or groove of an electric bass or a jazz double bass. A typical 20 piece studio ensemble might consist of 6,6,4,4. Smaller sections (less than 12) will sound weak at the extreme top of the range and will have more of an intimate "chamber" sound. Problems of intonation are more noticeable with smaller sections.

You needn't stick to "quartet" parts of 1st and 2nd violins, violas and cellos; you can subdivide how you feel (divisi). E.g. if you have 8 violins you could have 4 on one part, 2 on another, 2 on another. If you have 4 violas you could divide these into 2 and 2. However the smaller the ensemble the weaker it will sound if you employ too much divisi. You must mark at the top of the score how many players per part, and any changes of divisi as the score progresses (e.g. " divisi a4 or just "a4" means 4 players).

The string section is incredibly versatile. Unlike most other instruments the string family possesses an equality of tone throughout the range. Very fast passages are usually no problem.

Extreme changes of dynamic are possible in a very short space of time. The strings, either as an ensemble or solo, are capable of a great deal of emotional expression, though this quality disappears outside the range of the human voice (D1 - E5). Long passages of strings tire neither the players' nor the listeners' ears. A sustained tone of indefinite length can be produced.

### RECORDING

Strings are normally recorded using a stereo pair of mics and often with close mics on each section (1sts, 2nds, violas and cellos) or each desk (each pair of players). Close miking will allow you to alter the natural balance (e.g. violas or 2nds louder than 1sts) or fake a natural balance if for example you don't have enough of one instrument. This will obviously lose out on natural ambience.

Small ensembles can be made to sound bigger with the use of double tracking but beware, double tracked strings can sometimes sound phased. On analogue tape a solution is to transpose the overdubbed part and varispeed the tape machine. With hard disk recording it is easy to double track with different tunings (slightly up and down) and delays (positive and negative) to partially simulate the effect of more strings. It can often be useful to add real strings to MIDI strings (and sometimes vice versa – not so easy)

### STYLE

String players should not be expected to interpret quavers as "swung". Write dotted or triplet notes, however unless you require a corny sound it is not a good idea to write a

jazz feel for string players. Unless they are experienced recording session musicians they are only used to following a conductor and hence may tend naturally to play behind the beat of a drummer or click track. If this happens don't shout at them, they are not wrong but just playing in their own genre. A few polite words with the leader will usually solve any problems.

## TONALITY

Irrespective of the range of the instrument, there are specific characteristics. In his book Principles of Orchestration, Rimsky-Korsakov describes the top string of each instrument as:

| | |
|---|---|
| Violin | brilliant |
| Viola | biting and nasal |
| Cello | chest voice |
| Double Bass | penetrating |

The other strings also have characteristics and are worth investigating further if you want to study string writing in depth. (See Rimsky-Korsakov, Adler, Piston) It is also a good idea to find a friendly string payer and get them to demonstrate all the possibilities and limitations of the instrument.

## BOWING

There are specific markings for bowing: a down bow (marked ï) means that the bow is started from the part nearest the player's hand (the heel or frog), an up bow (marked V) is started from the tip. A down bow can be heavier and will usually occur on a down beat of a phrase, but a skilled player can play with no audible difference between up and down bows. Marking the bowing may speed up your rehearsal but it is also acceptable to ask the section leader to take care of this, and unless you are a string player yourself it is often best to leave this aspect to the expert.

A slur will indicate that all the notes encompassed will be played in a single bow (legato). The more notes required in one bow the less forceful the sound as the bow has to move more slowly.

This table shows some of the many different types of bowing:

| | |
|---|---|
| Legato | A group of notes played smoothly in one bow |
| Staccato | Short up and down bows (notes are half length). Bow may or may not leave the string. Indicated by dots placed over/under the note |
| Spiccato | Staccato with a bounced bow. Usually used for faster passages. Slurred staccato Short notes played in the same bow |
| Detache | A cross between legato and staccato, Indicated by a line placed on or under the note. |
| Loure | A succession of notes slightly separated played on the same bow. Indicated same as detache but with a slur |
| Marcato | Heavy, separate stroke with a pressed accent played near the heel |
| Jete | Bouncing the top of the bow to create repeated notes in one bow. (Indicated by slurred staccato) |

| | |
|---|---|
| Tremolo | Small but very rapid up and down bows. Can sound dramatic, ethereal, "scary" or cliched if overdone. Measured (e.g. semiquavers) written with two slashes, unmeasured with three. A *fingered* tremolo is similar to a trill but with an interval larger than a whole tone. |
| Col Legno | Using the bow upside down. |
| Ponticello | Bowing close to the bridge - a thin sound |
| Sul Tasto | Bowing over the fingerboard - sounds "hazy" |
| Flautando | Bowing close to the fingerboard - sounds flutelike |
| Glissando/ Portamento | Sliding from one note to another, indicated by a line between the notes. |
| Sul G etc | This means all notes played on the G string, can apply to any other string as requested e.g. Sul A |

*Modo Ordinario* on the part indicates back to normal.

**PIZZICATO**

This means plucking the strings with the finger (the right hand middle finger unless indicated for left hand with "+"). Allow time to change between arco and pizzicato passages. It is quicker to change to pizz after an arco upbow and quicker to change from pizz to an arco downbow)

Not suitable for very fast passages or notes higher up the strings (e.g. on violins higher than C above the treble clef, violas F below that, cellos F above middle C) unless doubled with woodwind, as the notes are less resonant.

**DOUBLE STOPS**

Two or more notes may be played at once (provided, of course, that they are on different strings). Double stops are indicated by bracketing the notes together. They work particularly well with cellos. Thirds, sixths and tenths are best for tuning; fifths, fourths and octaves can be tricky.

3 note stops are difficult to play quietly and should include at least one open string.

4 note stops should include two open strings and have to be played slightly arpeggiated.

Double stops allow for more notes in the chord, however if the notes required are impractical the parts can be split (divisi) when you have a large enough section, e.g. where there are two notes on a 1st violin part half the players can be directed to play one note and half the other. Don't worry unduly about writing impossible or difficult double stops as the players will usually automatically play them divisi.

VIBRATO

One of the characteristics of string playing is vibrato (vib) and will usually be employed unless specified (N.V.). When a section uses no vibrato the result is a cold, icy sound. Vibrato can add a romantic feel but is corny if overpronounced or used to excess. It is very expressive on solo passages.

Note: vibrato is not possible on open strings, if you want a G below middle C to be played with vibrato, voice your chord so that this note is played by the violas or cellos. Likewise the C below middle C should be played by the cellos and not the violas.

## INTONATION

In general intonation is not a problem for string players. Vibrato helps intonation (as it does with wind and brass instruments) as the slight wobble above and below the pitch tends to average out into the correct pitch. Larger string ensembles can actually benefit from slight discrepancies in intonation, as this creates a "chorus" effect. If a large violin section were all playing absolutely in tune with each other it would not sound so large. (This is not desirable with quartets or small sections so beware of writing unison passages for fewer than four violins. Large intervals can sometimes make intonation problematical, more often with leaps upward than downward.

## MUTES

A mute is an attachment that clips onto the bridge. The result is a beautiful soft and ethereal sound, which is very useful for a different tone colour. Allow at least two bars rest to attach the mute. (Longer if the player has left it in the boot of their car).

Parts are marked "Sordini" or "mutes".

## HARMONICS

A harmonic is the result of lightly touching the string with the left hand instead of holding it down on the fingerboard. There two sorts:

### Natural Harmonics

Played on open strings by touching the string on various nodes (divisions of the length of the string, e.g. half way up, a third, a quarter etc). Notes easily available are: One octave, an octave and a fifth, two octaves, two octaves and a third. To notate, write the pitch required and place a small "o" above the note.

### Artificial Harmonics

These are produced by touching the string a perfect fourth above a stopped note. The harmonic is two octaves higher than the stopped note and is indicated by placing a diamond on the stave one fourth above the fingered note.

Harmonics do not work well for melody, but are good for tremolo and special effects. In quiet passages they sound cold and transparent, in loud passages they sound cold and brilliant. Can be used pizz but sound weak.

## LIMITATIONS

Very fast passages are not practical where there are too many intervals of fourths and fifths or in the extreme upper limits of the range (e.g. above A5 on the violin). However repeated notes or tremolo are very effective in this range.

Strings will often not compete in strength or blend well brass.

In the conventional ensemble, the natural blend is such that the 1st violins and cellos will stand out more than the 2nds and violas.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone

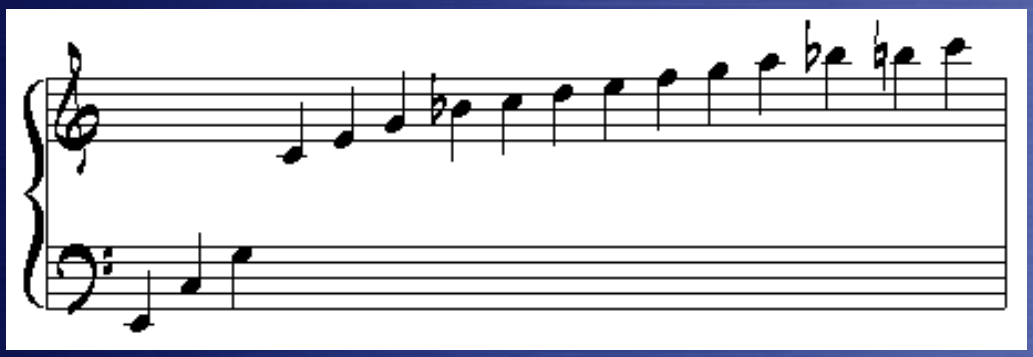




## BRASS

Brass instruments are capable of great power, but also subtlety and variety, especially with the use of mutes, which are placed in the bell.

The sound is produced by vibrating the lips together against the cup shaped mouthpiece (called buzzing). Greater lip tension produces notes of the harmonic series, based on the fundamental determined by the length of tubing (*). For example a brass instrument with an 8ft length of tubing can play a C below the bass clef (C1). By tightening the lips or embouchure the noytes of the *overtone series (harmonic series)* become available:



and theoretically upward chromatically though this would be well above the normal range. Early instruments were limited by the notes available on one fundamental but modern trumpets, horns and tubas change the length of tube thus creating different sets of harmonics by the use of valves. The trombone uses a sliding tube to change the length (except in the case of the less common valve trombone).

The range of any brass instrument varies from player to player. Some principal or lead players specialise in high notes and can extend the range by an octave or more, but unless you know the players you are writing for it is best to stick to the conventional range.

It is especially important to appreciate that playing a brass instrument is physically very tiring. Plenty of rests are a good idea: when a brass player's lip "goes" the first thing to suffer is the range, and high notes may "crack". As the high notes are not usually quiet the result has a less than pleasant effect on the music. Rest passages are a good idea not just to save the players lip but also for the sake of the listener, as the sound of "wall to wall" brass can be tiring on the ear.

The orchestral brass section usually comprises three trumpets, four horns, three trombones (including a bass trombone) and one tuba. The jazz big band usually has four trumpets and four trombones (sometimes including a bass trombone).

The French horns are often referred to in orchestral circles simply as "horns", and in fact this term is more correct as they are not French at all. However in jazz and popular music the term "horn" has come to mean any instrument that is blown, so a three piece horn section in a soul band will usually consist of a trumpet, saxophone and trombone, *not* a "French" horn.

Orchestral brass players traditionally play without vibrato, jazz or showband players may use vibrato so if you don't want it mark the part "N.V."

"Lip" trills are possible on brass instruments and are executed by tightening and loosening the jaw muscles or "embouchure". More effective in the upper registers due to the closeness of overtones.

Glissandi (sliding from one pitch to another) are possible and effective on brass instruments, usually in an upwards direction, but are cliched on the trombone and may imply a "dixieland" style. Glissandi on the trombone are limited by the position of the slide, and further study of the instrument is advised if you want to use them in your writing.

"Bending" notes downward (by up to a semitone on trumpet and obviously more on trombone depending on the position of the slide) is also possible.

Fluttertongue and "growling"(as on woodwinds) are useful effects.

All brass instruments can be muted to reduce the intensity of sound but in the case of trumpet and trombone mutes a diverse range of tone colours can be achieved by the wide variety of mutes available for these instruments. If you require mutes mark the part accordingly (muted or con sordino). Unless you specify which type of mute the players use the straight mute.

This table shows the characteristics of the main trumpet and trombone mutes:

| | |
|---|---|
| Straight | A bright, poignant sound |
| Cup | A colourless, nasal sound. The tone becomes more muffled the further the mute is placed into the bell (Tight cup). |
| Harmon | Tube out A sharp, shimmering sound. (Notably used by Miles Davis) Tube in the hand is used to create a "wah wah" effect by opening and closing over the mute (notated "o" for open and "+" for closed). Comic (laughing) effects achieved on descending chromatic notes |
| Bucket | A very soft mellow sound. |
| Plunger | Based on the plumber's rubber sink plunger, this is used for bluesy "vocal" or "wah wah" effects. Can be notated closed or open as for the harmon |

A return to unmuted playing is marked senza sordino or open.

In addition to the mutes the hand can be used over the bell. If you want to be adventurous you could use many household or obscure objects as mutes: teapots, pineapples, hamsters.

**(FRENCH) HORNS**

The horn is a transposing instrument in F, i.e. it is written a fifth higher than it sounds. In orchestral writing the key signature is usually omitted and all accidentals written on the part as they arise. These days this is pointless and would advise the use of key signatures as normal.

The horns appear on the score above the trumpets, even though they are lower in pitch. This is possibly because although they are a brass instrument the mellow sound has a great affinity with the woodwinds, with whom they achieve a good blend. The horn in classical music is a member of the wind quintet as well as the brass quintet.

The sound in the lower octave is weak and easily covered. The middle range has a tone that can vary between dark and bland. Often used for sustained chordal or "pad" type

accompaniment which can become monotonous if overdone. The horn can sound lyrical and "heroic" when used solo or in unison, and higher up the range it is strong and bright.

Trills are possible but difficult. Very fast passages and large leaps are not advisable. Logical melodic lines help the player to pitch notes accurately.

It is common practice to "interlock" harmony parts, i.e. the 1st and 3rd horns are given the top two harmonies and the 2nd and 4th horns the lower two.

The horn can be muted either with a mute or with the hand (stopped tones). These are produced by placing the hand in the bell (marked "+") and produce a sharp slightly edgy nasal sound. A return to normal playing is marked "o".

## TRUMPETS

The trumpet can be the most dominating acoustic instrument of any ensemble, especially in the higher end of its range (above the staff) where quiet notes can be difficult. The very low end can be dull, the lower and upper middle range can be lyrical, clear and still capable of blending with care. The high notes can be very punchy and powerful. Fingered trills are possible on all notes, lip trills on notes above the staff.

Many lead players can extend the range, but this can be an unpredictable ability which diminishes as the lip gets tired. If you require any extra high notes rest the player well either before or afterwards.

The most common trumpet is the Bb trumpet (the only trumpet in general use in jazz and pop) which is written a major second above the sounding pitch. Other instruments associated with the trumpet are the cornet and flugelhorn (both in Bb). The cornet is used mainly in brass bands, the flugelhorn is a very common double for all jazz trumpet players and has a mellower sound.

Often in big band writing if one of the trumpet players specialises in jazz improvisation they are written on third or fourth trumpet. It can be a good idea to give them a rest from the section before and after a solo, (a good idea for any instrument in fact).

Other trumpets in use in orchestral work and their transposition:

| *Instrument* | *Sounding* | *Written* |
|---|---|---|
| C Trumpet | C | C |
| D | D | C a whole tone lower |
| Piccolo tpt in Bb | Bb | C a minor 7th lower |

## TROMBONES

The trombone is a non transposing instrument written in the bass clef (although some brass band players treat it as a transposing instrument in Bb) The tenor clef may be used for high passages, but is unusual outside orchestral writing. The trombone is very versatile, and can blend well with other instruments. The slide is used to vary the fundamental notes upon which the overtones are based, and there are 7 positions of the slide. The lowest notes in normal use are the second partial, so in each position notes are available as in example (*). It is quite agile, though slide movements can become awkward lower down where a player has to jump quickly from a note where the slide is fully extended to (7th position) to one where the slide is fully retracted (1st position), as the low notes are only available in 7th position. (Higher notes are available with various

alternative slide positions) Some trombones have an F trigger which solve this problem by allowing an alternative slide position for the low notes.

The bass trombone is basically a tenor trombone with the F trigger and a larger bore. (Although a tenor trombone with the F trigger can play same range as the bass, the low notes (7th position) are not as strong). Modern instruments have an "E" trigger allowing them to play the low B.

As with trumpet players some trombonists can extend the range upwards but the same limitations apply to stamina.

The normal range can be extended downwards by the use of pedal notes (the fundamental of the overtone series) most commonly used on the bass trombone as an effect where the notes tend to "growl".

All the mutes indicated above are available for the trombone but due to their large size trombonists do not carry them all unless asked to beforehand.

**TUBA**

This is the bass instrument of the brass family, is non transposing and written in the bass clef. It has a rich warm sound and is quite versatile dynamically and surprisingly agile. It blends well with all other instruments but like all low instruments requiring breath, ample rests must be allowed for the player to breathe.

The tuba can be muted.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## WOODWIND

Woodwinds are so called because the tone is generated by the player's breath and originally all instruments were made of wood. The main woodwind instruments in modern western music are: flute, oboe, clarinet, bassoon and saxophones. Each instrument is subdivided into a "family" of different sizes and pitches, (e.g the flute family: C flute, piccolo, alto flute, bass flute) The basic orchestral woodwind section consists of flutes, oboes, clarinets and bassoons, usually with two, three or sometimes four players for each instrument or family of instruments. In the orchestra the "1st" or lead player will usually play the main instrument of the family and the 2nd, 3rd or 4th players will play any other instruments as required. (When a player plays more than one instrument this is referred to as doubling)

As a section the woodwinds have the greatest variance of tonal and dynamic characteristics between the individual instruments. This means that each instrument has a very different character, allowing a great deal of variety of expression within the section. For the same reason it may be difficult to achieve a blend within the woodwind section, without a great deal of knowledge and experience of their tonal and dynamic characteristics. Close intervals in the harmony help with the blend but due to the rich overtones of most woodwinds wider intervals low down are inadvisable. This is of course true of all instruments but more so of woodwinds.

When writing for woodwinds care must be taken to make sure sufficient rests are allowed for breathing, especially in the case of oboes and bassoons which are physically tiring instruments to play for sustained periods. Circular breathing (breathing in while still playing a note) is possible but not practised by most players and is still tiring and usually only used by improvising soloists.

With all woodwinds the notes are generally started by the tongue making an action as if pronouncing the syllable "tu" either against the reed or in the case of the flute against the upper part of the mouth. It is the action of "tonguing" or not which differentiates the different types of phrasing or articulation: Where phrases are not marked by slurs or staccato dots all notes should be lightly tongued and given their full length. The action of normal tonguing should not be an audible sound, rather it is just the way to start a note precisely. Different types of articulation and effects:

| | |
|---|---|
| Legato | The phrase is marked by a slur. The first note only will be tongued and the phrase will sound very smooth. |
| Soft legato | Every note is lightly tongued, sometimes with the syllable "du" instead of "tu". |
| Staccato | Notes played shorter (usually half their length. Every note is started and stopped by the tongue. |
| Double tonguing | The player tongues very fast alternating the syllables : "tu, ku". Works best on the flute. |
| Triple tonguing | The same as double tonguing but alternating "tu,ku,tu" |
| Flutter tongue | The player vibrates the tongue as if rolling the syllable "rrrr" |

Traditionally when writing for woodwinds the flutes (or piccolo if their is one) usually play the top part, followed downwards in pitch by oboes, clarinets and bassoons. This is not only because of the range of each instrument but also because of the various strengths and weaknesses of parts of each individual instruments range as will be discussed later. If the chord is high the clarinets may be voiced above the oboes.

Two identical instruments in unison may have intonation problems, but three or more are fine due to the "chorus" effect of slight tuning differences.

Some woodwinds (and brass) are transposing instruments. The notes and key signatures that are written are different to the notes and keys that sound. The reason for this is so that a player does not need to learn a new set of fingerings for each different instrument that they double on. E.g. traditionally the note that sounds when three fingers of the left hand and four of the right are stopping the holes in the instrument, that note is called "C", whether its an actual "C" as with the flute, an Eb as with the alto or baritone saxophone, a Bb as with the soprano or tenor saxophone and so on. This allows an instrument to be made in many different sizes and pitches without causing the player too much difficulty. An instrument that sounds the same note as written is said to be in concert pitch.

## SAXOPHONES

Saxophones are made of brass but they are classed as a woodwind instrument because of the method of tone production: the vibration of a single reed. The saxophone was invented in the 19th century and was largely viewed as a novelty instrument.

Composers such as Bizet and Ravel made it acceptable in classical music and innovators such as Coleman Hawkins paved the way for acceptance as a serious instrument in the field of jazz and popular music.

There are many sizes of saxophone but only four are used widely, the soprano, alto, tenor and baritone. The saxophone has two "registers", the upper register is an octave higher than the lower register and has a slightly less reedy sound. Saxophones have a wide dynamic and extremely wide tonal range and blend well with most other instruments, but can dominate in an orchestral context. Conventionally they are played with vibrato except in unison passages where vibrato (unlike with strings) does not help the tuning.

At the bottom end (Bb - D) the saxophone is not very agile and difficult to play quietly except with the use of "subtone", a very warm and breathy effect usually only used on the tenor in a jazz solo context (E.g. Ben Webster). It is hard to make a smooth transition from subtone to full tone and is best avoided unless writing for a specific player. The high notes on tenor and baritone (D - F) are not always a good sound and should be avoided in section writing. Some players can extend the upper range quite considerably through the use of harmonics achieved by unorthodox fingerings and tightened jaws. (e.g. David Sanborn, Michael Brecker). Although this ability is becoming widespread it is still not advisable to write harmonics unless you are familiar with the player and it is especially unadvisable to write them for a section as the tuning can be unpredictable.

The saxophone is a transposing instrument:

| *Instrument* | *Sounding* | *Written* |
|---|---|---|
| Soprano | Bb | C a major 2nd higher |
| Alto | Eb | C a major 6th higher |
| Tenor | Bb | C a major ninth higher |
| Baritone | Eb | C an octave and a 6th higher |

The conventional big band line up consists of two altos, two tenors and one baritone. (AATTB)

Many saxophone players double (i.e. they play more than one instrument). It is common to expect at least one or two players in a section to double on soprano saxophone, flute or clarinet. Less common doubles are piccolo, oboe and bassoon.

The soprano can be used as the lead instrument instead of the lead alto either for a change of tone colour or to play higher notes. Clarinet lead is also possible but may sound like Glenn

Miller.

One or two saxophones work well with one or two brass instruments to create a classic "soul" type horn section. Two or three tenors and baritone work well to create a "rock & roll" section.

During the 60's (following the arrival of the electric guitar) the saxophone went out of fashion but with the advent of funk style bands in the 70's (such as Tower Of Power, the Average White Band, etc) and the adoption of rock and pop elements into jazz the saxophone has seen an enormous resurgence of popularity in current commercial music. In general modern commercial saxophone players have a harder and more penetrating sound than earlier players. Initially the saxophone was used in military bands and dance bands to supply a softer contrast to the brass, similar to the role of strings in the symphony orchestra. Some soloists in the 40's adopted a harder and more cutting sound to be heard above the rest of the band.(E.g. Illinois Jacquet, Coleman Hawkins). Modern players are often the only sax player in the band, therefore blending with other saxes is not an issue, but competing in volume and tonally with electric instruments can be.

All trills are possible with the exception of low B-C# and C#-D#, but in general the lowest notes may be clumsy for trilling and are best avoided.

Although very rapid passages can be played, repeated notes (each note has to be started with the tongue) cannot be played as quickly as they can on brass instruments unless double tongued, a technique not widespread among saxophone players.

**FLUTES**

The main flute is the C flute (usually referred to simply as "the flute") with a range of three octaves upwards from middle C, (though many professional instruments extend down to B below middle C). The piccolo is an octave higher, sounding an octave higher than written. The alto flute is 4th lower and sounds a 4th lower than written. The bass flute is an octave lower and sounds an octave lower than written.

The sound is generated by blowing air across a hole in the instrument.

The flute and piccolo are quite weak in the lower part of their range, stronger and sweeter in the middle and shrill at the top end where they can be difficult to play pianissimo. The piccolo is normally used for high parts, but its lower register though weak can have a strangely useful silvery quality. The alto and bass are full and sonorous in their low register, but less useful higher up. Low flutes are easily drowned out by other instruments in an acoustic situation but as the sound is lacking in overtones it blends well with other instruments, especially strings or muted brass.

The flute is usually played with a vibrato generated low in the lungs or diaphragm, which causes the sound to pulse in amplitude rather than purely in pitch like other instruments.

Most trills are possible except low B-C, B-C#, C-Db, C-D#, and C#-D#. Trills and fast passages are sometimes difficult in the top 4th (G-C).

**OBOES**

The oboe is a double reed instrument and has a "nasal" quality and a uniquely characterful sound. The low register is very strong and sometimes heavy, the middle range is very sweet and expressive and the high end can be weak. Its penetrating tone does not blend well but its colour when added in unison to other instruments can often add great interest.

The other main instrument in the oboe family is the cor anglais which is pitched a 5th lower and is written a 5th higher than it sounds. The low notes are deep and rich, higher up the sound becomes mellower and finally thin and pinched.

It can sometimes be hard to start a phrase on a low note, or play low notes delicately. Some low trills are difficult depending on the make of instrument. As the oboe and cor anglais have such a characteristic tone, they are best used economically.

**CLARINETS**

There are many shapes and sizes in the clarinet family, the commonest being the Bb clarinet followed by the bass clarinet. The A clarinet is only a semitone different in pitch from the Bb but was originally introduced to cover keys that were difficult for the Bb clarinet, however modern mechanisms make this less of a necessity, and the clarinet is now an extremely agile instrument. Unlike other woodwind instruments the difference between its lower and higher registers is a 12th rather than an octave, causing a problem area known as the "break". These are the top two or three notes of the lower register which can sound very weak, although top professional players will generally have no difficulty with these notes. The clarinet has no problems with dynamic versatility apart from the extreme upper end which may be difficult to play pianissimo. The lower register is rich and deep, sometimes with a "haunting" quality, the upper register is clear, bright and expressive.

The bass clarinet sounds best in its lower register where the sound is very warm and rich, with a possibility of sounding sinister.

This table shows the instruments of the clarinet family and their transpositions:

| *Instrument* | *Sounding* | *Written* |
|---|---|---|
| Eb clarinet | Eb | C a minor 3rd lower |
| Bb " | Bb | C a major 2nd higher |
| A " | A | C a minor 3rd higher |
| Basset horn | F | C a 5th higher |
| Alto clarinet | Eb | C a major 6th higher |
| Bass clarinet | Bb | C an octave and a tone higher |
| Contrabass " | Bb | C two octaves and a tone higher |

**BASSOONS**

Like the oboe the bassoon has a "nasal" quality to its sound but less obvious and it blends rather better, especially with low strings and other woodwinds. It is a non transposing instrument written in the bass clef. It is very sonorous low down, its mid range sweet and expressive becoming thin at the top. It has the ability to sound noble and lyrical as well as humourous when used in staccato passages. Large intervals upwards are no problem but some downward leaps can be. Low notes are difficult pianissimo.

The contrabassoon is pitched an octave lower, and sounds an octave lower than written. Its low notes are obviously its forte but sometimes take a little time to "speak". They require a considerable amount of breath so appropriate rests should be given to the player to accomodate this.

Trills on the bassoon are no problem apart from some at the low end: A#-B, Bb-C, B-C, C#-D, C#-D#, E-F#, G#-A, though some professional instruments may have advanced mechanisms to allow these.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## THE RHYTHM SECTION AND KEYBOARDS

Rhythm section writing can be problematic, as you often want to give the player freedom to ad lib, but within certain parameters or boundaries. In addition some drum or bass patterns that are often improvised are very complex to notate and are often unreadable at sight to all but the very best reading players, who are not always the best or most versatile "feel" players. This is especially true in the case of drum "fills".

### KEYBOARDS

*Piano and electric piano*

The piano is a non transposing instrument written on two staves, treble and bass clef. Usually the treble clef is played by the right hand and the bass clef by the left hand, but there are of course many instances where you may deviate form this. You may wish to write out an exact part or supply a "guide" part, which will allow the pianist more freedom.

With many pop and commercial styles it is acceptable to give the pianist chord symbols and an indication of the rhythm, either by writing the name of the rhythm (eg bossa nova, jazz ballad etc) at the top of the part or by writing a rhythmic figure in the first bar (or two bars if it is a two bar pattern) and the indication "similar..."

If you wish the player to use the rhythm as guide and to make their own contribution to the feel you could indicate this with "similar ad lib".

It is conventional when giving a piano player chord symbols to also give them the bass part in the bass clef. This does not necessarily mean that they should play the part in unison with their left hand but so that they know what the bass player will be playing and be able to voice their chords appropriately and avoid clashes. It can often be useful to give the pianist vocal cues (essential with colla voce parts where the pianist is accompanying a singer and there is no steady tempo), or any other cues that might be useful (brass stabs,

instrumental lead lines, drum fills etc).

The piano can be useful to double up in unison with other instruments to give colour, especially useful with woodwinds.

Some conventional styles of accompaniment:

1. Bass notes and block chords. This is a very simple form of accompaniment, liable to sound rather corny.
2. Arpeggios. These will usually be rising or alternately rising and descending. The lowest note is often the root but not necessarily if their is a separate bass part.
3. A tremolo between two important notes of a chord (e.g. 3rds, 7ths)
4. Repeated block chords. This can be very powerful.
5. Sustained chords (pad). Sustains on piano can be enhanced by tremolos or "rolls".
6. "Stride" style. (Left hand bass in two, right hand chords on back beat). Often works best for solo piano as bass player would need to play in unison with the left hand. Good for 30s style.
7. Boogie. As above but left hand bass in four and right hand chords on off-beat quavers)

*Electric Organ*

Much of the above can apply to organ, obviously sustains are very useful but the sound can become wearing. With the use of a "Leslie" (rotating loudspeaker) more variety and intensity can be applied, there are usually two speeds: fast and slow.

*Synthesize.*

A very useful instrument but due to its enormous versatility and variety is beyond the scope of these notes Its use in arranging must depend on your own knowledge of its capabilities. If you intend to use synthesizers it is best to learn to program them or hire a competent programmer.

*Celeste*

A tinkly sound which can be used well in unison with woodwind or strings for a "pretty" effect.

*Accordion*

Associated with folk styles in many countries, can be used to impart the cliched "Parisian" or Italian street song flavour. Melodically it works very well in unison with flutes or clarinets.

*Harp*

The harp is tuned diatonically, chromatic tones being made available by a series of pedals. Writing for the harp is very much a specialist area, as many parts written as for keyboard are unplayable. I would recommend getting friendly with a harpist to be given a practical demonstration in the possibilities and impossibilities of harp playing.

Many harpists these days read chord symbols and simple parts can often be written with a lead line and chord symbols, but its best to know in advance that the harpist is happy with this.

A very useful "cliche" is the glissando. This can be written in full (*) or the first and last notes can be connected by a line and the implied notes indicated by a chord symbol(*).

**GUITAR**

The guitar is written in the treble clef and sounds an octave lower than written. It can function either as an accompanying instrument (rhythm guitar) or as a solo voice (lead guitar).

It is very rare for an arranger to write guitar chords in full notation, as many chord voicings possible on a keyboard are unplayable on a guitar. Chord parts usually consist of chord symbols with a rhythmic guide as with piano.

Obviously the acoustic guitar (either nylon or steel strung) is limited dynamically unless it is close miked, but the electric guitar is very versatile, especially with the use of effects such as wah wah, distortion (amp or fuzz box), phaser, flanger, tremolo, compression etc. Apart from wah wah which can be used on rhythm guitar, most of the effects are used for solos and lead playing and are used at the players (or producer's) discretion,

so the arranger is not required to have a thorough knowledge but it is worthwhile to investigate what is available. The sound of an electric guitar is often very personal to the player and will vary depending on the make of guitar and the amp settings or effects used. These days the guitar is even more versatile if the player has a "midi" guitar or interface which will allow the instrument to trigger an unlimited range of synthesized sounds.

The electric guitar can blend with any other instrument, depending on the player's chosen sound so some tactful direction may be necessary at rehearsal or on a session.

Many playing effects are available. Notes can be "bent" upwards by pushing the string or strings across the frets with the left hand or in either direction with the use of a "whammy" bar.

Harmonics are achieved as with all string instruments by lightly touching the string on a node with the left hand. The note has a pure bell like quality.

The standard tuning is (upward from the sixth string) E, A, D, G, B, E though the strings can be tuned in many different ways.

Some specialised styles:

"Slide" or "bottleneck" guitar is a style originally used by early blues players. The instrument is often tuned to an open chord and played with a glass tube held across the strings with the left hand to create a sliding (glissando) effect. Slide playing may require harder strings or a higher "action" (the distance between the strings and the fretboard) than normal. many slide players use specialised instruments such as the "Dobro" or "National Steel".

Hawaiian guitar is a style that also involves sliding and is usually played on a "lap steel" guitar which as the name implies is played on the lap with the fretboard facing upwards.

Pedal steel is usually used in country music. The instrument has ten strings and a system of pedals changes the tension of the strings, creating a glissando effect.

Other stringed instruments:

*Banjo*

Typical in dixieland (4 string banjo) or country (esp. bluegrass) where the 5 string banjo is used. In dixieland playing the banjo is usually a rhythm instrument, even when taking solos the players usually play chords rather than single lines. The banjo can be used as a melodic instrument in many styles to add an unexpected and sometimes even slightly oriental flavour. Tremolos work well. The 5 string banjo with its associated fingerpicking style is very much a specialist instrument. When writing bluegrass parts it is best to give chord symbols and allow the player to improvise.

*Mandolin*

Used in folk music of many cultures. (Notably Italian). Tremolos are very effective and are often the trademark of the mandolin.

Guitar accompaniments can be developed in the same way as piano (see above), though tremolos in accompaniments are unusual.

**BASS**

The double bass as used in jazz, pop, folk or country is usually played pizzicato as a rhythm instrument, though arco is sometimes used by jazz soloists. It is rarely used in modern pop music where bass parts are played on electric bass guitar or synth.

The bass guitar is tuned in the same way as the double bass, though some modern instruments have a lower (5th) string tuned to B. Many bass players also play fretless bass which is capable of smooth glissandi and a very expressive pronounced vibrato.

Bass parts can consist purely of chord symbols and a rhythmic guide, but unless you know the player well it is much better to write a notated part as well, even if you allow them freedom to ad lib. As with piano parts you could notate the first bar and then give chord symbols with the indication similar.

There are conventions regarding the writing of bass lines:

*Walking bass.*

This is a style most associated with jazz, but is sometimes used in rock & roll, blues and country. It consists of quarter notes played in a mixture of scales and arpeggios. A good rule of thumb is to have the root (or bass note implied by the inversion required) on the first note of the chord. You can include triplet

or 8th note "ornaments" but I find these are best left to the player's no doubt infinite good taste and discretion.

*"2 in a bar".*

Usually half notes in 4/4 time, but the same conventions apply to "1 in a bar" in 3/4 or any time signature. Often alternating roots and fifths but a the last note of a chord should be a root. Exceptions are when the root is moving down a 5th (or up a 4th) the 3rd can be used as a leading

note (*), or a 5th of a I chord can go to a 5th of V (*).

**DRUMKIT**

The conventional drumkit consists of:

- A stool on which the drummer sits,
- A bass drum played by a foot pedal,
- A pair of "hi hat" cymbals played by another foot pedal,
- A snare drum
- A floor tom tom (abbreviated to floor tom) one or more smaller toms
- A ride cymbal (a single large cymbal usually played rhythmically)
- Various other cymbals used for accents and effects (crash, splash etc)
- Cowbell, woodblock and triangle (optional)

Sticks are the normal way of playing drums and will be used unless indicated otherwise. Mallets have a softer ringing effect. Brushes have a less defined swishing effect.

The bass drum part often emulates or has some relation to the bass part.

The snare drum has a set of "snares" which are stretched across the lower head to give the drum a crisp, rattling sound. The snares can be turned off to produce a dryer more tom like sound. The snare is hit with a stick, often though by no means necessarily, to supply a rhythmic "backbeat" (beats 2 and 4 in 4/4 time). The backbeat is a characteristic of rock and roll and many forms of funk drumming. A loud accent can be played by hitting the drum head with the tip of the stick and the rim with the side of the stick simultaneously. This is called a rimshot and is very effective either with or without a crash cymbal. A "clicking" effect can be achieved by placing the end of the stick on the head and tapping the rim with the side of the stick. This is called a "sidestick" and is often used in the bossa nova rhythm to emulate the claves (see Latin percussion). It can also be used effectively to supply a soft backbeat in jazz or rock in quiet passages.

The high hat or ride cymbal usually play a steady rhythm (8th or 16th notes).The high hat can be opened by the footpedal (indicated "o" or closed "+"). Open notes are used singly, closed notes can be repeated (*). The high hat and ride are not usually played simultaneously, though sometimes the foot pedal only of the high hat is played during a ride rhythm to supply a subtle backbeat.

Crash cymbals will often mark accents or the beginning of a section (verse, chorus etc), and are usually played along with a bass drum accent.

Toms are played either rhythmically or used effectively in fills.

The drums are written in the bass clef or percussion clef. Conventionally the drums appear on the stave as in ex (*), but variations are possible as long as you indicate which drum is to be played.

Drum parts cause more problems than other rhythm section parts as one always has to choose whether to keep simple and allow the drummer freedom or to risk a part that may be too complex with the result that the drummer is so busy deciphering it that their feel suffers. Most Latin American rhythms can be indicated by their name and a very simple first bar followed by repeat bars. Good drummers have very good ears and will quickly embellish a simple part to fit an arrangement, but it is often useful to give cues such as brass stabs or phrases. This is especially important in jazz big band arrangements, where drums phrasing with the lead section is typical.

Sometimes you can write a rhythmic pattern without specifying the particular drum and allow the drummer freedom to choose or experiment.

It is useful to indicate the tempo in BPM and whether the 8th notes or 16th notes are played straight or "swung" as in swing or shuffle styles.

If you are copying drum parts I find it is very helpful to write 4 or 8 bars to a line (where the the music is in 4 or 8 bar phrases of course) so that the drummer can glance at the music rather than keep their head glued to the part and count bars at the expense of their creativity. However many bars in a phrase it is logical to start a new section at the beginning of the line and indicate at the end of a line how many bars in the line.

In jazz arrangements it can be effective to alter a drum pattern slightly when going to a middle 8 or a solo section. For instance changing from high hat to ride, or changing from 2 beats in a bar to 4.

Where a repeated pattern is played without variation it is possible to write "play 16 bars similar"

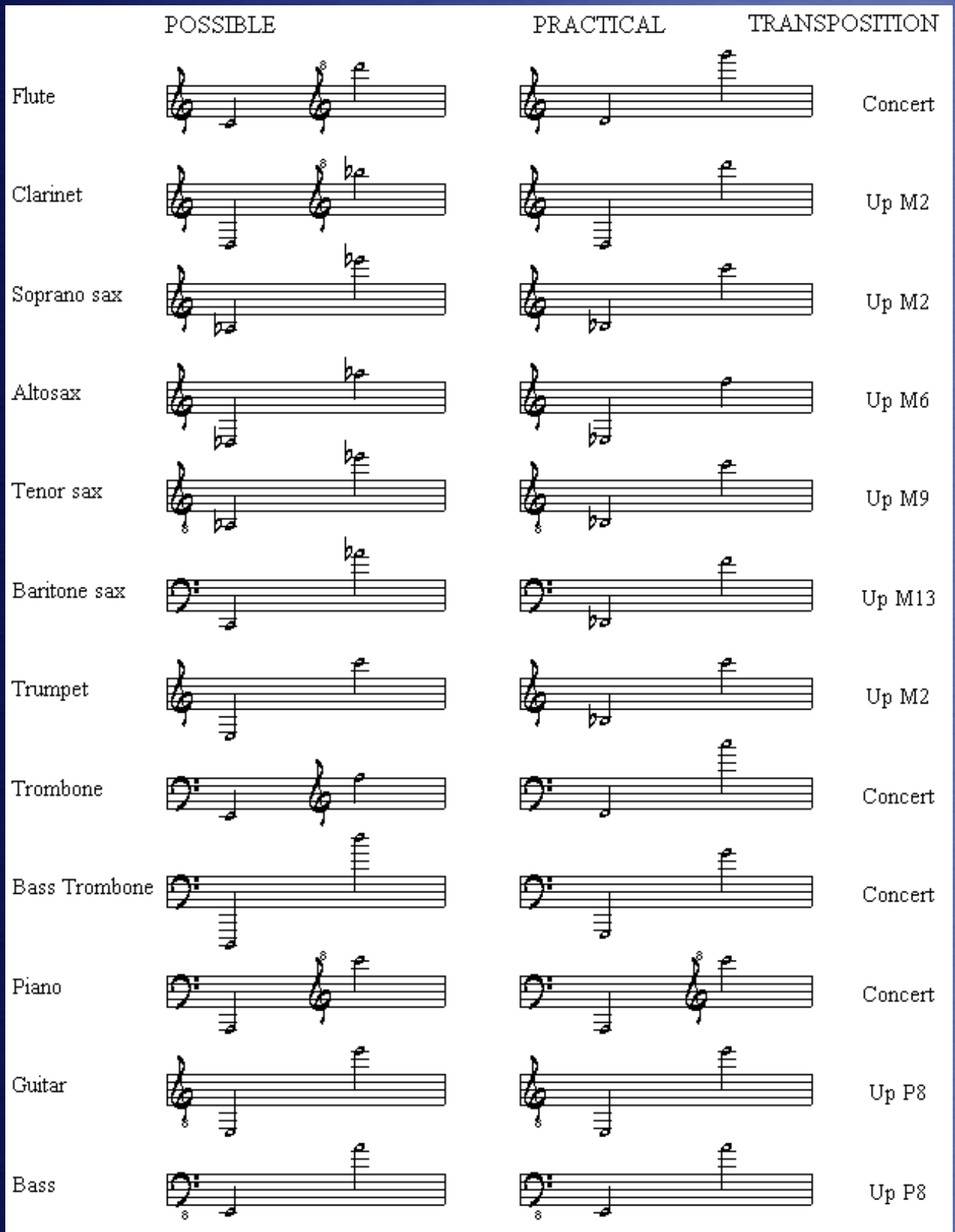
# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## INSTRUMENT RANGES



# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## TRANSPOSITION CHART

| Instrument | Untransposed score | Clef | Transposed parts | Clef |
|---|---|---|---|---|
| Alto sax | as sounds | treble | Up a major 6 | treble |
| Tenor sax | 8va | treble | Up a major 9 | treble |
| Baritone sax | as sounds | bass | Up a major 13 | treble |
| Trumpet | as sounds | treble | Up a major 2 | treble |
| Trombone | as sounds | bass | no transposition | bass |
| Guitar | 8va | treble | 8va | treble |
| Bass | 8va | bass | 8va | treble |

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone

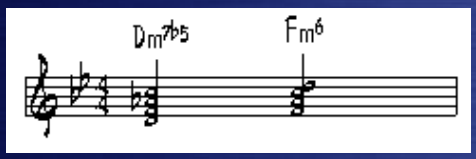




## REHARMONISATION

In some cases reharmonisation is necessary before arranging for jazz orchestra or combos. Most sheet music for popular music standards of the 30s, 40s and 50s will include chord symbols, but in some cases these will be wrong, too simple or too complex.

Some publishers of sheet music invert a min7b5 so that it becomes a min6:




Ex 1

This is done to simplify the chord symbol for guitarists. The inversion makes no difference to the overall harmony if played alongside a bass instrument, but as a given chord symbol it implies the wrong bass note. A genuine m6 chord is usually either a tonic minor, or a IVm6 as part of a IV- IVm - I (plagal cadence). If it appears to be part of a IVm6 - V7 - I progression the chances are it is an inversion of II should be changed to IIm7b5 - V7 - I.

In mainstream jazz four note chords (7ths) are usual. Most sheet music will include four note chords (7ths and 6ths), but with other material (eg folk tunes) you will need to adapt triads according to the table below:

### Major keys

| Triad | 4th note | Comments |
|---|---|---|
| I and IV major | Major 7 | Unless root is in melody |
| | Major 6 | Might sound cheesy. Use if root in melody |
| | Minor 7 | Only for blues |
| V | Minor 7 | |
| Minor | Minor 7 | |
| Passing diminished | Diminished 7 (= maj 6) | |
| Diminished (chord VII) | Minor 7 | Minor 7 b5 (half diminished) |

### Minor keys

| Triad | 4th note | Comments |
|---|---|---|
| Minor chord I | Major 6 or 7 | Can be dissonant or cheesy |
| | Minor 7 | Modal feel, may not always sound final |
| | None | Triad sometimes sounds best |
| Diminished chord II | Minor 7 | Minor 7 b5 (half diminished) |
| Major chord IV | Major 6 | |

| | | |
|---|---|---|
| | Minor 7 | Bluesy (can sound like dominant of bVII) |
| Minor chord IV | Major 6 or minor 7 | |
| V | Minor 7 | |
| Major chord bVI | Major 7 | |
| | Minor 7 | Bluesy |
| Minor chord VI | Minor 7 | |
| Major chord bVII | Major 7 | Dorian |
| | Minor 7 | Aeolian (beware, sounds like V7 of III major) |
| Minor chord VII | Diminished 7 | |

- "bVI" is used to denote chord built on minor 6 degree of scale, eg Ab in key of Cm or F in key of Am.
- A major or minor 6 chord does not have a $7^{th}$, otherwise the chord would be a $13^{th}$.

# COMPOSITION & ARRANGING

Pete Thomas,
Music
producer,
composer,
saxophone





## BLOCK VOICING

"Voicing" means harmonising a melody (or lead) with one or more instruments or *voices*, either with a similar instrument from the same section or with a combination. Block voicing is where the inside or harmony parts always move in the same direction as the lead. This type of harmony works well for the typical jazz orchestra (four trumpets, five saxophones, four trombones and rhythm section) but can also be used in many styles of pop and rock, e.g. for horn sections or backing vocals. Voicing can be used either on the actual melody or for a chordal accompaniment (backing).

### GENERAL RULES

- When writing for sections (eg all saxes or all trumpets) the melody part is usually the highest part but this is not always the case. When harmony parts are above the lead, care must be taken with the dynamics to allow the lead to be heard as a distinct melodic line.
- In mixed ensembles the lead line is not necessarily the top line but should be on the loudest instrument.

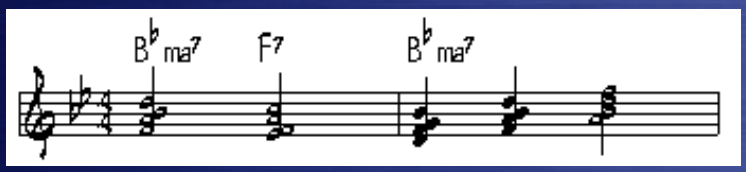
- A syncopated note anticipating a beat by a quaver (8th note) or less is usually harmonised with the chord of the beat following the anticipation.
- Do not combine an anticipation in one instrument or section with an on beat note in another section.

- In most cases the melody note should not be lower than middle C (C3) or harmonised parts will sound muddy.
- Usually a bass line is played in the rhythm section so only the melody (lead) and *inside parts* need to be written for a section. Any bass parts in the harmonisation must be consistent with the bass in the rhythm section.
- As the voices are moving in parallel motion, strict voice-leading rules of classical harmony do not apply, though there are situations where attention to voice-leading is desirable.

Four- and five-part voicings are more straightforward than two- and three-part. This is because all four chord tones are used. With fewer than four voices decisions need to be made about which notes to omit.

### FOUR PART CLOSE VOICING

Take a melody and add the three other notes of the chord beneath without omitting any.




As the melody of the Bb chord on beat one of bar 2 is the root, it has to be Bb6 not a Bbma7 to avoid a semitone interval at the top of the chord. Semitone intervals are no problem in inside parts. Unless a 6th chord lasts for more than one beat it is unnecessary to include it as a chord symbol for the rhythm section. (An exception would be if a rhythm section instrument was voicing chords with horns instead of comping)

*Extensions*

These are either defined by the melody or added to inside parts for colour. The rhythm section parts should include any extensions or alterations that last longer than one beat.

Extensions are usually treated as (unprepared) suspensions, 13th replaces 5th, 11th replaces 3rd, 9th replaces root.

*Allowable extensions and altered extensions:*

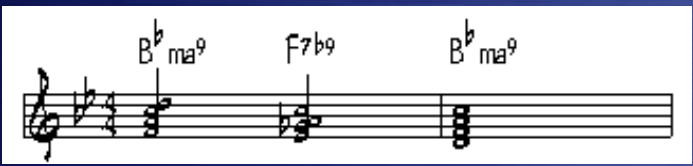
| **Chord type:** | **Maj 7** | **Maj 6** | **Min 7 or min7b5** | **Dominant 7** |
|---|---|---|---|---|
| | 9 | 9 | 9 | 9, 11, 13 |
| | #11 | #11 | 11 | b9, b10 (#9) |
| | 13 (rare) | | | #11 (b5) |
| | | | | b13 (+5) |

*Use with 4 part block voicing*

| **Extension** | **Omit** | |
|---|---|---|
| 13 | 5 | Unusual in inside parts |
| b13 | 5 | Often treated as augmented 5th |
| 11 | 3 | Use sparingly in inside parts |
| #11 | 5 | Often treated as b5th |
| 13 or b13 with #11 | 5 and root | With only four parts the 9th would also be omitted as the 3rd and 7th are necessary |
| 9 or b9 | Root | Use freely in inside parts |
| b10 (#9) | Root | Often a "suspension" of b9. Faster passages can omit 3rd instead of root for smoother voice leading, but does not sound as dissonant. |

*9ths*

9ths and altered 9ths are treated as suspensions of the root and always replace it, so the next chord note down is a 7th. In addition to 9ths in the lead, they can be freely used in inside parts for added interest. As with 6ths, unaltered 9ths do not need to be included in the rhythm section chord symbols unless they are used for the entire duration of a chord.



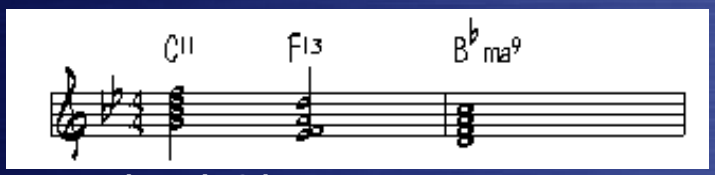
Ex 3: 9ths and altered 9ths.

*11ths*

11ths on a dominant 7 usually omit the 3rd, so can be viewed as "slash" chords, eg a C11 (Gm7/C) would be voiced as a Gm7. (You can ignore the C as it is covered by the bass). 11ths on a minor 7 do not *need* to omit the 3rd, but for close voicing it is best to treat them the same as above.

*13ths*

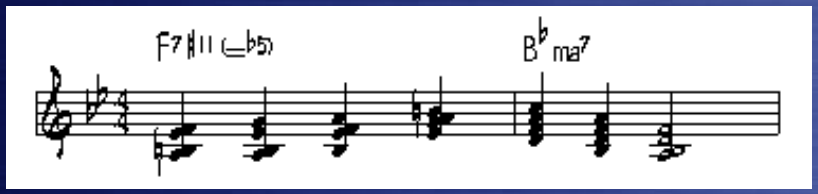
13ths can be treated as suspensions of the 5th so the next note down is the 3rd.



Ex 4: 11ths and 13ths

*#11ths*

Usually a #11th can be treated as a b5, so the next note down is the 3rd.

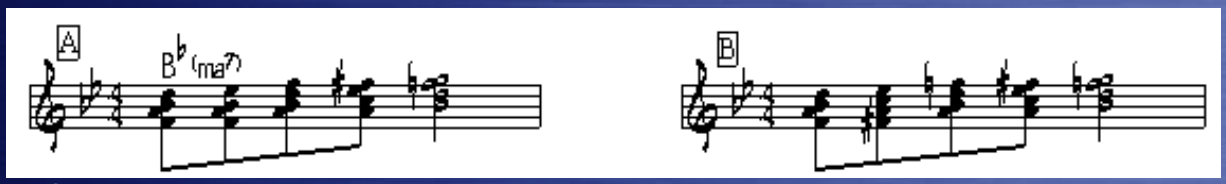


Ex 5: #11ths (b5ths)

**NON CHORD NOTES**

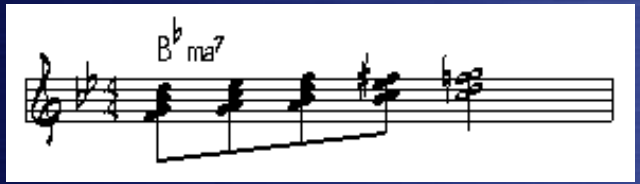
*Passing notes*

Passing notes are notes that occur in a step between two chord notes. In some cases they can be harmonised as if they are substituted for a note of the given chord (eg. a suspension or upper extension), or they can be harmonised with other passing notes to create a new passing chord (very often a passing diminished).



Ex 6: Passing notes

In ex 6A the Eb is harmonised as if it is an 11th or a suspended 4th. The F# is harmonised with a diminished chord. There is no movement between the first two notes of voices two, three and four. At slow tempos this is not a problem, but at medium and fast tempos there may be articulation problems, especially if the lead instrument is playing legato. The passing diminished chord in ex 6B is preferable as two of the three harmony voices are now moving. The harmonic impact of the passing chords become less important at faster tempos, but the need to minimise repeated notes in inside parts where the lead is moving becomes greater and it is usually possible to create movement in all voices.

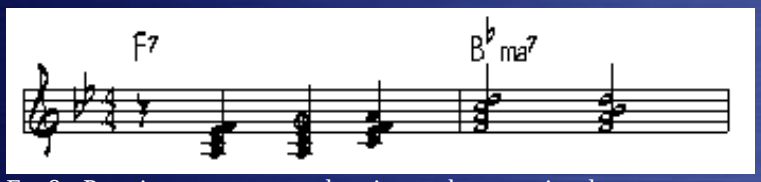


Ex 7: Revoicing to give more movement in inside parts at fast tempos

- The first note is harmonised with a Bb6 instead of major 7 to allow voice three to move from G to A.
- The F# in the second chord has been changed to G to give a smoother melodic line.
- The fourth voice of the final chord has been changed to a 9th to allow movement A-Bb-C instead of the repeated A on the second and third chords. Harmonically this is not as good as the passing diminished but will allow for a smoother performance at fast tempos.

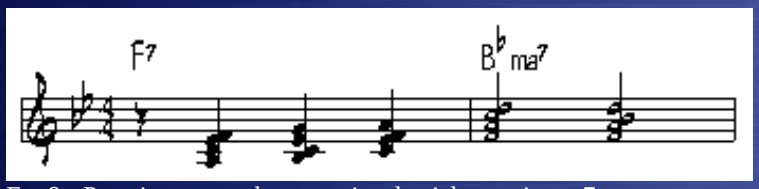
TIP: It is a good idea to harmonise the chord notes before harmonising the passing notes.

A passing diminished should not usually be used with a dominant chord, instead use a minor7.



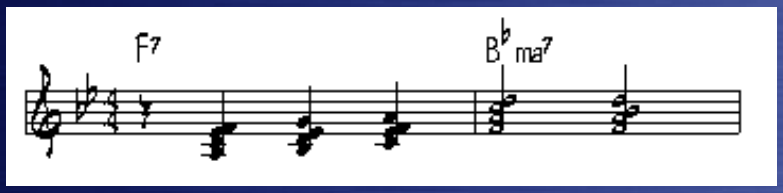
Ex 8: Passing note on a dominant harmonised as an extension

In ex 8 the passing note at beat three is harmonised as a 9th, replacing the root of the previous beat resulting in static inside parts. Where a passing chord is required for dominant chords you can usually use the minor 7th chord whose root is a fifth higher, in this case a Cmin7:



Ex 9: Passing note harmonised with a minor 7.

Here the lower part is moving nicely but the second and third parts are still static. The Eb is necessary to the F7 chord, especially at slower tempos, so will need to stay but a Cm9 can be used to give more movement:

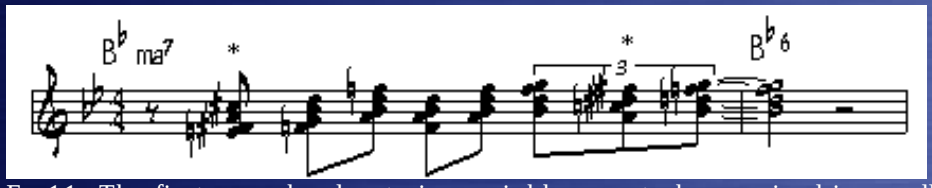


Ex 10: Passing note harmonised with minor 9. (NB no root as 9th acts as suspension)

The Cm9 at beat 3 allows two of the three inside parts to move.

*Chromatic Neighbour notes and auxiliaries*

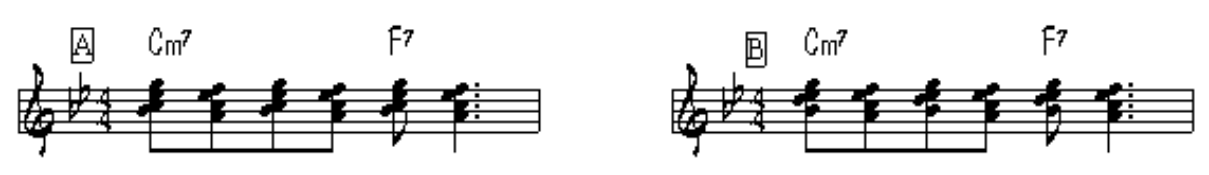
These can be harmonised with a chord of the same type moving in parallel or diminished chords:



Ex 11: The first non-chord note is a neighbour note harmonised in parallel, the second is a lower auxiliary harmonised with a diminished. Both of these harmonisations where chosen to allow movement in the inside parts.

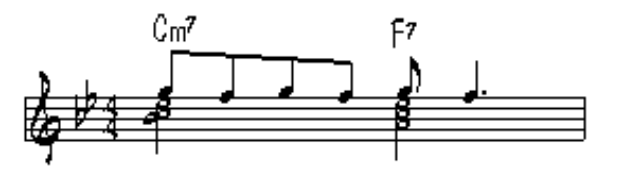
*Diatonic neighbour notes and auxiliaries*

These are usually treated as suspensions or extensions. The following example shows how lower auxiliaries can be reharmonised on a IIm7-V7-I



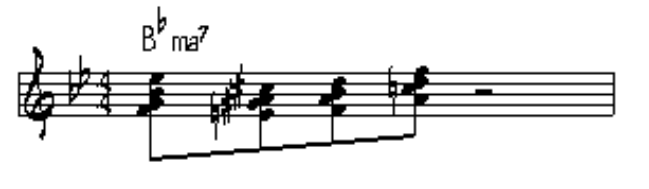

Ex 12 (A): The F in the Cm7 is harmonised with an F7, the G in the F7 is harmonised with a Cm7. In 12 (B) the Cm9 is used to give more movement to the third part.

A typical harmonisation of this passage could also have used sustained inside parts:




Ex 13: sustained inside parts beneath auxiliary notes.

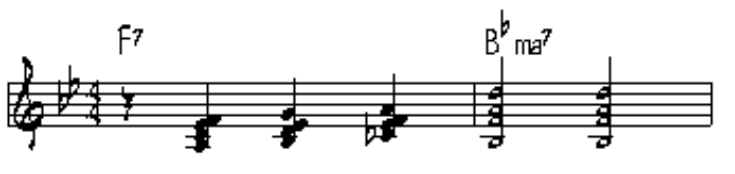
*Changing tones (enclosure)*




Ex 14: The first note is harmonised as a suspension, the second note as a lower chromatic neighbour note with a chord of the same type moving in parallel.

## OPEN VOICING

For open voicing the simplest method is to drop the second voice down an octave. Entire passages can be either open or close, or can use a combination.




Ex 15: Close and open voicing

Here the voicing is open on the Bb ma7 chord. This works well as the melody is moving by a larger interval and a b5 on the last beat of the V7 gives some strong voice leading at the cadence.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## BLOCK VOICING (2)

### FIVE PART

1. Same as for four-part close voicing but with melody doubled an octave lower.
2. Same as for four-part open voicing but with the fifth part on roots
3. Clusters: add the 6 and 9 to triads; add the 9 to 7 chords. Close or open. The lead can be doubled in octaves to create a sixth voice. Clusters work well where a more dissonant sound is required or to add some tension to more traditionally voiced chords.

### TWO PART

The conventions of two-part writing specify:

- The interval between melody and harmony line is a third or a sixth.
- The note chosen for the harmony should be a chord note if the melody is a chord note.
- If the melody is a passing note the harmony part is often a passing note.
- All thirds or all sixths can sound bland.
- When choosing between third or sixth voice leading and good melodic movement in the harmony part should be taken into account.

In mainstream jazz arranging other intervals can be used occasionally either to create tension through dissonance or when a more melodic harmony line results:

| Interval between lead and harmony | |
|---|---|

| | |
|---|---|
| major 2nds and minor 7ths | Dissonant - should be used only when stylistically appropriate. Avoid if in doubt. |
| minor 2nds, major 7ths | Very dissonant - useful for special effects |
| flattened/augmented 5ths (#4ths) | Can be used where the given chord requires |
| perfect 5ths, 4ths | Sound weak when combined with 3rds and 6ths, but can be used where stylistically appropriate (eg modal jazz) |

Where the melody note is a chord tone, the harmony note should be a chord tone. Where the melody is a passing note or extension the harmony is often also a passing note or extension. The weaker intervals can be used on weak beats to avoid leaps in the lower part. Be careful of thinking of the 6th in a chord as a *proper* harmony note, its main function is to add thickness or colouration in four-part harmony and its use in two-part may imply a different chord. Long passages containing *all* 3rds or *all* 6ths should be avoided, but constant alternating between 3rds and 6ths should only be used when a better melodic harmony line results.

**THREE PART**

Harmonise the melody in the same way as for four part but only add two other chord notes from the lead downwards. One of the four chord notes will have to be omitted:

1. In all chords there must be a 3rd and 7th (except when the root of a major 7 is in the lead, in which case the 3rd and 6th ).
2. Perfect 5ths can be omitted from chords, and so can roots provided there is a bass instrument somewhere playing them. Where there is a choice of note use the one that gives the best melodic movement in the harmony parts.
3. If the chord requires an altered 5th then that note should be used and the root should be omitted.

**FULL ENSEMBLE (Tutti)**

There are many methods of writing full ensemble for the jazz orchestra. Here are two very basic methods:

*Combining sections.*

Write close voicing for trumpets, close or open voicing for trombones immediately below them, add the saxes

written with open voicing with the lead alto doubling the 2nd or 3rd trumpet.

*"Big Chords"*

Add chord tones downwards from the lead as with four-part. When writing "big chords" spread across the entire ensemble use smaller intervals high up, larger intervals low down. Roots and 5ths can be doubled, take care doubling 3rds. Avoid upper extensions low down. (See Russo -*Composing For The Jazz Orchestra*)

**BACKINGS**

*1) A chordal accompaniment or "pad".*

In this case a solo instrument or unison line is accompanied by instruments of the same or different section playing sustained chords. The lead line of the chordal accompaniment should move smoothly paying attention to voice leading where possible. This lead line can be harmonised with close or open block voicing, or traditional choral type voicing. The melody need not be higher than the backing but this is by no means essential, especially if the melody is on a stronger instrument. You can swap between block voicing and chordal accompaniment freely within the same passage.

Care must be taken with range and dynamics to avoid swamping the melody, especially if the accompanying instruments are of the same section as the solo instrument. With a different section you also need to take tonal dynamic considerations into account, especially when the accompanying instruments are stronger, e.g. great care would have to be taken if a flute were taking the melody and brass instruments were sustaining a chordal backing. This kind of "imbalance" can work in a studio with close miking but not in an acoustic situation. In this case it would be good to use mutes on the trumpets.

*2. Stabs or short rhythmic phrases.*

These nearly always "fill the gaps" in the melody, usually with a different section of instruments (a common big band cliché). It was often necessary on vocal arrangements in the days before powerful PA systems when a sustained backing would often drown out a singer in a club. Obviously great care should be taken if the stabs are not in the gaps of the tune, as they will confuse the melody. It can be very effective if the stab phrases have some kind of unity, e.g. a repeated riff. The riff may have to adapt to the harmonic changes (especially good if they move logically in scale steps). This often gives a feeling of shape that may not happen if the phrases are more arbitrary. Either way the phrases should complement the melody.

*3. Counterpoint.*

This is where a second (subordinate) melody is played at the same time as the main melody. This can be a completely independent melody or an imitation (fugue).

Some good rules to observe are:

1. The counterpoint should sustain while the melody is moving and vice versa
2. Contrary motion works very well
3. If the melody is in unison or octaves it can be a good idea to have the counterpoint in block harmony and vice versa.
4. The parts can cross, but preferably if the counterpoint is played on a different instrument or section.

## GENERAL TIPS AND HINTS

- Transcription of existing arrangements is one of the best ways to learn, not just the rules but how different arrangers have created their individual styles, by bending or breaking the rules, or creating their own.
- Write legibly.
- Do not write transposed scores.
- However large the ensemble, unisons and octaves should not be ignored. They can be very powerful, or supply a contrast to thick harmony. When using backing figures or counterpoint it often works well to have the lead in harmony and the backing in unison, or vice versa. It can be very effective to use unison on an anacrusis (pickup) or faster melodic passages, followed by open or closed harmony on slower moving lines.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





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# COMPOSITION & ARRANGING

Pete Thomas,
Music
producer,
composer,
saxophone



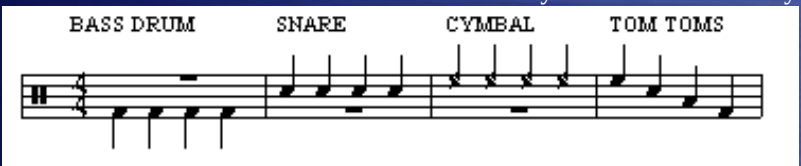


## DRUMS

### NOTATION

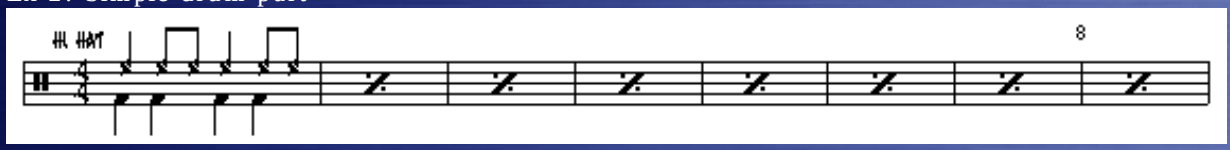
In mainstream jazz arrangements, drummers are nearly always given a very basic "guide" part. The part should be constructed to give the maximum information without becoming at all cluttered or awkward to read. This is not because drummers are not good readers, but so that they can concentrate on listening and improvising a creative and sensitive performance. Fills are usually left up to the performer. Most parts can be written with just bass drum, cymbal (hi hat or ride), snare and in some cases tom toms, though the latter should be used for specific rhythms rather than written solos.

Ex 1: Basic drum notation. Note that many drum kits will only have two tom toms.



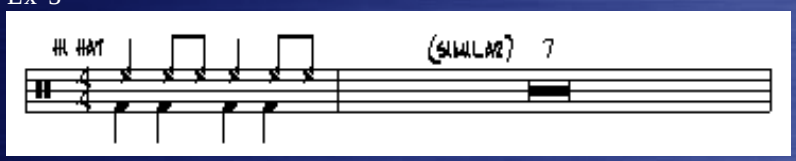

If a basic swing ride rhythm is required, it is common to write just bass drum and cymbal pattern for one bar followed by repeat bars. The bass drum part should follow the bass part, eg if the bass player has a walking bass, you should write four bass drum beats and if the bass player is playing two beats to a bar you should write two bass drum beats for the drummer. (The drummer does not necessarily play the bass drum – this is just so the drummer knows what the bass player is doing). The cymbal part should specify which cymbal (hi hat or ride) is to be played and whether any type of sticks other than normal should be used (eg brushes or mallets).

Ex 2: Simple drum part




The above is sometimes written like this:

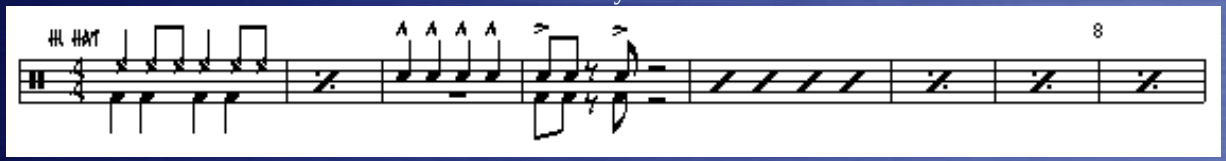
Ex 3




Ex 2 is better as it is easier to follow and you will be able to hear the drum part in Logic (The repeats signs hide the actual MIDI notes).

Once a basic rhythm has been established it is allowable to use slashes. This is especially useful after a departure from the basic rhythm.

Ex 4: Slashes used to denote return to basic rhythm

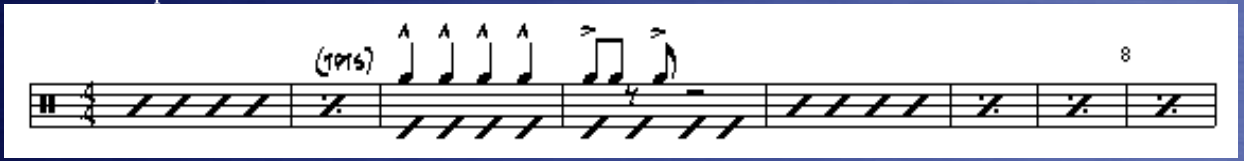


This example uses two score styles in Logic. Bars 1 – 4 are the basic "#Drums" style, bars 5 – 8 use the "Drums-slash" style. This allows you to hear the MIDI part but the notes are hidden.

## PHRASING AND ACCENTS

When a drummer is required to accentuate rhythmic passages or accents in the brass or saxophones, they can either be given these as an exact part to play (see above ex. 4) or as cues. If a drummer is given cues, they have more freedom to interpret the part.

Ex5: Drum part with cues




In this example bars 1-2 and 5-7 use the score style "Drums-slash", bars 3-4 use the style "#Drums-combi". In this case a drummer would choose which drums to play and probably precede the phrase with a short fill.

## STYLISTIC CONSIDERATIONS

*Backbeat*

The backbeat (ie beats 2 and 4 in 4/4) can be accented with:

- Snare drum - typically rock and roll, loud climaxes in jazz and "dance" jazz styles such as swing, jump and r∧b.
- Hi hat foot pedal and/or sidestick on snare - subtler and quieter jazz styles

*Bass drum*

The bass drum is often written purely as a gudie to indicate what the bas player is doing. If a bass player has a "walking line" it is usual to write for bass drum beats in a bar of 4/4. (a drummer will rarely actually play this except in certain styles such as "jump". If the bass player is playing 2 beats to the bar, it is usual to write two beats for the bass drum.

# COMPOSITION & ARRANGING

Pete Thomas,
Music
producer,
composer,
saxophone

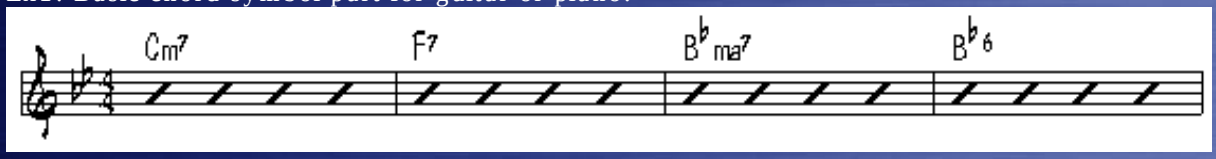




## PIANO/GUITAR

Piano and guitar parts are often very basic in big band writing and are just to supply a rhythmic backing (comping). Much of the interpretation is left up to the performer. In this case the parts may just consist of chord symbols which the player will interpret to fit the style.

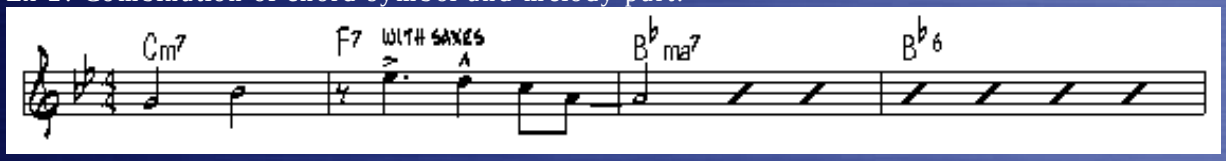
Ex1: Basic chord symbol part for guitar or piano.




Symbols can be written above or below the staff, as long it is obvious which staff they belong to.

If specific melody lines are required on a piano or guitar part, they can be combined with the chord symbol part. Any parts that are unison with other instruments should have the same accent markings.

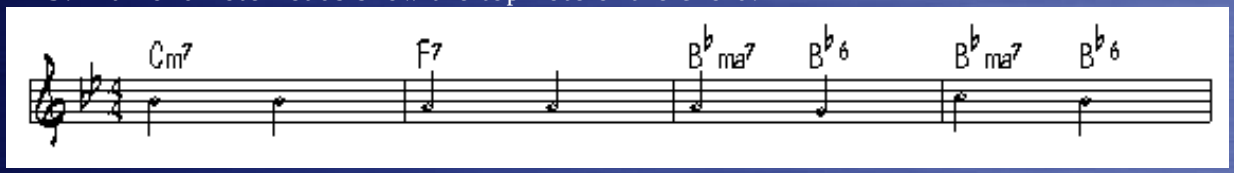
Ex 2: Combination of chord symbol and melody part.




With big band arranging it would be more common to give piano or guitar a melody part if they were featured in a small combo section of the arrangement, rather than playing a unison with a brass section.

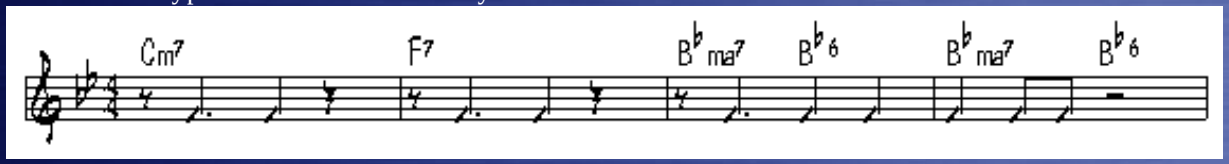
It is not usually required to write out exact chord voicings for piano or guitar, but in some cases it may be worth writing the top note of a chord, especially if specific guide tones are useful to the part. In this case it is a good idea to use a different note head style:

Ex 3: Diamond note heads show the top note of the chord.



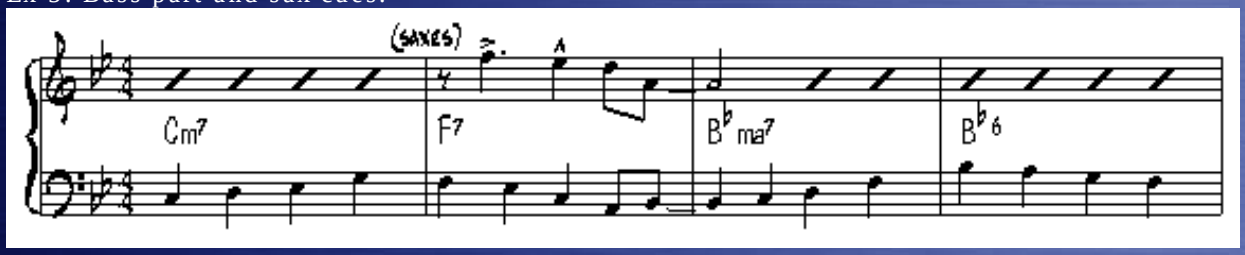

If a specific rhythm is required, slash type note heads can be used

Ex 4: Slash type note heads show rhythm of chords.




If an arrangement includes a written bass line, the piano part should include this, not so that the pianist can play the line in unison but so that they can see what the bass player will be playing so that they can voice their chords accordingly. Likewise any other instrument or section part can be given as a cue, so that the pianist can construct an accompanying part.

Ex 5: Bass part and sax cues.



# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





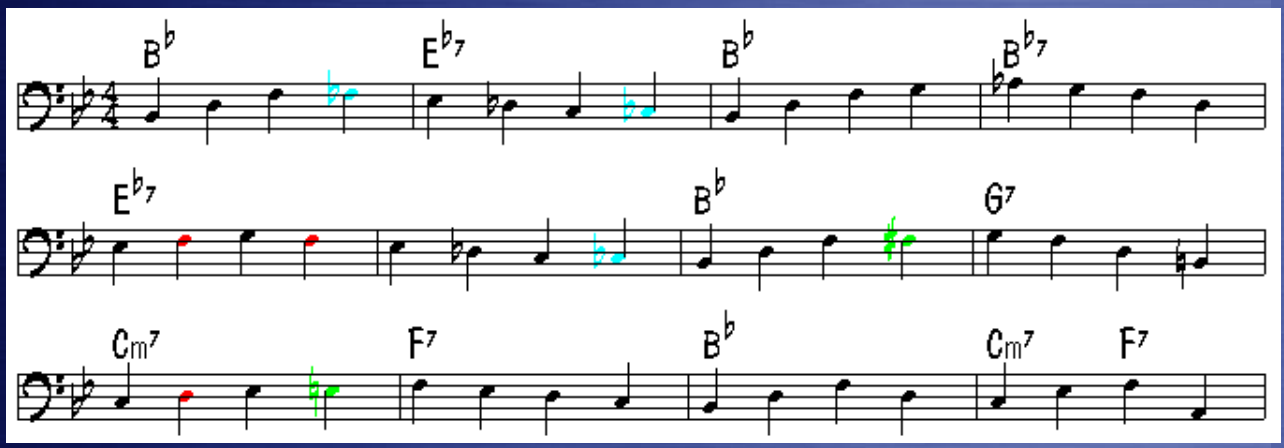
## WALKING BASS

The walking bass line is usually made up of arpeggios and scale passages. The main object is to state every beat, so the line is predominantly crotchets, but can include quavers and triplets.

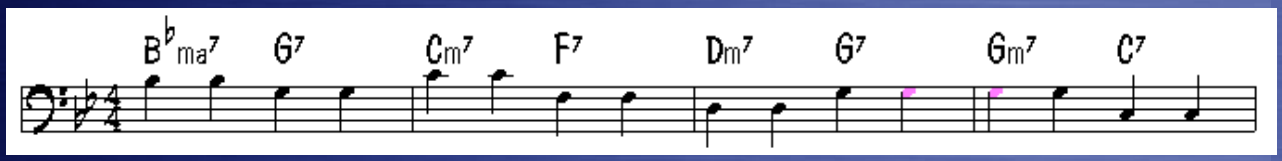
This table shows some basic rules of the 4/4 walking bass. (Chord tones = Root, 3rd, 5th, 6th or 7th)

| Beat | One chord per bar | Two chords per bar |
|---|---|---|
| 1 | Usually a root (but can be another chord tone if chord is a repetition of the previous bar) | Root |
| 2 | Chord tone or passing note | Chord tone or passing note |
| 3 | Chord tone or passing note | Root |
| 4 | Chord tone, passing note, (often leading note to next chord) | Chord tone or passing note |

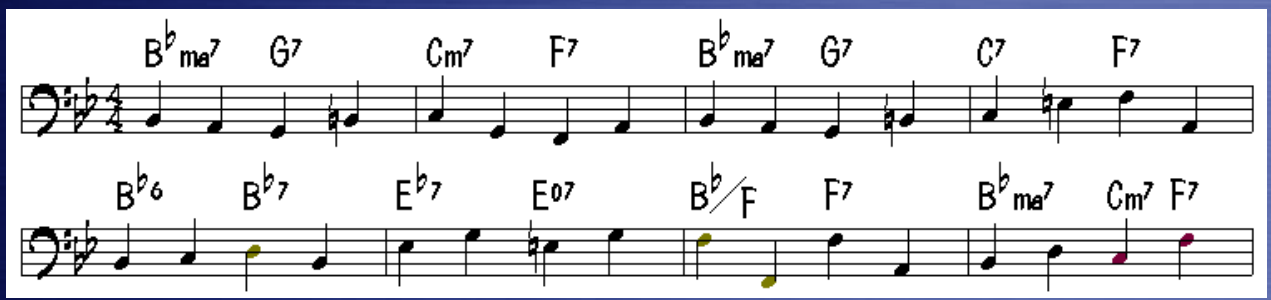
Passing notes can be used between chord tones either on the same chord or between chord changes, often as leading notes or approach tones (these are notes that approach a chord tone chromatically from above)




Repeated notes are sometimes used, but are not recommended over a chord change or from a strong to a weak beat (see below)




Chords are nearly always in root position, although inversions are required in certain sequences, eg "I Got Rhythm". Where chords are changing every beat use roots.




- Quaver and triplet notes can be used at times for variety.

- Large interval leaps are useful occasionally and are usually followed by a scale passage moving in the opposite direction.

# COMPOSITION & ARRANGING

Pete Thomas, Music producer, composer, saxophone





## HINTS AND TIPS

- Transcription of existing arrangements is one of the best ways to learn, not just the rules but how different arrangers have created their individual styles, by bending or breaking the rules, or creating their own.
- Write legibly.
- Write untransposed scores.
- However large the ensemble, unisons and octaves should not be ignored. They can be very powerful, or supply a contrast to thick harmony. When using backing figures or counterpoint it often works well to have the lead in harmony and the backing in unison, or vice versa. It can be very effective to use unison on an anacrusis (pickup) or faster melodic passages, followed by open or closed harmony on slower moving lines.

# JAZZ THEORY & IMPROVISATION

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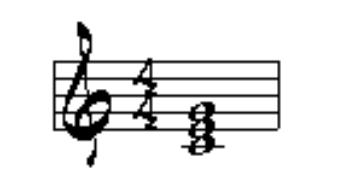
## BASIC CHORDS

The most basic chord formation is a triad, consisting of the root, 3rd and 5th.



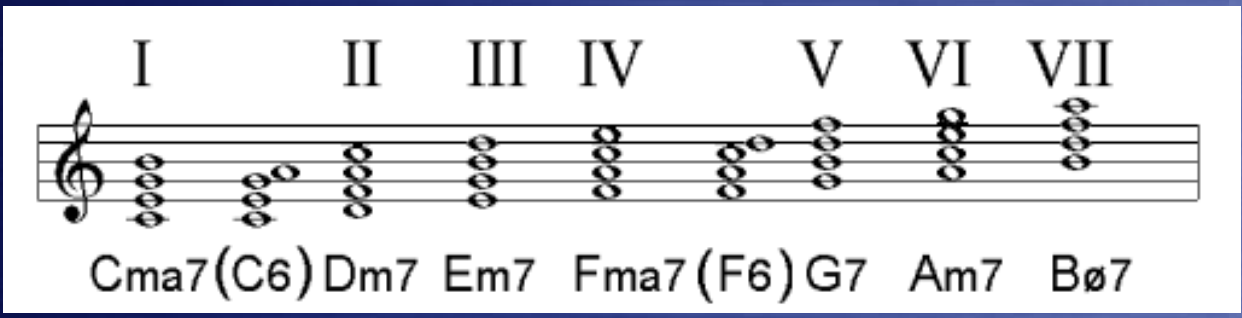
ex 1a: C major (triad)

Jazz rarely uses triads: chords usually have at least four notes so the diatonic 7th is added (ex 1b). Added notes beyond the 7th are called upper extensions

We shall be looking at chord types in two ways:

1. As chords functioning diatonically within a key
2. As different types of chords based on one root, which can function in various keys

**A) Chords functioning diatonically within a major key:**




ex 1b: Diatonic chords of C major:

N.B. A 6th is an alternative to the major 7th on chords I and IV. This usually occurs when either:

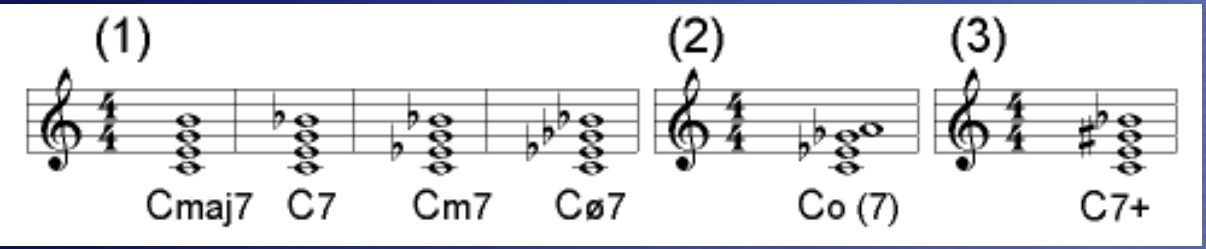
**a)** the 6th is the melody note,
or
**b)** when the root is the melody note (to avoid a semitone interval between melody note and 7th. Note: this semitone interval is fine when it is between "inside" parts of an inversion of a chord)

As you can see diatonic four-note chords in a major key fall into four different categories:

| *Chord* | *Symbol* | *Defining Intervals* |
|---|---|---|
| chords I and IV | major 7 | contains major 3rd and major 7th |
| chord V | (dominant) 7 | contains major 3rd and minor 7th |
| chords II, III and VI | minor 7 | contains minor 3rd and minor 7th |
| chord VII | half diminished (minor 7 b5) | contains minor 3rd, a diminished flattened) 5th and minor 7th |

It is important to learn all diatonic chords in all keys. Using the roman numeral system helps; e.g. chords II, III and VI in any major key are always minor 7 chords.

**B) Different types of chords based on one root:**




ex 1c: basic chords:

| *Chord type* | *Possible functions in different keys* |
|---|---|
| Major 7 | I of C, IV of G |
| Dominant 7 | V of F |
| Minor 7 | II of Bb, III of Ab, VI of Eb |
| Half diminished (minor 7 flat 5) | VII of Db |

There are two further basic chord types that are not diatonic in a major key but are also very important:

1. The diminished 7 chord (ex 1c-2). It is not always necessary to write the "7" in the chord symbol, it is assumed that all diminished chords are four note chords rather than triads.
2. The augmented chord. (ex 1c-3) . In jazz this is nearly always a dominant 7 chord with an augmented 5th so it is best to refer to it as a 7 augmented (As in C7 augmented).

Note that "7" on its own *always* means a dominant 7 type chord, a major 7 is*always* denoted "major" or one of its abbreviations.

The table in ex 1d shows some alternative "spellings" for chord symbols. Only symbols in **bold**font are recommended for clarity (A more comprehensive table can be found here)

| | | | | |
|---|---|---|---|---|
| C major 7 | **Cmaj7** | **Cma7** | CΔ | CM7 |
| C7 | **C7** | | | |
| C minor 7 | **Cm7** | **Cmin7** | C-7 | C- |
| C half diminished (minor 7 b5) | **Cø7** | **Cm7 b5** | **Cmin7 b5** | C-7 b5 |
| C diminished 7 | **Cº (7)** | **C dim (7)** | | |
| C7 augmented | **C7+** | C7aug | C7+5 | C+7 |

ex 1d: alternative "spelling" of chord symbols.

With the exception of tritone substitutes and diminished scales and arpeggios, correct enharmonic spelling is necessary, e.g. the 7th degree of a B major scale is A# not Bb, the 3rd of Eb minor is Gb not F#.

# JAZZ THEORY & IMPROVISATION

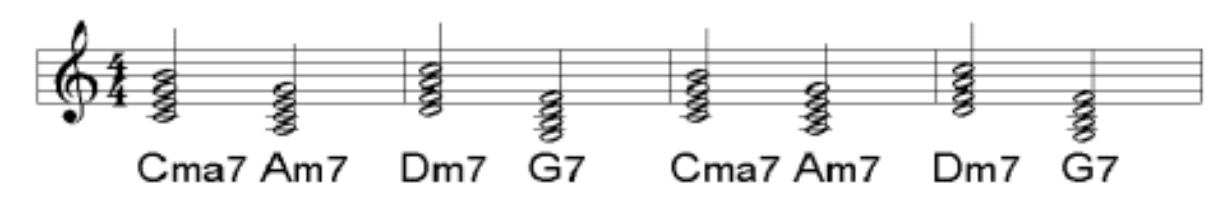
Pete Thomas, Music producer, composer, saxophone





## CHORD PROGRESSIONS

Apart from blues and early jazz progressions, the traditional I-IV-V sequence is not common in jazz. One of the most basic chord progressions is I-VI-II-V (ex 2a).




ex 2a (Ima7-Vim7-Iim7-V7)

As in classical harmony there are 3 main areas: tonic, subdominant and dominant. It can be useful to think of tonic as "home", subdominant as "away from home" and dominant as "returning home".

**1) Tonic area**

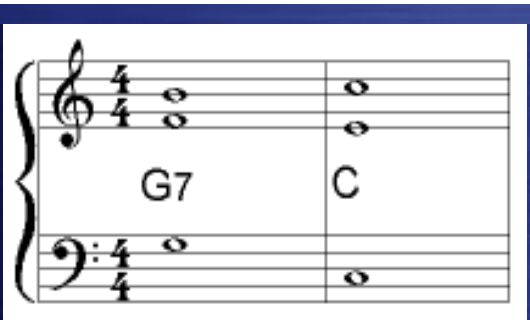
The tonic area obviously includes chord I, but also includes chord III and sometimes chord VI. The chords are similar because their roots are a diatonic third away from chord I (three out of the four notes of these chords are the same as those in chord I). Diatonic root movement of a 3rd is therefore seen as a *weak* progression. Chord III is often used as a substitute for chord I.

**2) Subdominant area**

Traditionally this is chord IV but also includes chord II and sometimes chord VI. Chord VI is a diatonic 3rd away from chord I and chord IV hence it can be seen either as tonic or subdominant, depending on context. In jazz the II chord is more common than the IV chord as a subdominant, but it also functions very commonly as a "lead in" to the dominat V chord. IV is very common as a subdominant in blues.

**3) Dominant area**

Chord V and chord VII. The dominant quality of a chord is usually defined by the*tritone* (flattened 5th) interval which creates what is traditionally thought of as a dissonance or a need to resolve to a chord that sounds more *at rest* (ex 2b). The VII is rarely used as a dominant.




ex 2b: Resolution of tritone.

# JAZZ THEORY & IMPROVISATION

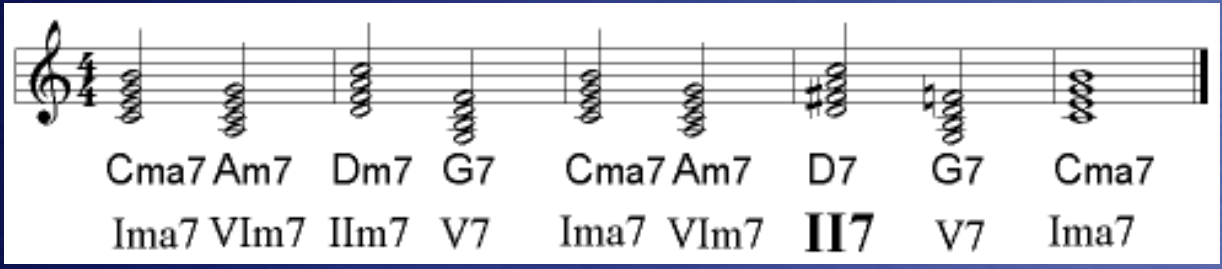
Pete Thomas, Music producer, composer, saxophone





## SECONDARY DOMINANTS

Conventionally a secondary dominant is a V7 of V7 chord: in the key of C, instead of preceding G7 by Dm7, the G7 is preceded by D7 - the dominant chord in the key of G. An actual modulation does not occur because the G is not a tonic, it is a G7 and therefore functioning in the key of C (ex 2c). In this case it is created by chromatically altering the 3rd of the Dm7 chord from minor to major.

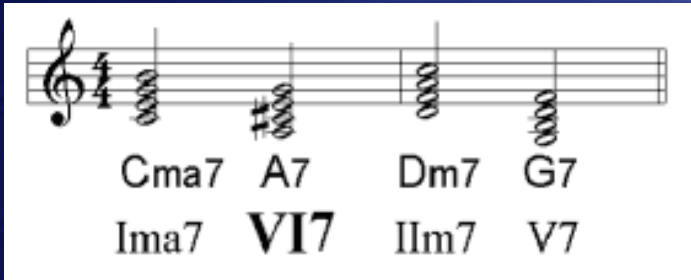



ex 2c: Secondary dominant: chord II7 (V7 of V)

In practice any chord that is not a tonic chord can be preceded by a secondary dominant.

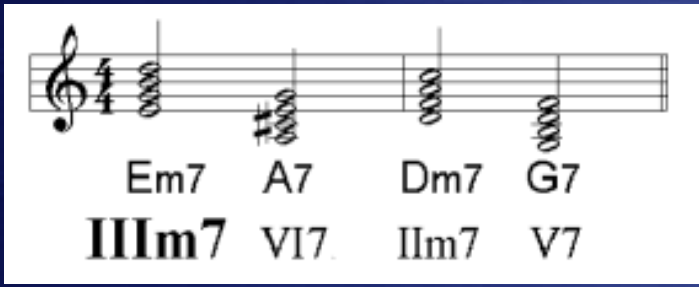
When analysing this progression we call it II7-V7-I. From this it is obvious that the II chord is a dominant 7th rather than a minor 7th, which would have been called "IIm7".

If we look again at a I-VI-II-V sequence we could instead create a secondary dominant of the IIm7 by chromatically altering the VIm7 to VI7. It is extremely common to alter the VI chord in this way: one advantage of changing m7 chords to secondary dominants is that there are more interesting sounding extensions and alterations available on dominant 7th chords.




ex 2d: Secondary dominant of II

It is also very common in jazz to use chord III as a substitute for chord I (seeTonic Area)




ex 2e: Substitution of chord III for chord I

Although they never actually resolve, the Em7 and A7 could be also viewed as IIm7 V7 in the key of D. In this case the 3rd scale degree of the tonic is not present in either chord so the key centre could actually be either D major or D minor. For now we shall consider this*alternative* key centre to be D major.

Looking at it like this, there are two ways to describe the progression in ex 2e using RN analysis:

(a) **C:** IIIm7-VI7-IIm7-V7-Ima7 etc.

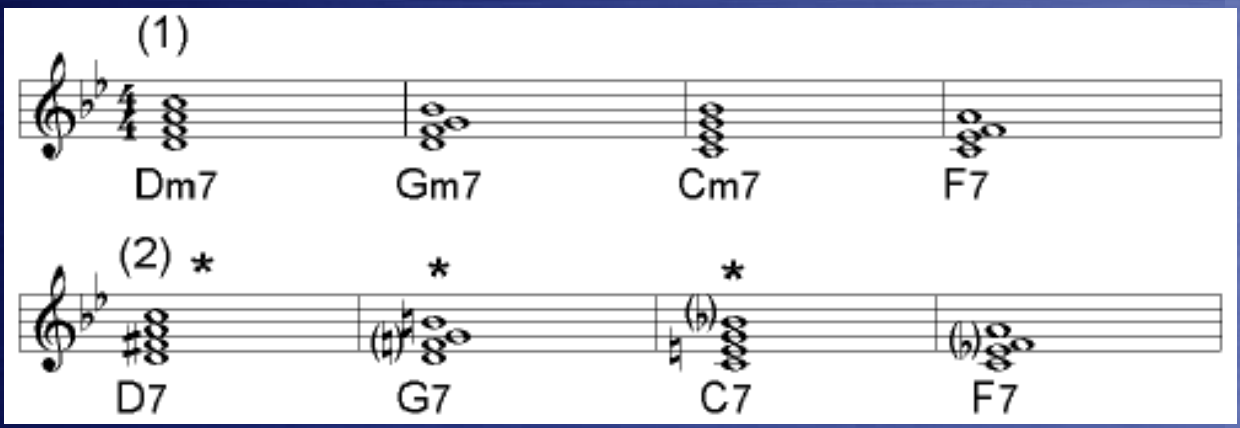
(b) **D:** IIm7-V7 **C:** IIm7-V7-Ima7 etc.

Method (a) defines all the chords in their relationship to the key of the tune.

Method (b) defines the chords in their relationship to the key centres (D and C) for each II-V progression.

Although *theoretically* method (a) is the correct analysis - A7 is a secondary dominant: it precedes Dm7 which is functioning in the key of C so the progression does not actually modulate -*in practice* method (b) can often be more useful to the improviser (See Modes for Improvisation)

A secondary dominant can have its own secondary dominant. We could take a diatonic IIIm7-VI7-IIm7-V7 sequence and make all the minor 7 chords secondary dominants.




ex 2f: (1) Diatonic III-VI-II-V sequence

(2) Minor 7 chords replaced by secondary dominants*

N.B. These chords are "voiced" to allow the "top" and "inside" parts to move

smoothly. (Compare the root position voicing in ex. 2c, d and e). This type of voicing is typical of horn parts or right hand piano voicing. A bass part or left hand would normally supply the roots.

# JAZZ THEORY & IMPROVISATION

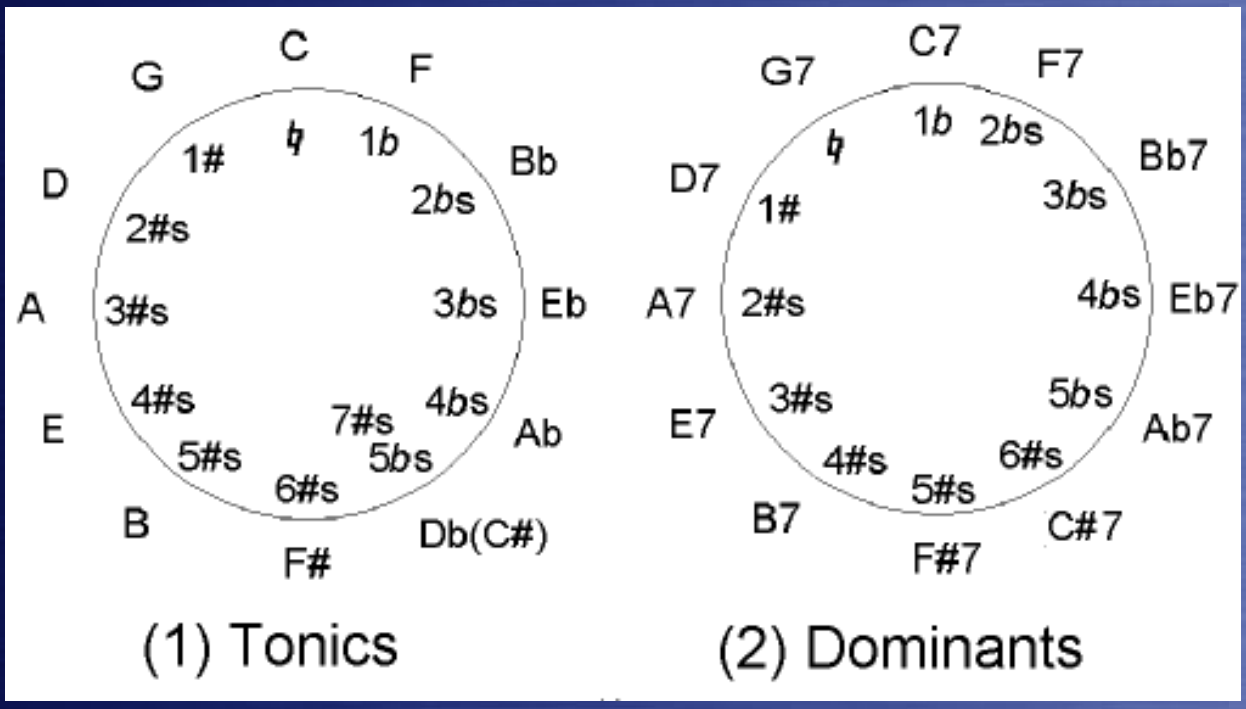
Pete Thomas, Music producer, composer, saxophone





## CYCLE OF FIFTHS

We saw in week 2 that diatonic root movement by a third is weak as the second chord has three out of four notes the same as the previous one. The strongest root movement is downwards by a fifth (or upwards by a fourth). If we continue moving in fifths we have a progression which goes through all twelve notes available in western music and arrives back where it started.




ex 3a: Cycle of fifths

A IIm7-V7-I progression has a root movement that follows the cycle of fifths (D - G - C). By substituting chord I with chord III in ex 2e we continue this cycle further (E - A - D - G - C). Carrying on this pattern an entire cycle can be made up of IIm7-V7s (ex 3b)

| | | | | | | |
|---|---|---|---|---|---|---|
| **Em7-A7** | **Dm7-G7** | **Cm7-F7** | **Bbm7-Eb7** | **Abm7-Db7** | **F#m7-B7** | **Em7-A7** |
| **(key: D)** | **(key: C)** | **(key: Bb)** | **(key: Ab)** | **(key: Gb)** | **(key: E)** | **(key: D)** |

ex 3b: Cycle of fifths (IIm7-V7-Is)

If each apparent IIm7-V7 is given a key centre, the progression contains 6 key centres each a whole tone lower than the previous one. There are therefore two

different IIm7-V7 cycles, a semitone apart. (ex. 3b and c).

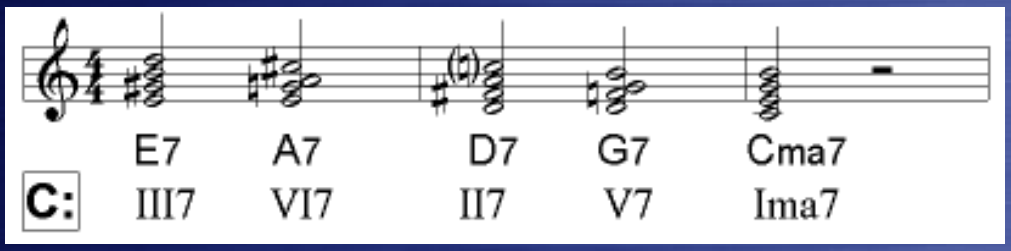
| | | | | | | |
|---|---|---|---|---|---|---|
| **Ebm7-Ab7** | **C#m7-F#7** | **Bm7-E7** | **Am7-D7** | **Gm7-C7** | **Fm7-Bb7** | **Ebm7-Ab7** |
| **(key: Db)** | **(key: B)** | **(key: A)** | **(key: G)** | **(key: F)** | **(key: Eb)** | **(key: Db)** |

ex 3c: Cycle of fifths (IIm7-V7-Is), using the 6 key centres not used in ex 3b.

If we continue the process of creating secondary dominants (see above, ex 2f) we arrive at the*cycle of fifths of dominant 7 chords* (ex 3a-2). This sequence is very common in jazz. A very typical example is the bridge of Gershwin's "I Got Rhythm" (chapter 10). There are countless jazz tunes based on the chord sequence of "I Got Rhythm": "Lester Leaps In", "Anthropology", "Cottontail" and many more.

Note in ex 3d the downward semitone resolution from 7th to 3rd and 3rd to 7th. Although the 3rd in a dominant 7th chord is a leading note and would normally resolve up a step, this chromatic descending line is often used as a feature of the cycle of fifths.

N.B. when analysing a tune and part of a cycle of fifths appears where dominant 7th chords are changing quickly it may be simpler to specify only the final key centre rather than a key centre for each chord, see ex 3d and chapter 10 - "I Got Rhythm" chord changes




ex 3d: Analysis of a partial cycle.

# JAZZ THEORY & IMPROVISATION

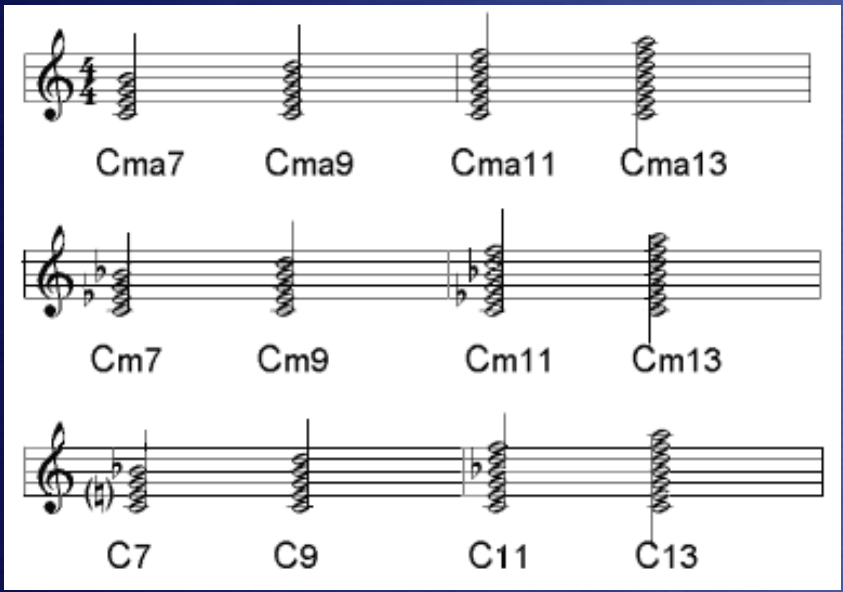
Pete Thomas, Music producer, composer, saxophone





## UPPER EXTENSIONS

As we saw in tutorial 1, four note chords are created by continuing the process of adding notes in intervals of a third to triads. If we extend this process we create 9ths, 11ths and 13ths:




ex 4a: Upper extensions

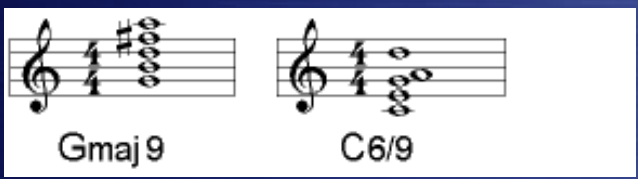
Dominant 7ths have a greater scope for extensions and alterations than major 7ths or minor 7ths. With the latter the resulting dissonance is often a disadvantage.

In practice there are various conventions when adding extensions to different chord types:

### Major 7 (and 6) chords

- 9ths can be added (but not usually with root in melody)
- 11ths are rare, a sus 4 is much more likely.
- #11th is possible (but not with 5th in melody).
- 13ths unlikely unless dissonance is required.

Remember: 6ths are used as an alternative to major 7ths, either for the distinctive colour of the 6th or to harmonise a melody note which is the root or 6th of the chord, in which case a major 7th in the chord may sound wrong.

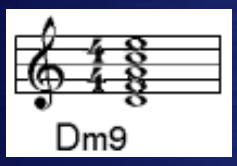



ex 4b: Major 9 chords

### Minor 7 and half diminished chords

9ths and 11ths can be used.

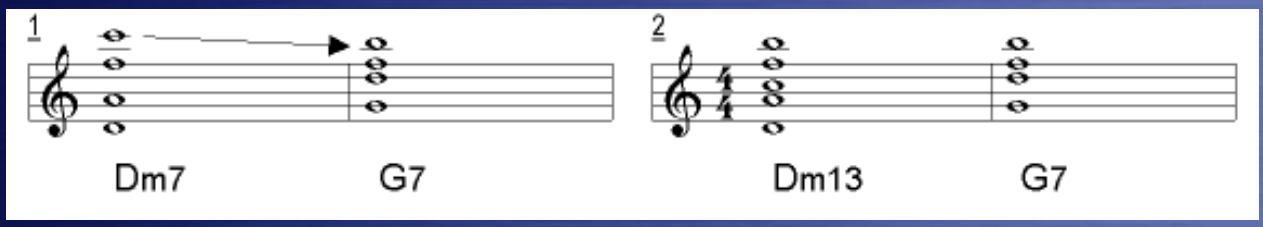
A minor 7 chord with a 9th (nearly always a major 9th) is called a minor 9 chord.




ex 4c: Minor 9 chord

A minor 7th chord with a minor (or flattened) 9th would be called a minor 7 b9. In practice this chord is rarely used.

13ths are not recommended with minor 7th chords as the resulting tritone with the 3rd weakens the impact of the tritone in the (usually) following V7 chord. It also destroys the "suspension" effect of the resolution of the 7th of the IIm7 to the 3rd of the V7 (ex 4d).




ex 4d-1: The 7th of the IIm7 would usually resolve to the 3rd of the V7. If the Dm7 already had a B in the chord this resolution would be anticipated and therefore weakened (ex 4d-2).

**Dominant 7th chords**

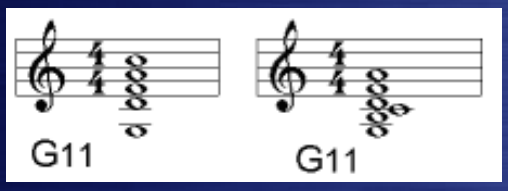
These frequently extend up to 13ths, with many chromatic alterations of extensions possible and desirable

Upper extensions in jazz are derived from suspensions in classical harmony:

- a 9th derives from a suspension onto a root.
- an 11th derives from a suspension onto a 3rd
- a 13th derives from a suspension onto a 5th

Therefore unless you need dissonant sounding harmony or "clusters", bear in mind the following when "voicing" chords with extensions:

- 9ths are rarely used next to a root.
- 11ths usually omit the 3rd but they can work well next to the 3rd in an inside harmony part (ex 4e)
- 13ths often omit the 5th, but *can* sometimes include them to create big chords (but with the extension usually in a *higher* octave, unlike 11ths with 3rds).

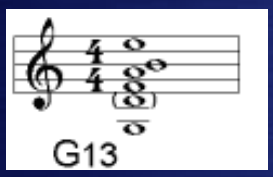



ex 4e: 11th chords

An 11th chord sometimes omits the 5th, must have a 7th and may include a 9th.

A 13th chord often omits the 5th, must have a 7th, may include a 9th to support the 13th but

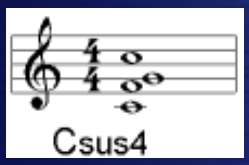
would not have an 11th unless stated. If it contains a 9th it is unnecessary to state this in the symbol unless it has been chromatically altered.




ex 4f: 13th chord

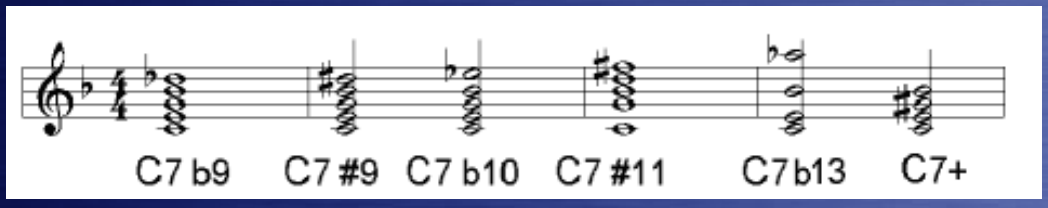
A 13th chord without a 7th would function as a tonic not a dominant chord and therefore most likely be regarded as a 6th or 6/9.

An 11th without a 7th would probably be regarded as a sus4.




ex 4g: Sus 4 chord

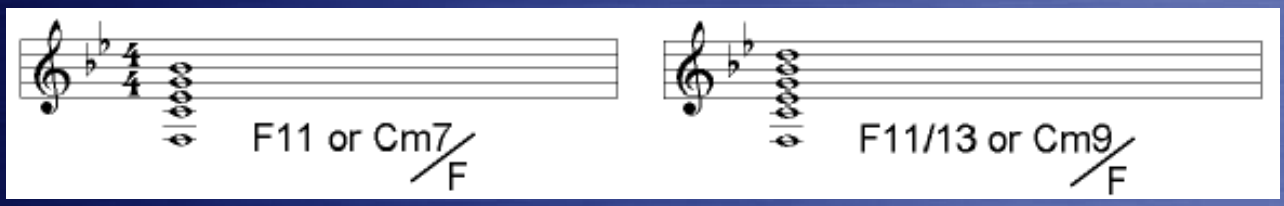
Typical chromatic alterations:




ex 4h: Note that the #9 and b10 have the same notes. The C7 augmented and C7 b13 have the same notes.

- Usually a b10 functions as a suspension of a b9 or 9.
- Usually a #9 would resolve upwards by a semitone.
- Usually a b13 resolves down by a semitone
- Usually an augmented 5th resolves upwards by a semitone

N.B. Extensions are often written as "slash chords", e.g. the (preceding) IIm7 chord but with the root of the V7 in the bass (ex 4i).




ex 4i: "Slash" chords. Note the difference between the "slash" between the chord and root note and the smaller diagonal sometimes used to separate two extensions as above with 11/13.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





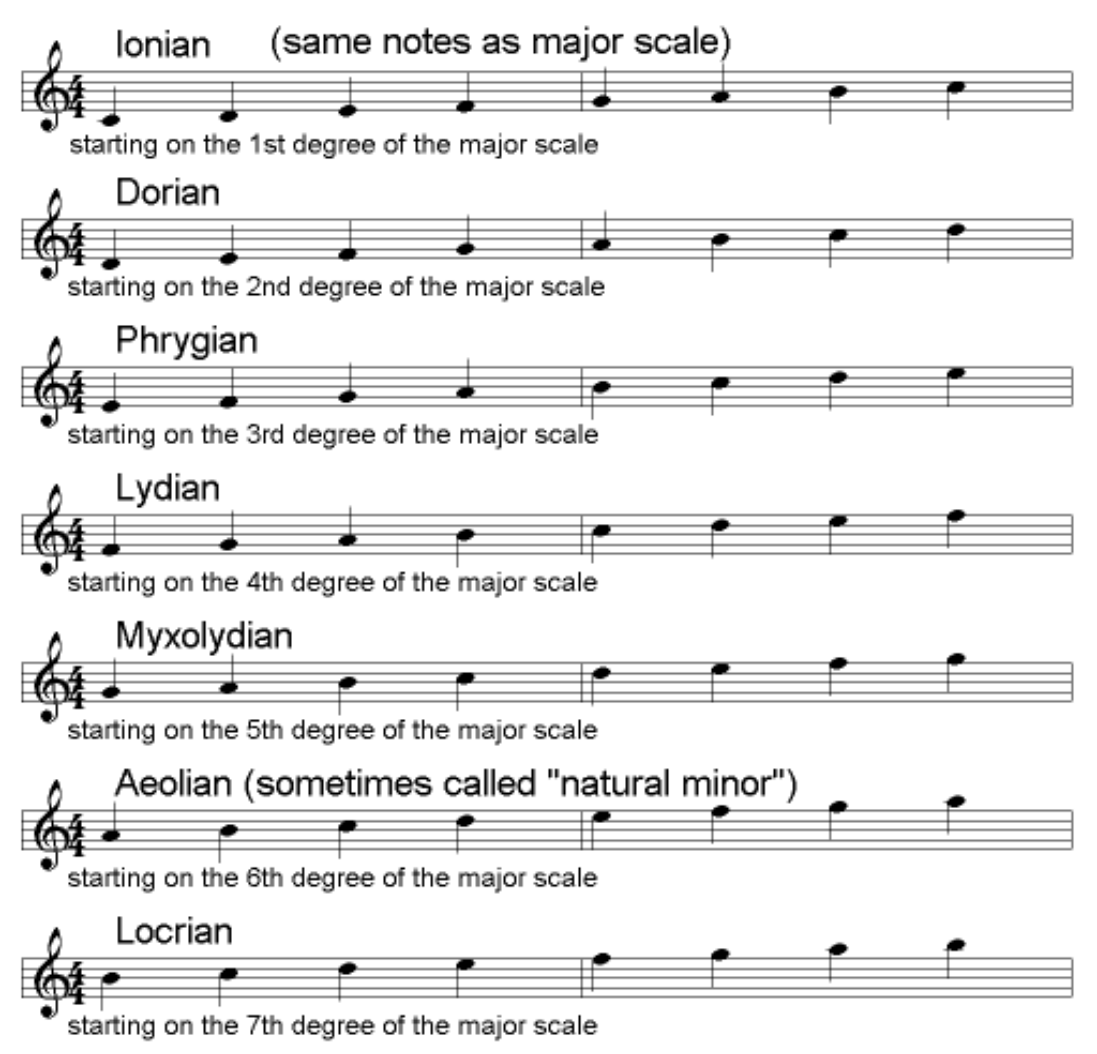
## MODES

When musicians talk about modes in jazz, they usually mean the seven modes based on the major scale. Modes are used in *Modal* Jazz, which is not covered in this course, but knowledge of modescan also sometimes be useful for learning to improvise over chord changes. It is important to realise that this approach should only be used as a preliminary to learning to improvise melodically.

We shall look at modes in two ways, *relative* and *parallel*

### 1) Relative

The simplest way to understand relative modes is to start with the major scale of C, but instead of beginning and ending on the note C, begin on each degree of the scale in turn to create a different mode:



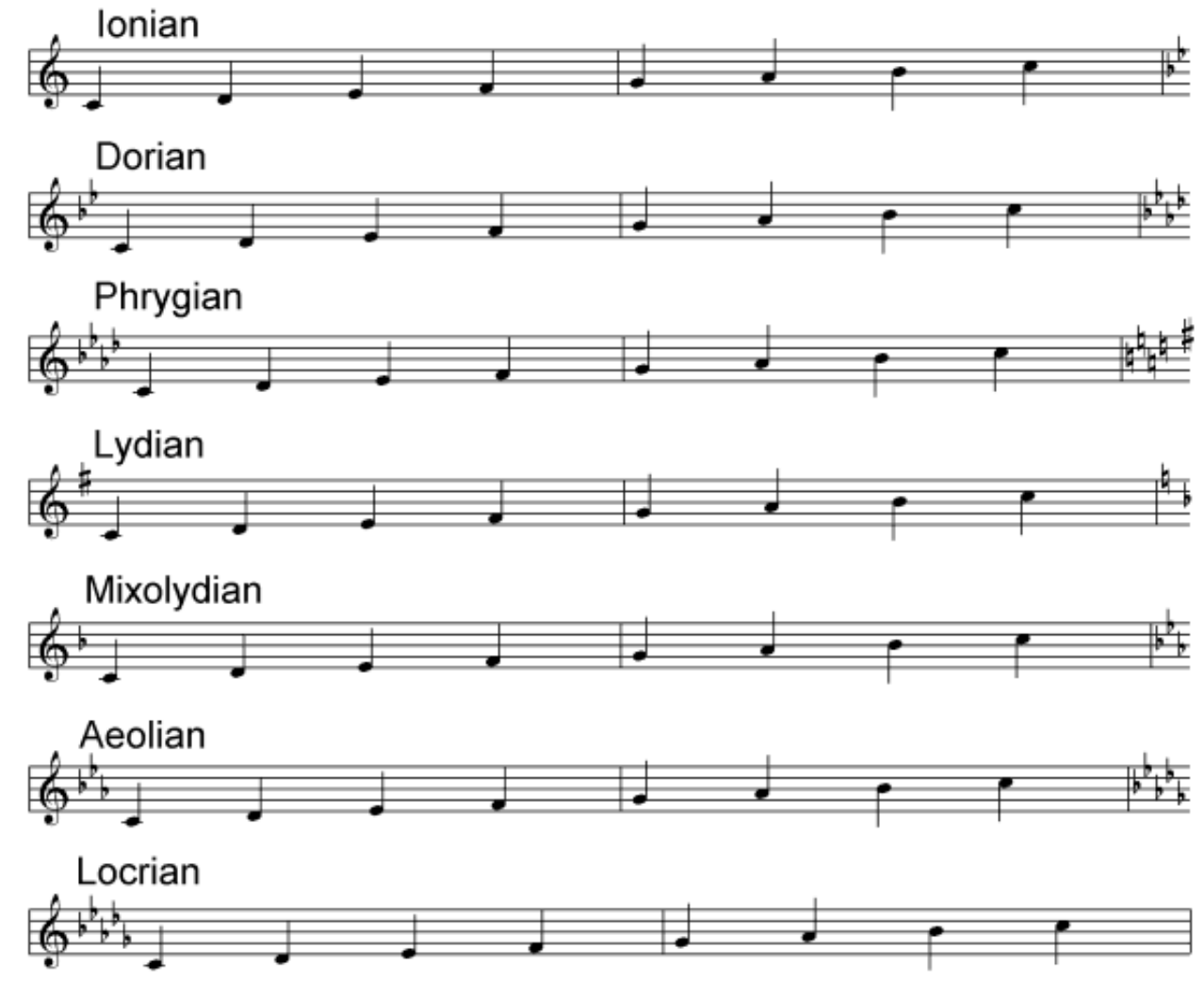

ex 5a: Relative modes.

### 2) Parallel

Although the above modes are based on the same notes as the C major scale, they each *function* as a different key in their own right and the starting note of the mode, not the *relative* major scale, is the root note. Eg the Dorian mode starting on D (using all the same notes as C major) is a D Dorian not a C Dorian.

Similarly the Dorian mode starting on C (which would use the same notes as Bb major) is a C Dorian, not a Bb Dorian.

If we take one key centre (ie one note) and base different modes on it using that note as the root we get parallel modes. In other words the Dorian mode starting on the note C is parallel to the C major (Ionian mode) and all the other modes starting on C.




ex 5b: Relative modes

It is important to learn both approaches. Intially it may be easier to think of the 7 modes relatively, e.g in relation to a major scale, but a more "musical" approach is to learn the actual sequence of intervals that make up each mode. A good exercise is to write out and learn all the modes in all keys as relative and parallel.

Learn the intervals between each step of the different modes:

( T=Tone, S=Semitone)

Ionian = TTSTTTS (in semitone intervals 2212221)

Dorian = TSTTTST (2122212)

etc.

and learn to sing them using (moveable doh) solfege

Ionian= DO RE MI FA SOL LA TI DO

Dorian= DO RE MAW FA SOL LA TAW DO

## MODES FOR IMPROVISATION

Improvisers today are often taught a system based entirely on modes and scales, but it is important to realise that although it is necessary for the learning improviser to learn them, scales should ultimately be used to construct musically meaningful melodic lines.

The commonest chord progression is the IIm7-V7-I. The most basic implied scale is the major scale of the I chord, but it may be also useful to think in terms of *modes* of the major scale in order to visualise the root progression. Take the sequence Dm - G7 - C maj7

There are two ways of approaching this sequence.

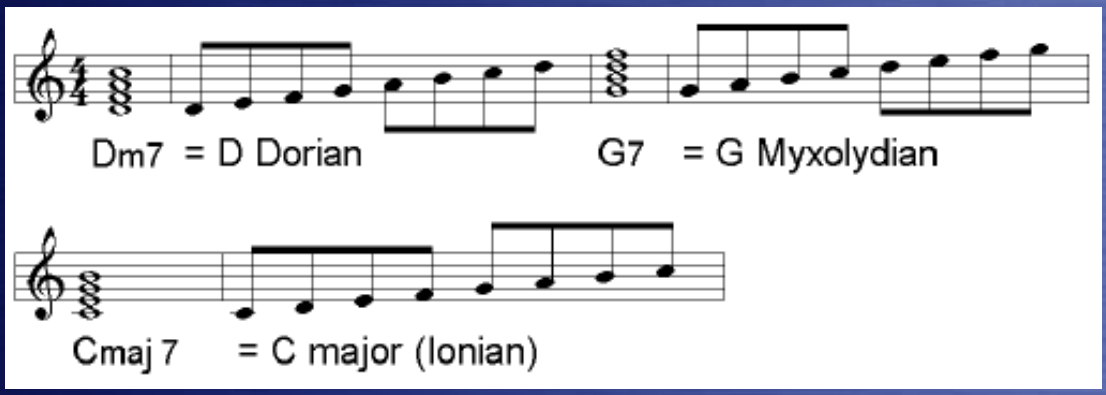
**1) The Key Centre Method:**

Analysis tells us that these chords are diatonic to the key of C, i.e. they all have a key centre of C (**C:** IIm7-V7-Ima7). A C major scale can be used to improvise over all three chords. This can be useful for the beginner, especially with fast moving chord changes.

**HOWEVER** it is often useful for chord notes to fall on strong beats. If you use the C major scale but start the scale on a chord note for each chord you will probably have more success than if you merely use a C major scale indiscriminately over the sequence. This is not easy until you have a thorough grasp of all notes in all chords, hence the alternative approach:

**2) The Modal method:**

Each chord can be associated with the mode based on its root note.




Ex 5c: modes implied by IIm7-V7-I

Note that chord notes fall *on* the beat. This method also has some drawbacks.

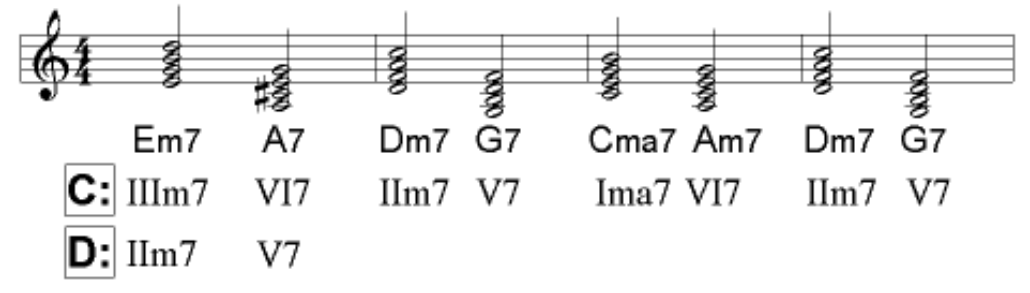
- You would not always want to start a scale on the root note of a chord.
- With descending scales the chord notes do not fall on the beat.
- With fast moving changes it is difficult to think of the modes in time.

In practice it is often useful to cut out one mode in this process: as most V7 chords in mainstream jazz have a preceding IIm7 it can be useful to use the Dorian mode to cover the V7 chord as well.

The *key centre* method is useful for fast moving chord changes, the *modal*method for slow moving changes when there is more time to think of the modes.

## Alternative key centres

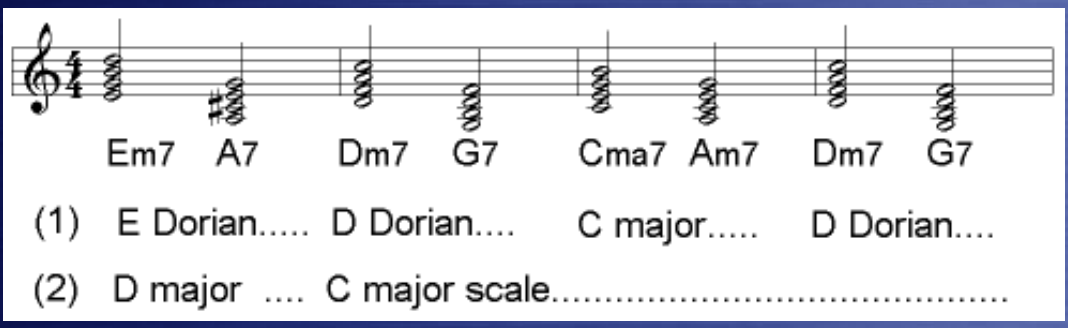
In the progression we looked at in ex 2e we found an alternative way of analysing the progression, with a possible key centre of D. If we take a similar progression we can use either the modal or key centre method to choose which scales on which to base an improvisation.




ex 5d: RN analysis showing alternative key centre.

With the simplified modal method (ignoring Mixolydian) we would think: E Dorian, D Dorian, C major, D Dorian (ex 5e-1)

With the key centre method we would use the alternative key centre and only need to think: D major, C major. (ex 5e-2)

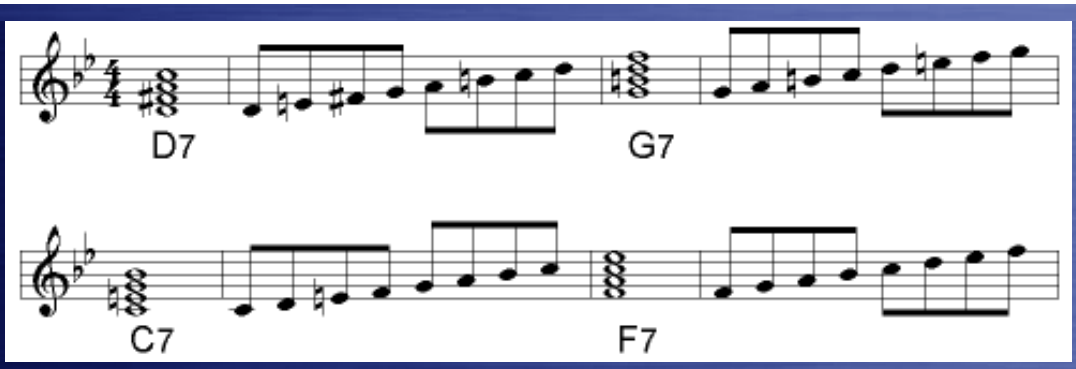



ex 5e: Modal method and key centre method.

The modal method becomes easier if you treat all minor chords (in a major key) as IIm7 (Dorian). This makes some sense because VIm7 chords are often changed to become secondary dominants (as above -ex 5d), so **in many cases** minor 7 chords will either be an actual IIm7, or a IIm7 in the new key centre implied by the secondary dominant as with the Em7 above).

Both of these methods can be useful for beginners, as they can make the process of playing over chord changes less daunting, but it is very important to realise that this is only a small step on the way to understanding harmony. In the above example we are thinking of the Em7-A7 as being in D major (key centre method) or E Dorian. The problem is that in this case, although the A7 does not resolve to a tonic, it does not necessarily imply D major, in fact D minor often sounds better for jazz. You will find that a D harmonic minor scale sounds more interesting. You could think in terms of modes of minor scales, however it is far more important to learn the notes of the chords and begin to think about the scale using those notes on the strong beats. This leads to a more musical and melodic approach than the more technical process of thinking in modes for chord changes.

Whenever a cycle of dominant 7ths appears without a preceding IIm7 chord, (e.g. middle 8 of "I Got Rhythm" sequences), it is either necessary to think of Mixolydian modes (ex 5g) or major scales with a flattened 7th (same thing but easier to learn ):




ex 5g: partial cycle of fifths (Mixolydian modes).

# Jazz Theory - Minor harmony

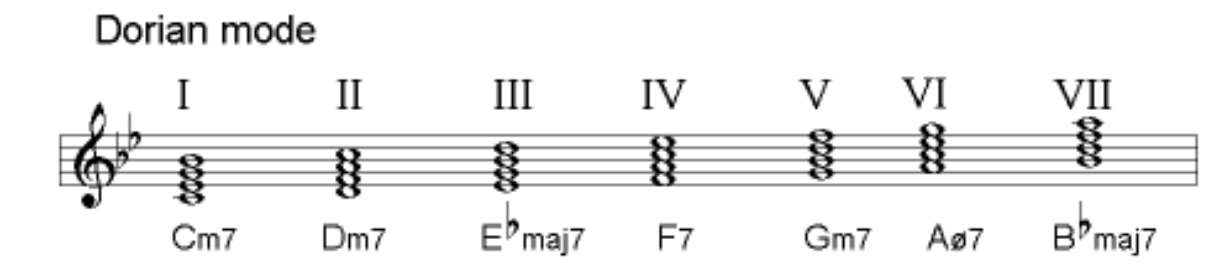
Pete Thomas, Music producer, composer, saxophone





## MINOR HARMONY

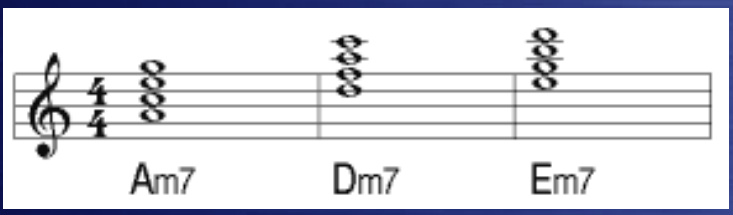
It is possible to build diatonic chords on each degree of any of the modes, as with the major scale:




ex 6a: Dorian mode diatonic harmony

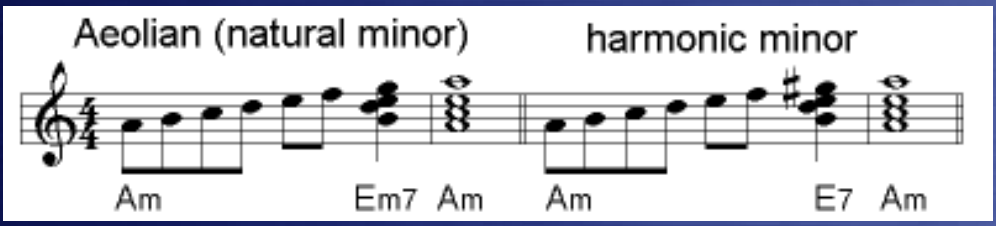
You will remember from Modes that the Dorian, Phrygian and Aeolian modes are minor, i.e. the interval between the root and 3rd degree is a minor third, hence the chord based on the 1st degree of the scale is a minor chord.

The Aeolian mode (sometimes called the "natural minor") can be equated with the harmonic minor scale. Note that in this mode the chords on I, IV and V are all minor. (Ex: 6c)




ex 6c: Aeolian

The difference between the Aeolian and harmonic minor is that the 7th degree of the harmonic minor is raised a semitone to provide a leading note, i.e. a semitone leading from the 7th to 8th degree of the scale, which supplies a satisfying perfect cadence:



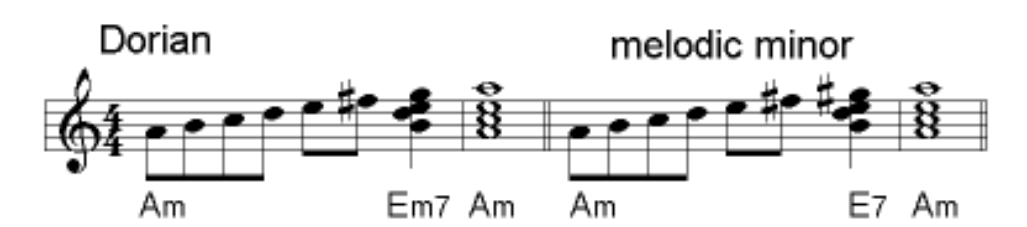

ex 6d: Aeolian and harmonic minor cadences showing the raised leading note.

It is very important to play this on a keyboard to listen for the differences between the "modal" and leading note cadence

We can see in ex 6d how the raised 7th in the harmonic minor allows for a "conventional" V-I cadence, where the V chord is a dominant 7th rather than a minor 7th.

If the harmonic minor scale is used melodically the augmented second interval between the 6th and 7th creates an exotic "middle eastern" flavour.

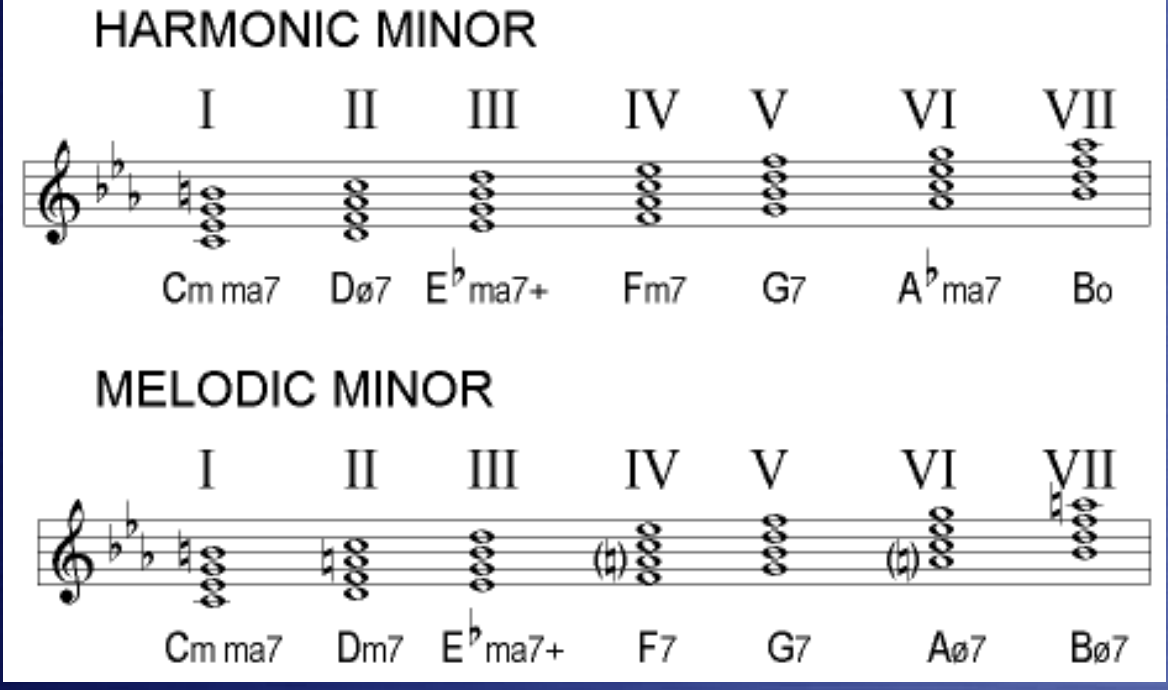
This is not the case with the melodic minor as it also has a raised 6th which makes it a closer relation to the Dorian mode. (ex 6e). In jazz this form of the melodic minor is used both ascending and descending.




ex 6e: Dorian and melodic minor cadences.

To understand "conventional" (non modal) minor harmony we need to build chords on the harmonic and/or melodic minor scales as we did with the major scale in ex 1b.

Note that there are two possibilities for the root of the VI chord, depending on whether the harmonic or melodic scale is used.



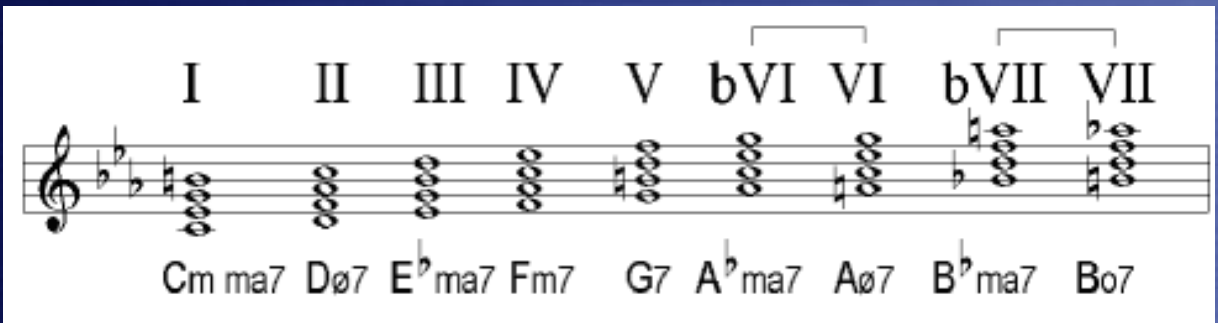

Ex 6f: Variations in minor harmony

Apart from the fact that this is rather complex, we have an unsatisfactory

situation here. The alterations to the 6th and 7th degrees of the scales were made for ***melodic*** not ***harmonic*** considerations. Using these scales to create chords is unsatisfactory in some cases, so in practice alternatives are "borrowed" from modal minor harmony, usually the Dorian or Aeolian:

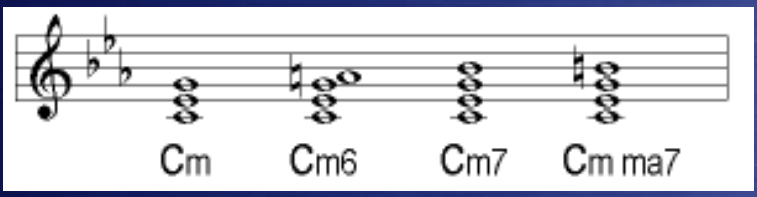
1. Chord I. The major 7th is fine in some cases but the leading note is harmonically unnecessary and can sound slightly dissonant or too sophisticated for certain styles. It also clashes unpleasantly if there is a tonic in the melody. Other chords that can be used for chord I in a minor key are Im (triad), Im6 (from Dorian or melodic minor) or Im7 (from Dorian) - see ex 6h.
2. Chord II. The harmonic minor version (half diminished) is usually more satisfactory.
3. Chord III. The leading note (B natural) is ungainly and unnecessary as the chord is rarely if ever used as a cadential chord. A Bb (Dorian or Aeolian) is usually better.
4. Chord IV. Either chord is suitable. The minor 7th gives more of a "minor" flavour, but the "dominant" 7th on the IV is common, especially in latin jazz or jazz rock sequences with 2 chords repeated, e.g. Cmin7/F7/.
5. Chord V. Raised 7th is good as it allows for the conventional V7-I cadence.
6. Chord VI. Either chord can be used, depending on the preceding or following chords. The harmonic minor chord sounds more modal.
7. Chord VII. Could be either but the harmonic minor version (diminished) is more common. The VII chord is sometimes used as an alternative to a V chord and the diminished 7th makes a more satisfactory cadence in a minor key.

Although this appears more complex than major harmony it allows for a great deal of variety. To simplify we could use a combination of chords based on harmonic minor harmony with some "borrowed" modal chords.




ex 6g: Minor harmony with some"borrowed" modal chords.

As mentioned above there are several possibilties for tonic chords in a minor key (ex 6h).




ex 6h: Tonic minor chords. (Note that in a m6 chord the added 6th is always a *major*6th). In jazz earlier than the 60s a minor 7 is rarely used as a tonic minor and should be not be used (to avoid confusion with IIm7).

Melodic and stylistic considerations need to be taken into account when choosing which type of tonic minor chord to use. (Eg. m maj7 and m6 may sound too sophisticated or too old fashioned in some styles). **When using RN analysis a minor triad, m6 or m maj7often indicate a minor tonic,** - useful for locating new key centres. (m6 or minor triad could be chord IV, of a minor key, but if so this will be obvious by the presence of a minor tonic nearby)

It is important to show which root the VI and VII chords are based on when doing an RN analysis in a minor key:

| ***Chord*** | ***RN*** |
|---|---|
| VI chord whose root is a minor sixth above the tonic | bVI |
| VI chord whose root is a major sixth above the tonic | VI |
| VII chord whose root is a minor seventh above the tonic | bVII |
| VII chord whose root is a major seventh above the tonic | VII |

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## ALTERED CHORDS

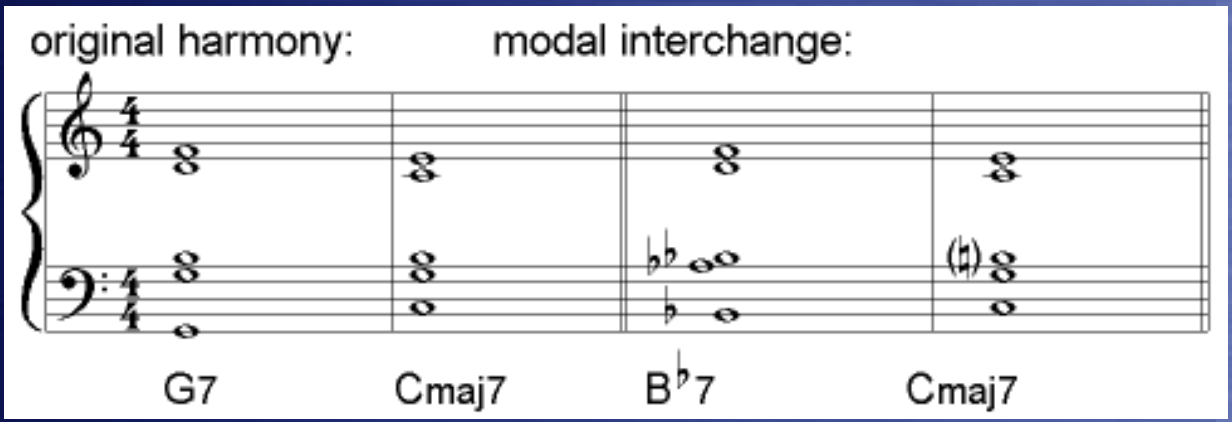
Chromatically altered chords are chords that are not diatonic, i.e. they contain notes that are not in the key signature or *key centre*. We have already discussed one type of chromatic chord - secondary dominants - which are often used in jazz to create chromatic interest. We have also seen how upper extensions can be altered (ex 4h). Jazz musicians often reharmonise standard tunes not only by altering chords but by using substitute chords. When an established melody is being played the choice of these new chords is restricted by the melody note, however during improvised solos there is far more freedom.

### Modal Interchange

As mentioned above (see "Minor Harmony") chords can be borrowed from other modes. This is sometimes called modal interchange and is common between a major key and its*parallel* minor. (not the *relative* minor which has the same key signature, but the minor key which has the same tonic). Chords can be borrowed from the harmonic minor, melodic minor or any minor mode. Here are some of the more common examples:

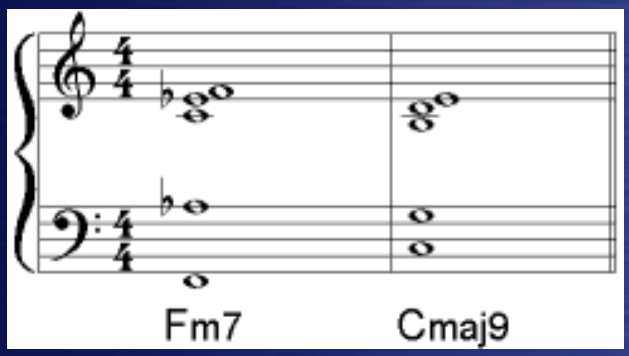
**1) Substitutions for V7.**

bVII7 can be substituted for V7. This is borrowed from the Aeolian mode of C (based on major scale of Eb - Cm7, Dø7, Ebma7, Fm7, Gm7, Abma7, ***Bb7***, Cm7), but used in a major key.



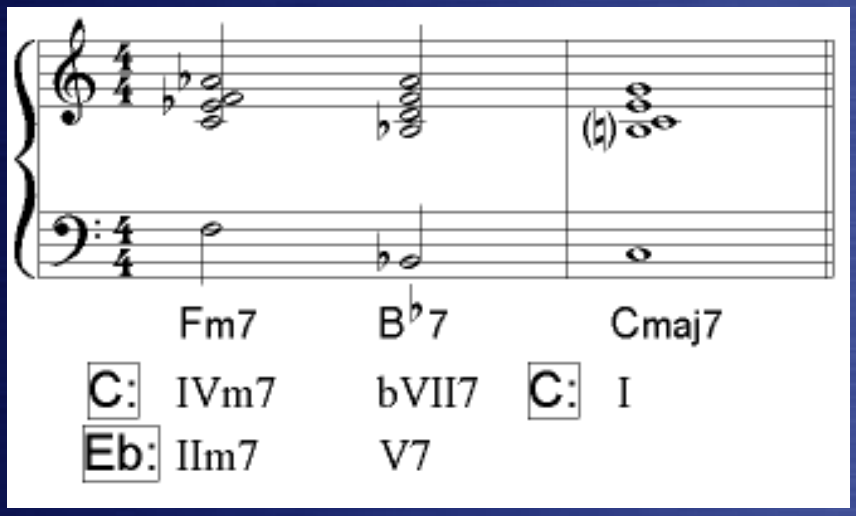

ex 7a: Modal interchange using bVII (chord V of Eb hence chord VII of the Aeolian mode).

IVm7 (or IVm6) can also be substituted for V7. Also borrowed from the Aeolian mode (Cm7, Dø7, Ebma7, ***Fm7***, Gm7, Abma7, Bb7, Cm7)




ex 7b: IVm7 from Aeolian mode

Combine these two and we have a II-V progression borrowed from the Aeolian mode



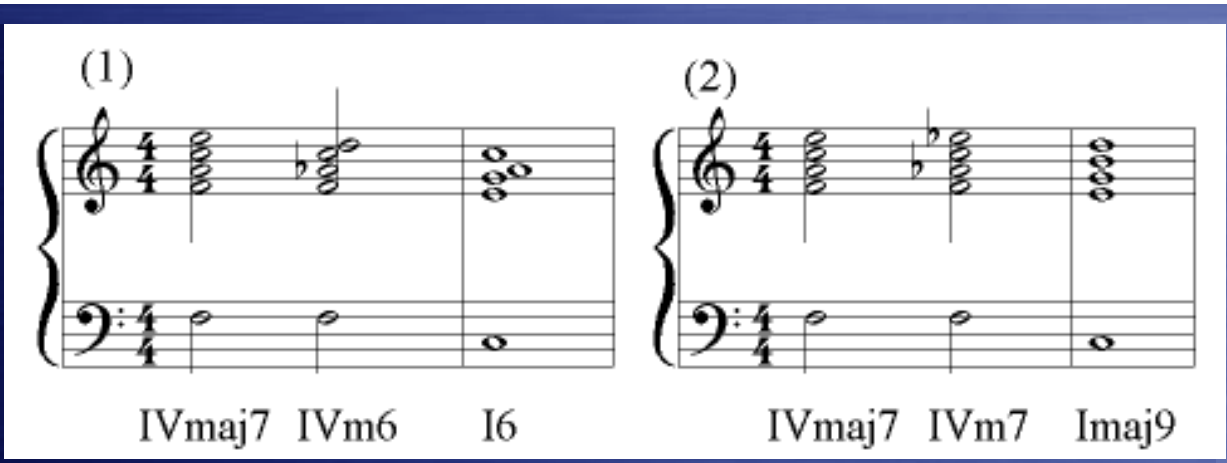

ex 7c: IVm7 - bVII7 borrowed from Aeolian mode. Note the alternative RN Analysis

From the above we can see that a IIm7-V7 in an apparently unrelated key (i.e. IIm7-V7 in Eb can be used in the dominant area of the key of C (see "Misty" bar 4).

bVII maj7 (from the Dorian) can also be used in modal interchange but does not lend itself to the IIm7-V7 progression in ex 7c, and is not such a good substitute where a perfect cadence is implied.

**2) Substitutes for IVmaj7**

By borrowing from the Aeolian mode again, IV maj7 (or 6) can be altered to IV m maj7 (or 6) or IV m7. In popular music of the 30's, 40's and 50's IVm was often used following a IV and preceding a I, adding passing notes to a plagal (IV-I) cadence.




ex 7d: Modal interchange supplying passing notes on Ivm - (1) D and Ab (2) Eb and Ab.

# JAZZ THEORY & IMPROVISATION

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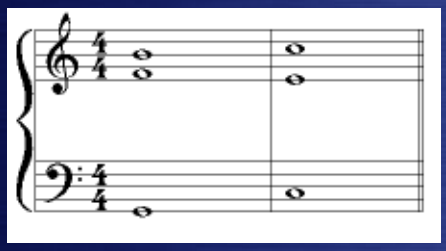
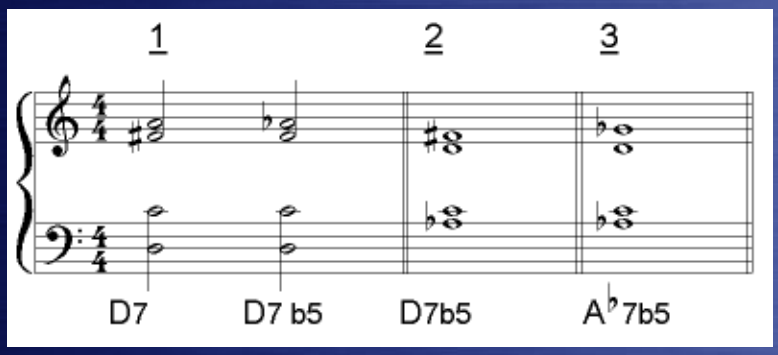
## FLAT 5 SUBSTITUTES (tritone substitutes)

A dominant 7th chord is characterised by the tension set up in the tritone interval between the 3rd and the 7th, which has a tendency to resolve to the root and 3rd of the tonic (ex 7g).



ex 7g: Tritone resolution

A b5 substitute is derived by chromatically altering the fifth (Ex 7h-1). If this chord is used in its second inversion the flattened fifth becomes the bass note (Ex 7h-2), the interval between the bass note and the 3rd is an augmented 6th (hence the classical term "augmented 6th chord"). However in jazz the notes are enharmonically changed to create another V7 chord in root position (Ex 7h-3).

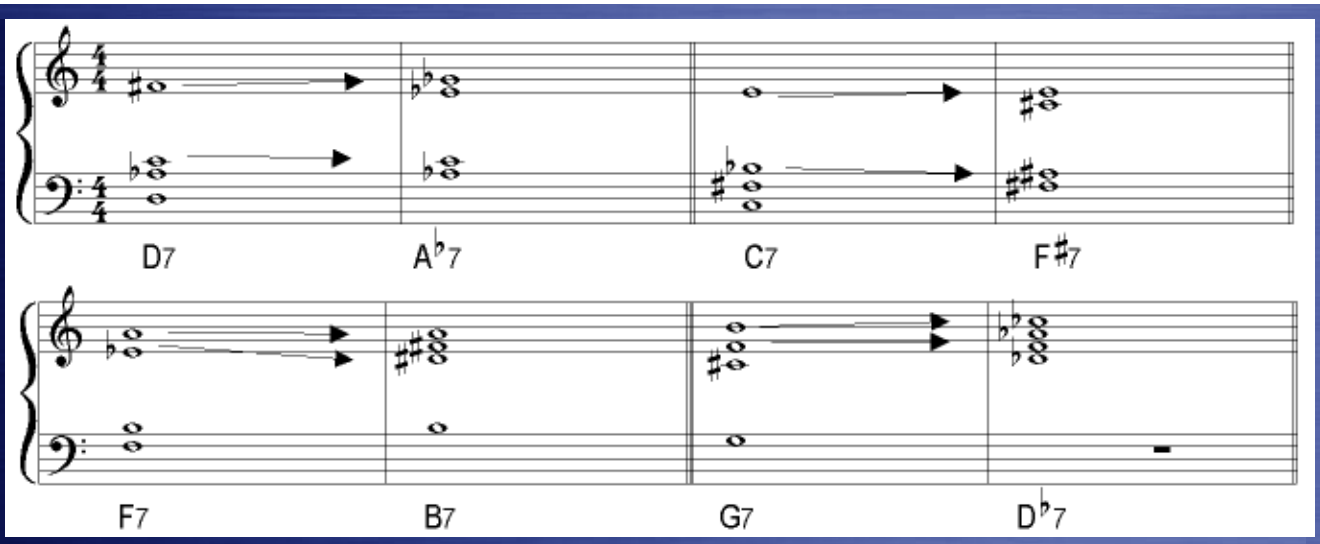



ex 7h: Derivation of b5 substitute.

In jazz this has become known as the b5 (or tritone) substitute and in practical use the dominant chord whose root is a b5 away from a dominant can be used as a substitute,***whether or not its 5th is flattened.*** The important consideration is not its classical derivation but the fact that it shares the all important tritone (C/F# in the case of D7/Ab7) with its substitute. Note that in this case it is allowable to change enharmonic spellings.

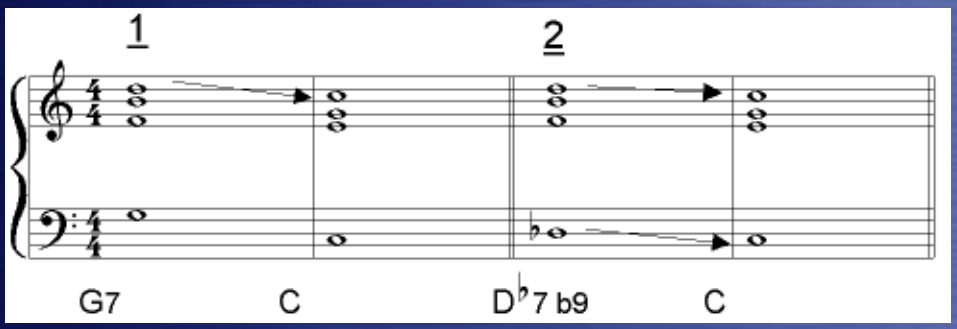
Because of the tritone the two most important notes of any dominant chord are the 3rd and 7th, (Apart from the root which obviously defines the root of the chord).

Note that the same tritone is present in every pair of V7 chords whose roots are a b5th apart. (ex 7i)



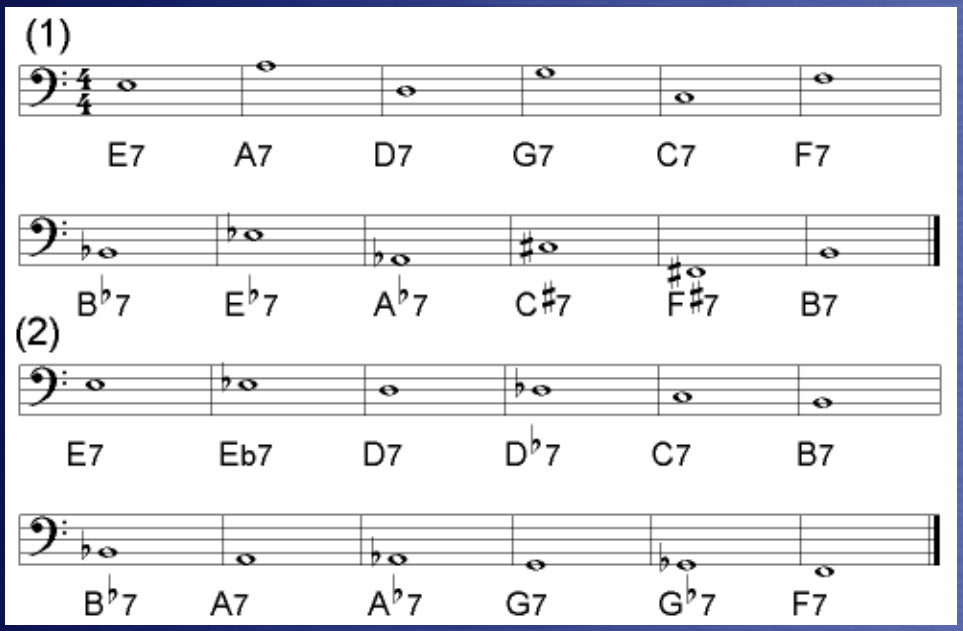

ex 7i: Matching tritones in b5 substitutes.

One should be aware that a b5 substitute may be unsatisfactory if the melody is on the 5th or 9th of a V7 chord due to the altered tendency of the newly created chord. For example the 5th of a dominant 7 chord may have a tendency to resolve down a whole tone to the tonic (ex 7j-1, but the natural tendency of a b9 (where the melody will be if a b5 substitute is created - ex 7j-2) is to resolve down or sometimes up by a semitone.




ex 7j: Incorrect use of tritone substitution.

In a cycle of fifths (ex 7k-1), if every alternate V7 is substituted by a b5 substitute the result is a chromatic cycle (ex 7k-2)




ex 7k: Chromatic root movement created by tritone substitution on alternate chords of a cycle of fifths.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone



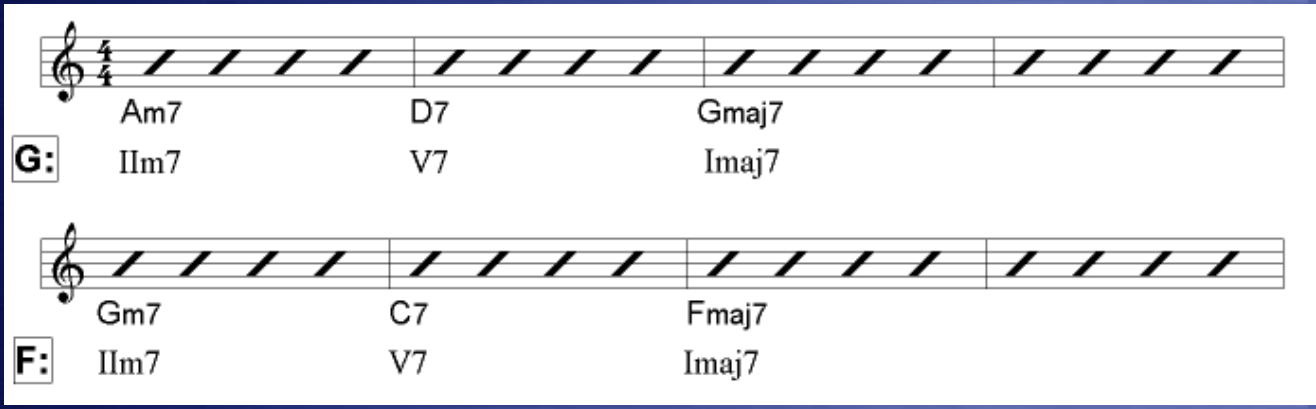


## ANALYSIS OF HARMONY ("Roman Numeral Analysis")

Harmonic analysis of tunes is extremely important to the understanding of jazz theory and hence to the ability to improvise. Roman numerals are used to denote the relationship between the chord and the key, hereafter referred to as "RN analysis". The degree of the scale upon which each chord is built (root note of chord) is shown as a roman numeral (ex 1b).

Jazz tunes often modulate temporarily and it is necessary to show these modulations as "key centres". Each key centre must be clearly shown before the sequence of chords. (ex 1e: key centres of **G** and **F**). In most cases a new key centre is made obvious by a V7-I cadence. (in this case the Gm7/C7-F - chords which are diatonic to the key of F, not G)).

Chords are often chromatically altered in jazz so when using the roman numeral system to*analyse* a chord sequence it is necessary to add the type and extension of the chord (e.g. m7, maj7, etc.).




ex 1e: RN Analysis of the 1st 8 bars of "Laura" (Mercer/Raskin)

**Tips for RN analysis:**

- Differentiate clearly between major and minor keys. (e.g. "C" = C major, Cm = C minor. Do not use just lower case for minor keys, "c" is easily confused with "C")
- Always include type of chord and extension.
- Make a note of chords that are not diatonic to the starting key to identify new key centres.
- Look for a tonic chord (maj7 or maj6 in a major key, min maj7, min6 or minor triad in a minor key) preceded by IIm7-V7 to define a key centre.
- Minor 7 chords are very often II chords in a major key.
- Minor 7 b5 (ø7) chords are often II chords in a minor key.
- Mark the key centre clearly - circle it or use a different colour.
- Bracket IIm7 - V7 together (to highlight the II-V relationship) and draw an arrow from the V chord to the target chord (*if it resolves down a 5$^{th}$*) to denote resolution.

## PRACTICAL ANALYSIS

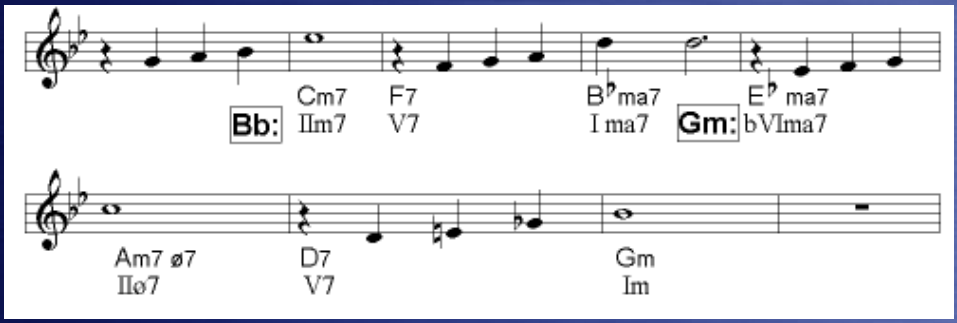
In addition to IIm7-V7-Is created through secondary dominants, many tunes are made up of IIm7-V7-Is with different key centres that may appear to be entirely random or may be related logically:

- Misty: key centres in bridge move down a semitone then a major 3rd
- Autumn Leaves: key centres Bb - Gm (major to relative minor)
- Giant Steps: (tonal centres move up in major 3rds)

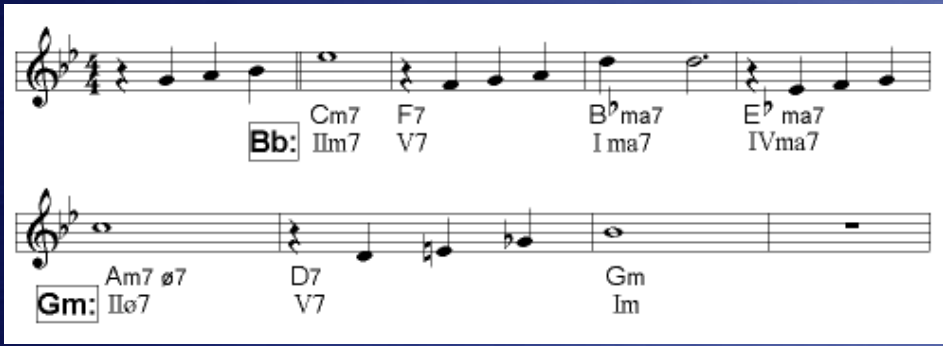
**Overlapping key centres**

As well as the "alternative" key centres discussed earlier (see chapter 2 and ex 5d), it is possible for key centres to "overlap". This happens where one or more consecutive chords could be in one of two key centres. In bar 5 of Autumn Leaves the Eb ma7 could either be chord IV of Bb major or chord (b)VI of the next key centre, G

minor (based on the harmonic minor or the Aeolian mode). There are two possible ways to analyse the first eight bars (ex 8a and 8b)




ex 8a: The Gm key centre is shown at bar five.




ex 8b: The Gm key centre is shown on bar six.

The Ebmaj7 is diatonic to both key centres. Although the analysis in ex 8a could be seen as correct, there are various reasons why 8b is better:

- We have not yet established the G minor via a cadence (eg. D7 Gm), so our ears tell us that the Eb is still in the key centre of Bb.
- Chord II(ø7) is an integral part of a IIm7- V7- I cadence.
- The key centres make up two four bar phrases if the G minor key centre starts at bar 5.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone

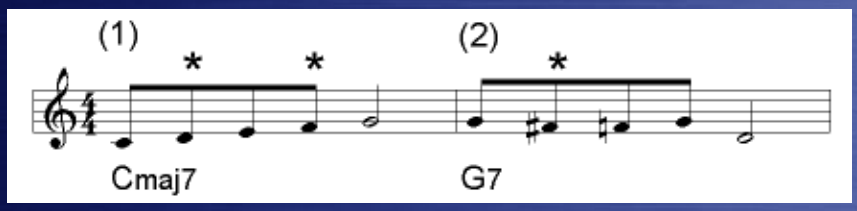




## PASSING CHORDS, TURNAROUNDS

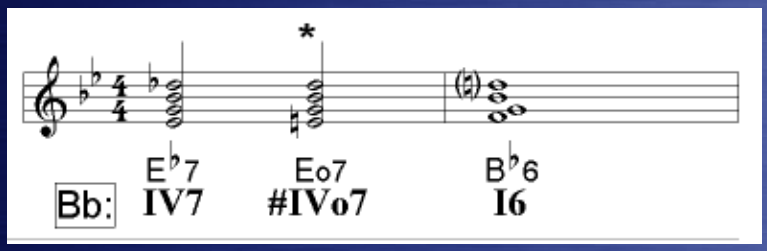
We have already seen how a IV chord can be altered to IVminor to accommodate a descending passing note (ex 7d)

Passing notes are *non chord* notes that lead from one *chord* note to another. They can be diatonic (ex 10a-1) or chromatic (Ex 10a-2); they can be in a melody or in a harmony part.




ex 10a: Passing notes. Note the bebop scale on the G7.

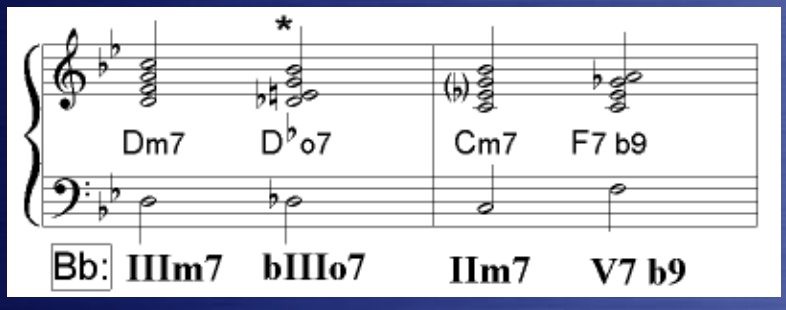
When one or more passing notes is used in a chord, a *passing chord* is created, which is very often a diminished chord. Ex 10b is typical of the chord progression that would appear in bars 6-7 of a jazz tune based on "I Got Rhythm" (see below "I Got Rhythm" ). By altering the root note of the Eb7 to create a chromatic passing note, we get a passing E diminished chord (#IVo7). (N.B. The IV chord in the 6th bar of a 12 bar blues is often altered in this way - see "Now's the Time").




ex 10b: Passing chord: #IVo7

This chord has a tendency to resolve to a second inversion of the tonic (continuing the chromatic movement in the bass), but in practice the tonic is often in root position.

Passing diminished chords are also common between chords III and II, (ex 10c)

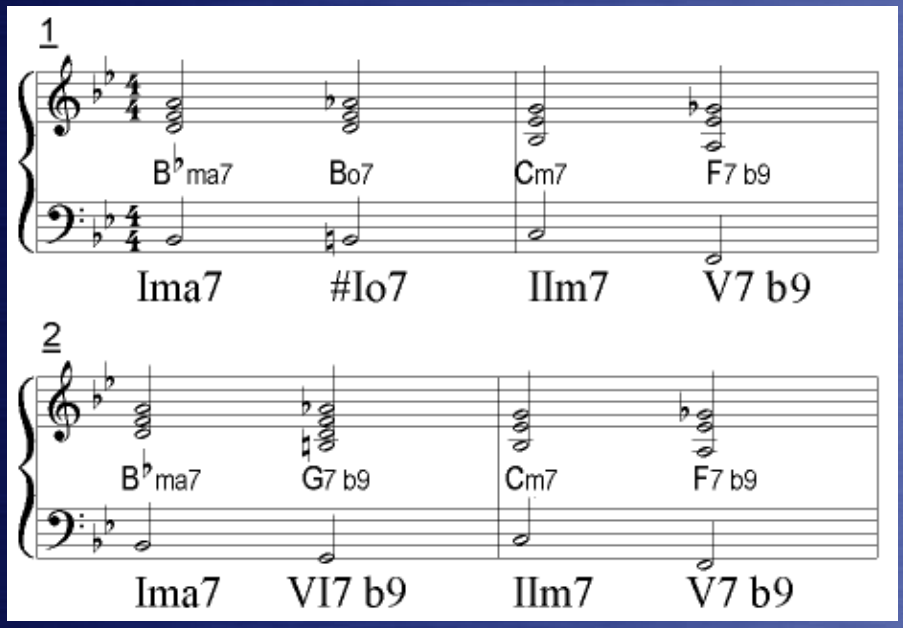



ex 10c: Passing chord: bIIIo7

In example 10c a bIIIo7 is created as a passing chord between IIIm7 and IIm7. The E in the Db o7 passes between F and Eb, the Db passes between D and C.

N.B. As the IIIm7 can be viewed as a substitute for I maj7 (see chapter 2), the passing bIII o7 would also be viable between I maj7 (or I 6) and IIm7, i.e. Bbmaj7 - Db o7 - Cm7 - F7

Another very common passing diminished is a #I used between chords I and II. The #I diminished could be seen either as a passing chord (ex 10d-1), or a derivation of the altered (b9) secondary dominant (ex 10d-2)

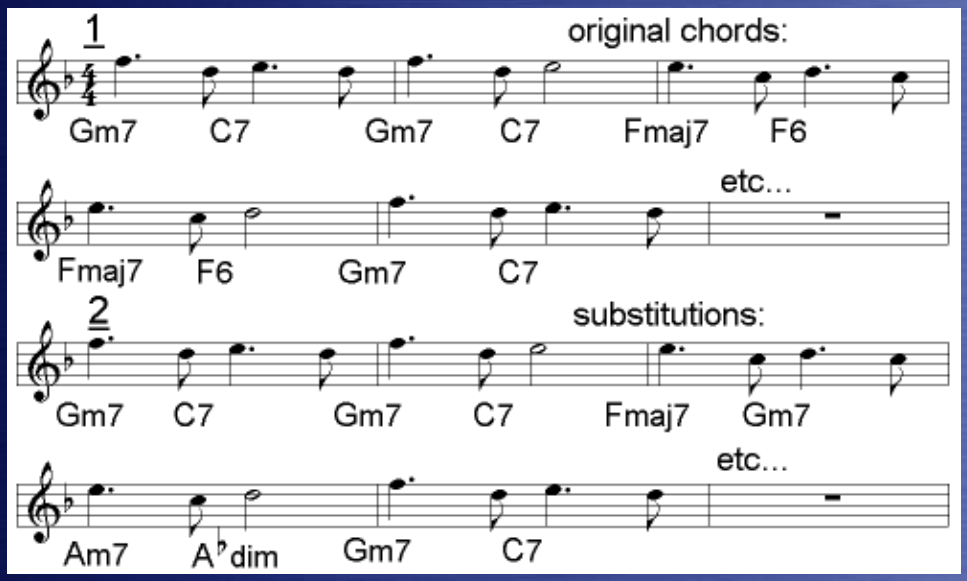



ex 10d: Passing chord: #Io7

Note the chromatic contrary motion: Bb - B - C in the bass and A - Ab - G in the 2nd part.

If a G is added to the B o7 chord in the bass a G7 b9 chord is created (ex 10d-2).

Either ascending or descending, diatonic or chromatic progressions are often used to add movement to an otherwise static tonic area (Ex 10e)



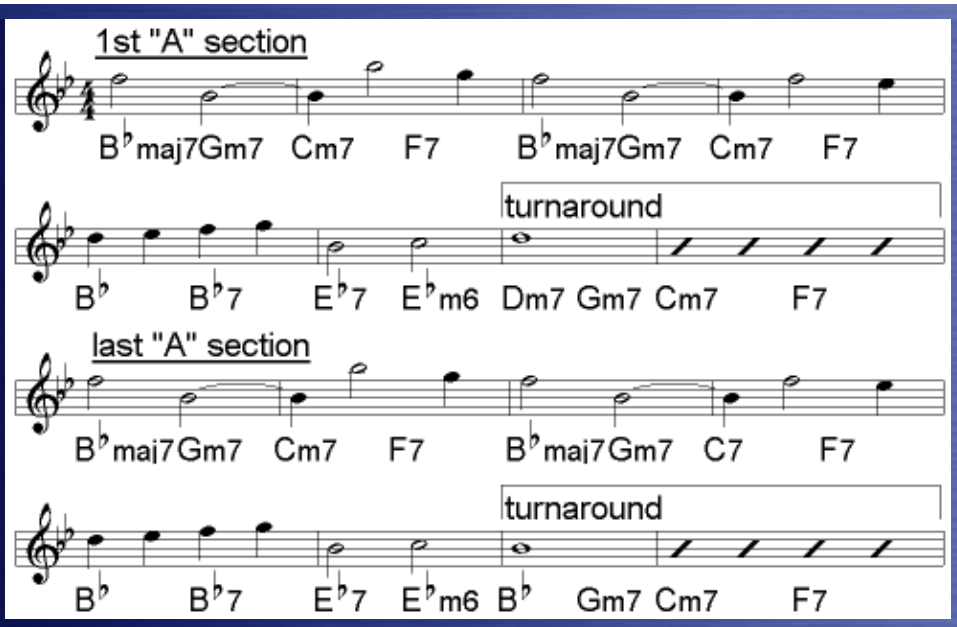

ex 10e: "Tea For Two" Caesar/Yeomans

## Turnarounds

Most 32 bar AABA tunes have a "static" melodic area at the last two bars (between the end of the melody and the start of a repeat of the melody).

These areas are referred to as *turnarounds*. A chord progression is used which covers these two bars, starting on a tonic and ending on a dominant (in effect adding another cadence). In its simplest form this would be I - V7 (common in blues) but is usually more sophisticated in jazz and is usually a progression based on I-VI-II-V.

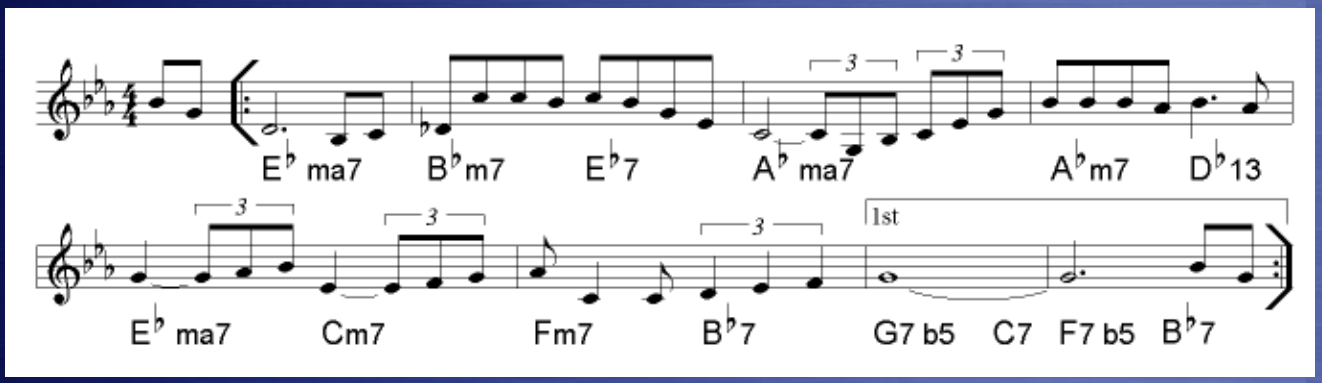
There is frequently a turnaround at the end of the first A section, where the melody sometimes cadences to the the 3rd or 5th note of the scale. In this case a III chord is often substituted for the tonic, see ex 10f "Flintstones".




ex 10f: Flintstones. Note the Dm7 substituted for Bb in the first turnaround.

At the final turnaround the melody usually ends on a tonic so the IIIm7 does not work very well (the resulting melody note would be a b6 on a minor 7 which does not sound good). A major 7th in a tonic chord would also clash with the melody, so a 6th is often added to chord I to create a four note chord (see chapter 1).

Turnarounds are a very good place to use substitute chords as there is less likely to be a melody to restrict alternative harmony. In the first turnaround of the above example either of the sequences in 10c or 10d could be used. Minor 7 chords can be changed to secondary dominants to create a cycle of dominant fifths. (See turnaround bar 7 of "Misty")




ex 10g: Misty

Tunes that do not start on the tonic require a turnaround that introduces the first chord, eg "All The Things You Are

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## BLUES

### The 12 bar blues sequence

Blues breaks the rules of conventional "jazz" harmony and improvisation.

The distinctive sound of the blues is often created by the flattening of various notes (mainly the 3rd, 5th and 7th). The harmony often becomes ambiguous as the flattened 3rd will often be used in a melody at the same time as the major 3rd in the accompanying harmony. (Not the other way round: in a minor blues all 3rds are flattened). There is a "blues scale" which contains these notes, however in a major key most players combine the flattened notes with the natural notes. (See below "blues scales" ). When using the blues scale or phrases derived from it the same (tonic) scale is used over all three areas, i.e. in the key of C you use a C blues scale and do not usually change to an F blues scale at bar IV. The resulting dissonances are effective depending on the players taste and feel for the blues

When looking at the more basic 12 bar blues chord sequences (i.e. those in blues music rather than some of the more sophisticated jazz/blues) it does not usually make sense to use the RN analysis in the same way that we have been used to where key centres are defined by dominant chords. The flattened 7th is often used on tonic and subdominant chords purely as colour and need not imply a V7-I cadence or a secondary dominant.

**Example:**

In the key of C the C7 chord in bar 4 of a typical 12 bar blues (see below Ex: 9a) appears to be a secondary dominant chord (V7 of IV), but it is more idiomatic to think of the 5th and 6th bars as the subdominant rather than a new key centre. The IV chord of a blues is invariably a IV7, but the F7 at bar 6 is chord IV7 of C, not chord V7 of Bb. Although theoretically you could think in terms of the RN analysis we have been using, and play a scale of F Mixolydian (mode starting on F using notes of the Bb major scale) this is unlikely to sound like good blues.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **I** | **IV7** | **I** | **I7** | **IV7** | **IV7** | **I** | **I** | **V7** | **(IV7)** | **I** | **V7** |

ex 9a: A very basic 12 bar blues sequence

This sequence was often slightly modified in swing, R & B and boogie-woogie of the thirties:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I | IV7 | I | I7 | IV7 | IV7 | I | I | IIm7 | V7 | I | IIm7-V7 |

ex 9b

Often the secondary dominant is used in bar 8:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| I | IV7 | I | I7 | IV7 | IV7 | I | VI 7 | IIm7 | V7 | I | IIm7-V7 |

Ex 9c

There are also 12 bar blues sequences in a minor key:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Im | IVm7 | Im7 | I7 | IVm7 | IVm7 | Im7 | Im7 | bVI 7 | V7 | I | IIm7-V7 |

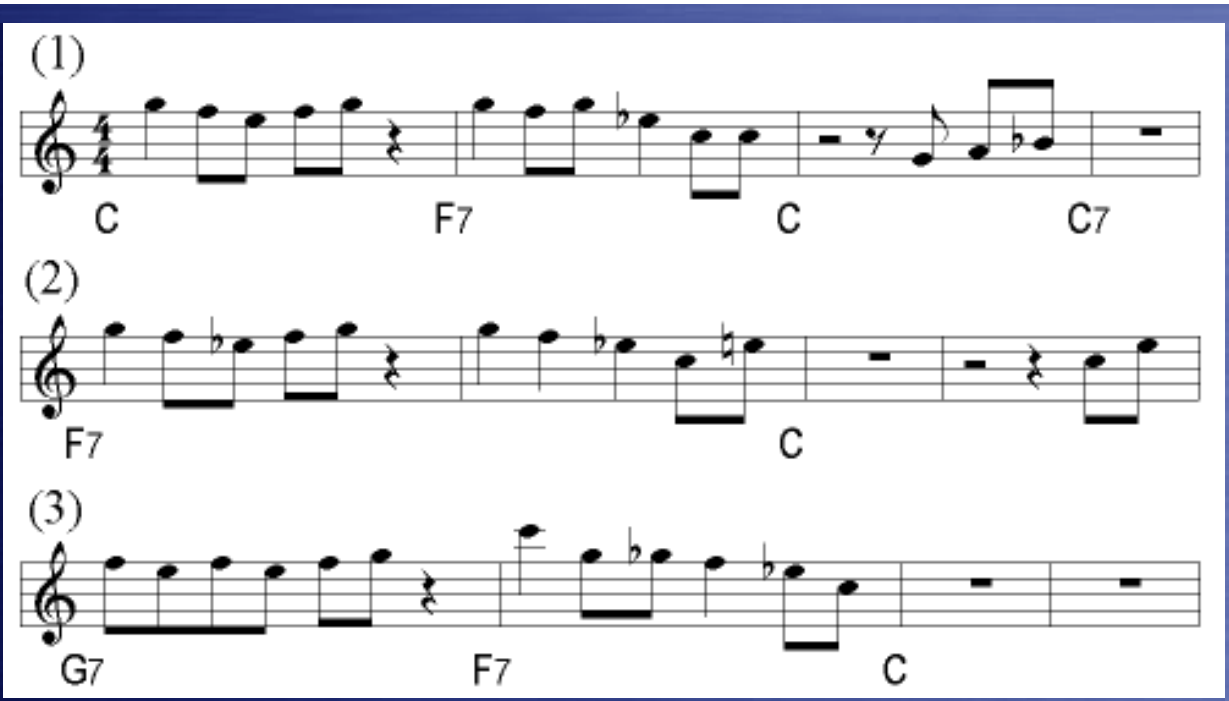
ex 9d: A typical minor blues

N.B. In all of these sequences chord I is a triad (except on bar 4). In "jazz" blues sequences the tonic chord can be a major 7, however this is rare in real blues where chord I is either a triad, a dominant 7th chord or a 6th chord (the added note is used for colour rather than harmonic function as mentioned above), except on bar 4 where it is nearly always a dominat 7th leading to the IV chord on bar 5.

## Form of the 12 bar blues

There are always three 4 bar phrases (ex 9e):

1. Tonic (sometimes with a subdominant on bar two)
2. Subdominant and back to tonic (often with repeat of first melody and lyric)
3. Dominant (sometimes via subdominant) back to tonic (often with different melody and lyric)




ex 9e: phrases in12 bar blues.

As you can see, the second phrase is altered slightly to fit the different chords. This is extremely typical of blues.

**A very useful rule to remember:**

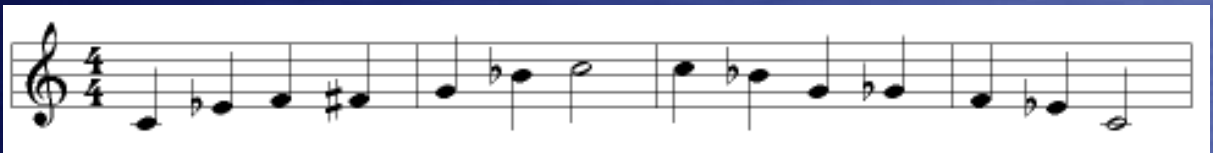
This alteration of the 3rd note of the tonic scale from major on the I chord to minor as it becomes the 7th of the IV chord is extremely useful when composing or improvising any type of blues.

In jazz, blues sequences can become quite complex but still retain these 3 areas

There are other blues sequences, usually adaptations or extensions of the typical 12 bar. When a *jazz* musician says: "let's play a blues", they often mean a 12 bar with a II-V in bar 9, usually with the secondary dominant or more sophisticated changes (ex 9c).*Blues* players usually indicate to the band whether they want a "V-IV" or "II-V" type sequence.

## Blues scales

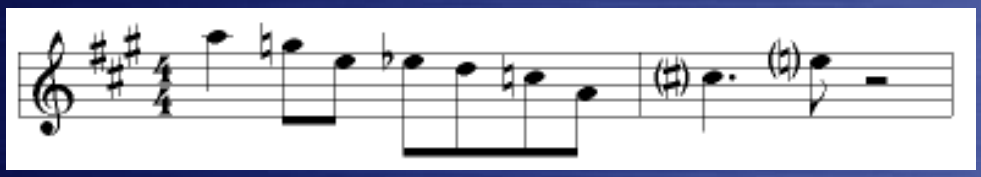
Blues musicians use more than one "blues" scale, (and rarely use the "blues scale" in its entirety) however the scale that has come to be called "the blues scale" is similar to a minor pentatonic scale but with a #4th (or b5th) added. (ex 9g). I shall refer to this as the *minor* blues scale but bear in mind it can be used in major and minor blues sequences.



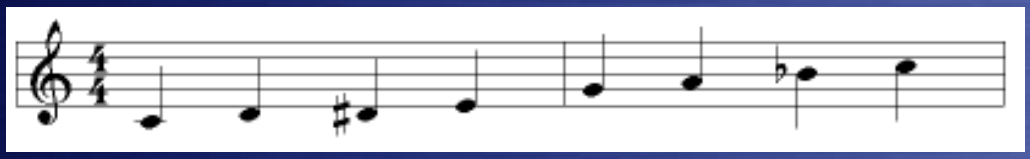
ex 9g: Minor blues scale

This scale can be used over all the chords of a basic 12 bar blues sequence, so in the key of C a C blues scale can be used over the F7 and G7 as well as the tonic chord. (Apparent wrong notes are acceptable in the context of blues, but their "correct" placement is usually dictated by experience and a feel for the style rather than academic rules).

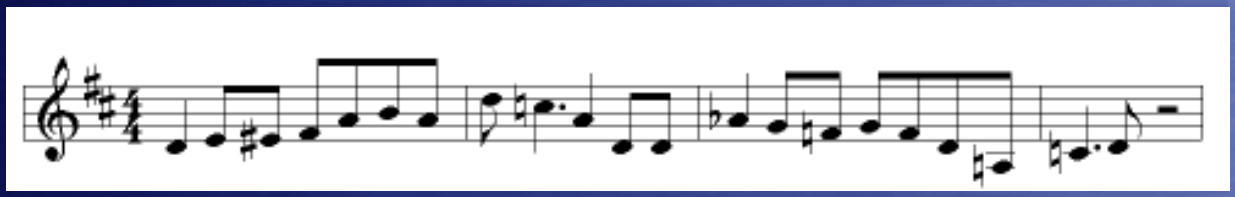
The secret of convincing use of the blues scale is to add a major 3rd (ex 9h) or combine it with a scale which is commonly used in rhythm and blues, swing or jump music. I shall call this the *major* blues scale (ex 9i).



ex 9h: Juxtaposition of minor and major



Ex 9i: Major blues scale

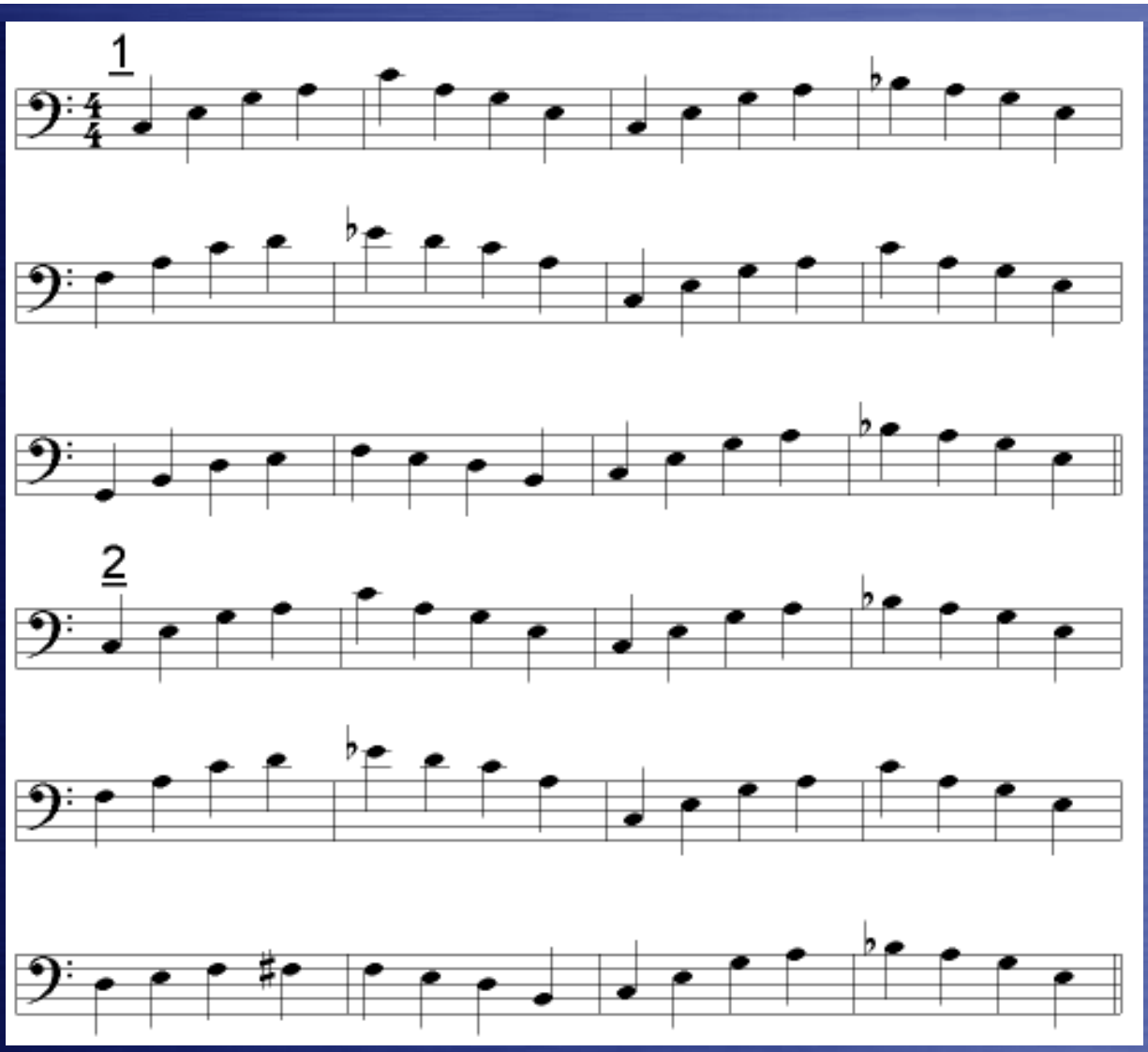


Ex 9j: Major blues scale combined with minor blues scale

These scales need not be restricted to blues music, they can also work well over other sequences which do not have more than one key centre (e.g. "I Got Rhythm" A section) - depending on stylistic context.

## Boogie Bass

Many rock and roll tunes are based on a 12 bar sequence, often with a typical bass line derived from a "boogie-woogie" piano left hand (Ex 9k). A good way to become familiar with blues changes is to practise this in all keys.

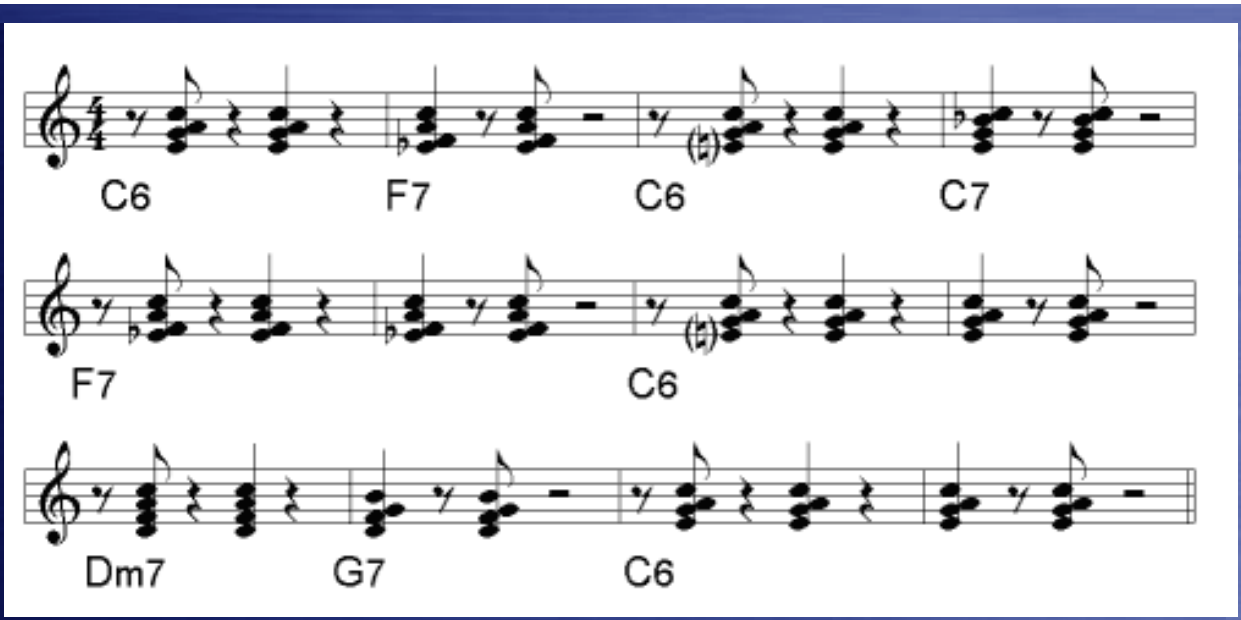



ex 9k: Note the IIm7-V7 progression instead of V7 in the second chorus.

## Improvising blues riffs

With a basic blues sequence it is relatively easy for an ensemble to improvise a riff or "head" arrangement. This was quite common among swing bands of the 30's. Many early Count Basie arrangements were improvised.

The easiest way is to imagine piano voicings where chords are inverted to keep the top voice around the same pitch (ex 9l). Add 6ths or 7ths where necessary to create 4 note chords.




ex 9l: Typical blues horn riff.

Note the melodic alternation between major and minor 3rd. The major 3rd of the tonic drops to the minor 3rd (7th of the IV chord) and back again. It does not take long for each member of an improvising section to remember his/her notes on a riff such as this, at which point it is easy for the leader to suggest another riff (rhythmic pattern) which everyone can play using the same harmony notes. This principle applies whether creating "head" arrangements for horns, voices, strings or whatever.

# JAZZ THEORY & IMPROVISATION

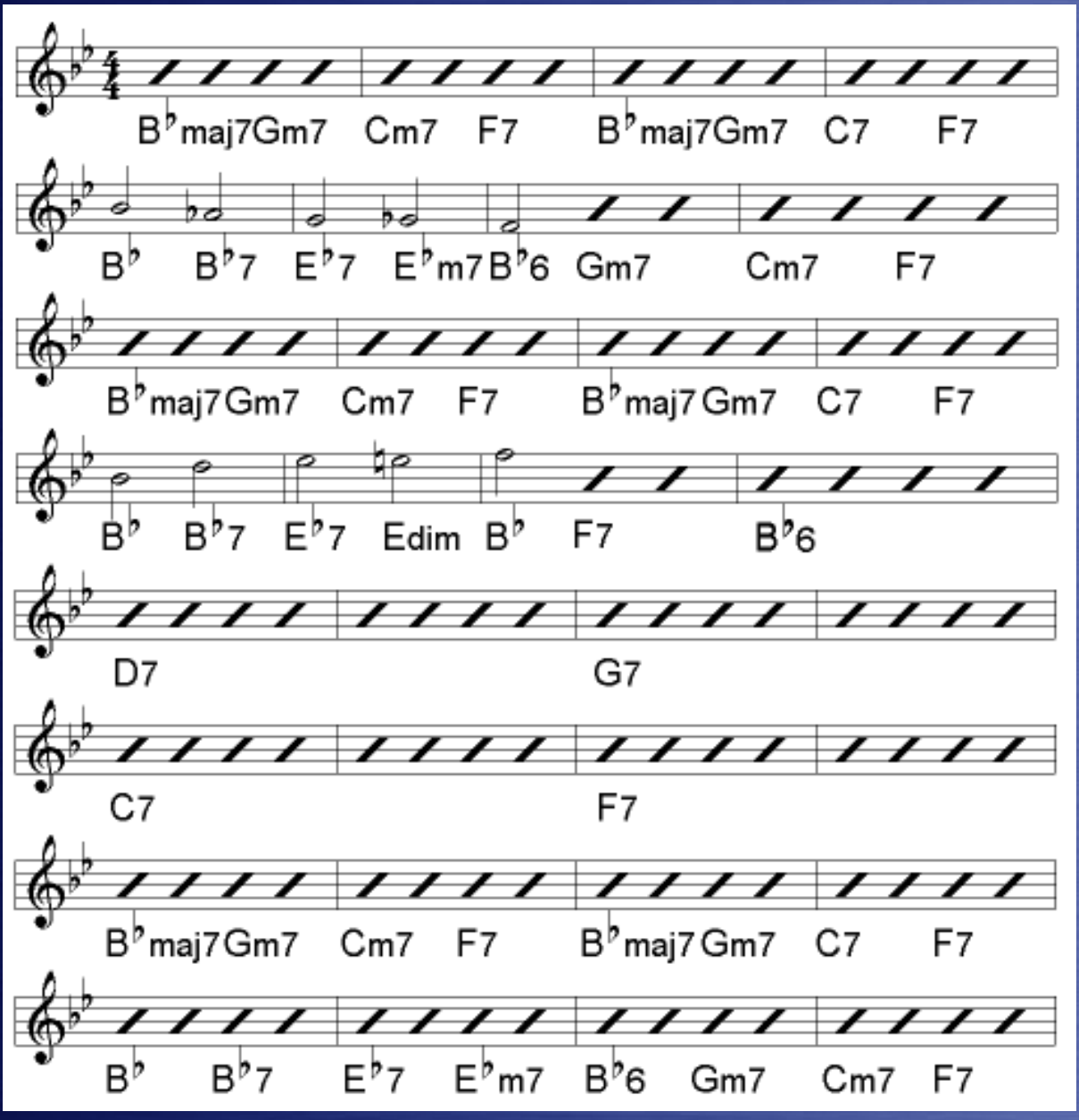
Pete Thomas, Music producer, composer, saxophone





## I GOT RHYTHM

Standards that are used for jazz often have a 32 bar sequence with an AABA form. It is usual (but not compulsory) for a band to play the melody ("head") at the beginning and end of the piece, with improvised solos between over the repeated chord sequence of the melody. One very common chord sequence is that of George Gershwin's "I Got Rhythm", though usually with an original "head" and without the final 2 bar tag. Jazz musicians sometimes refer to this sequence as "Rhythm changes". Along with the 12 bar blues sequence, this sequence was almost the "anthem" of bebop. The chord changes are of course subject to regional/stylistic variations. Ex 10h shows a typical sequence based on "I Got Rhythm".



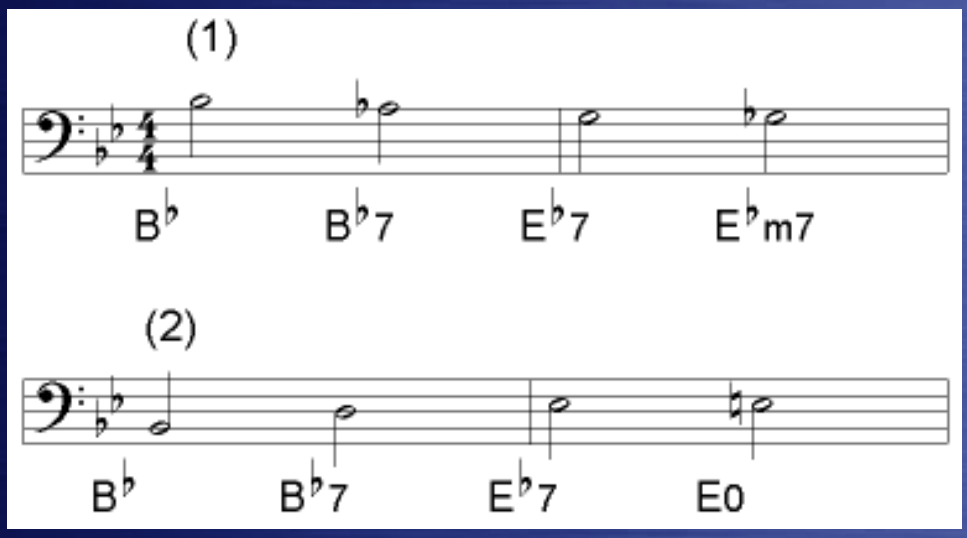
ex 10h "I Got Rhythm"

This sequence shows two important variations:

(a) bars 5-6. (Ex 10i-1) This variation uses chord IV minor which is altered to accommodate the "passing note" descending melody (or bass) line. (See chapter 7 - modal interchange).

(b) bars 13-15. (Ex 10i-2) #IV diminished is used to accommodate the "passing note" ascending melody (or bass) line.

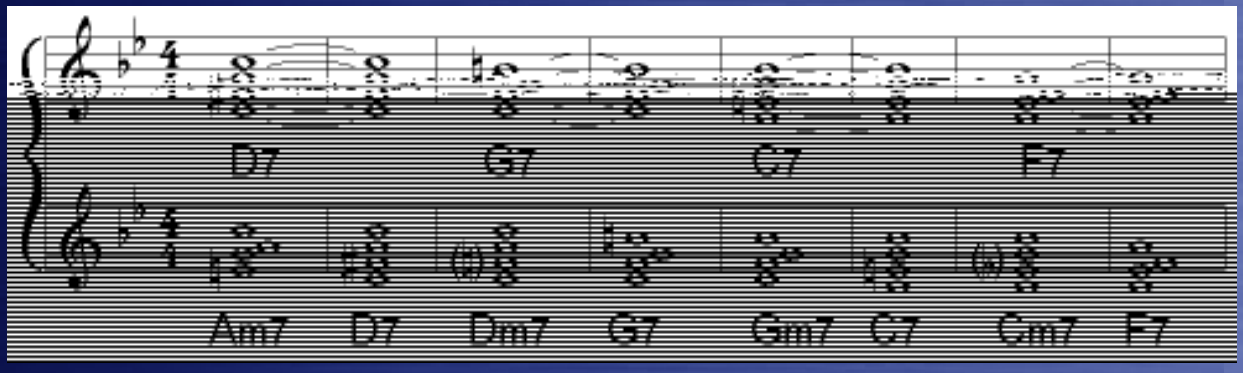
Both are common in Rhythm changes but would not usually appear in the same tune or at least not in the same chorus. I have shown them here together for convenience.




Ex: 10i "I Got Rhythm" variations at bars 5/6 of each "A" section.

Some of the many variations used on this sequence:

- The middle 8 can be more complex - V7s could be converted into IIm7-V7s (see ex 10j)
- b5 substitutes could be used. The cycle of fifths could becomes a cycle of semitones if alternate chords are b5 substitutes (see above ex 7m)
- The melodic resolution to tonic at the end of each A section could fall either on bar 7 ("Lester Leaps In") or on bar 8 as in the original "I Got Rhythm" melody.




ex 10j: Addition of IIm7 chord to each V7 chord in a cycle.

This can have the same melodic effect as a suspended 4th on each chord - the G of the Am7 resolves to the F# of the D7.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## IMPROVISATION

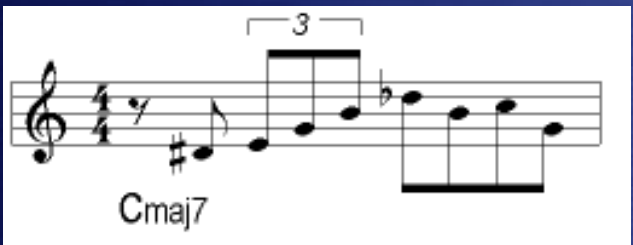
**"Wrong notes or right notes?"**

What constitutes a wrong note in jazz improvisation is often subjective. As jazz has evolved the harmony has in some cases become more complex or abstract. When bebop musicians started to use #11ths (or b5ths) in the 40s, the more traditional players and critics considered these to be "wrong" notes. Similarly avant garde ("freeform") players of the 50s and 60s shocked the jazz establishment with their use of atonality.

It is almost impossible to provide a complete set of rules regarding what sounds "good" or "bad". The following are conventionally considered to be wrong notes (sometimes called "avoid" notes), ***unless used as passing notes.***

- A 4th over any major chord (unless it is an 11th or sus 4 see ex. 4e)
- A major 3rd on a minor chord
- A minor 3rd (#9th) or minor 7th on a major 7th chord
- A root note as a sustained note over a major 7th chord
- A b9th on a major 7 or minor chord
- A b6th on a major 7 or minor chord
- A major 7th on a minor 7th or (dominant) 7th chord

These rules may not apply to certain ornaments (ex 11a),




ex 11a:

There are cases where unresolved dissonance is useful for dramatic or emotional effect. There are no rules in this case, only subjective (good or bad) taste.

The most obvious way of ensuring that you don't play any wrong notes is to play only the chord notes, i.e. a series of arpeggios. While this is a very good exercise it can become boring and "unmusical". Unless you are immediately inspired by great spontaneous melodic phrases, the second most obvious way is to play scales that fit the chords. This can also become tedious if your solos end up being a constant string of scales. Ultimately one could aim to combine arpeggios, scales, passing notes, melodic phrases and riffs into a coherent improvised composition complete with tension, release, surprise, humour, climax, menace, pathos, irony or whatever musical devices are appropriate to the style.

## Further application of scales to improvisation over chord changes

In chapter 5 we discussed how modal scales can be applied to a II-V-I progression. This is a very good starting point: basic major, minor and modal scales can be used to supply the diatonic notes implied by the chords on which we are basing our improvisation. To begin with it is very important to become fluent in the use of these basic scales and modes, but there are many complex and interesting scales used by jazz musicians to add chromatic notes.

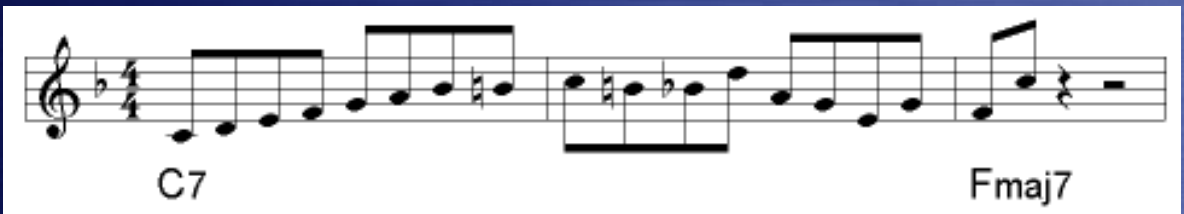
This section of this chapter will deal with some of these scales and analyse their effects.

### Bebop scales

A bebop scale is created by adding either:

- a major 7th to a Mixolydian mode
- a major 3rd to a Dorian mode
- a #5th or b6th to a tonic scale

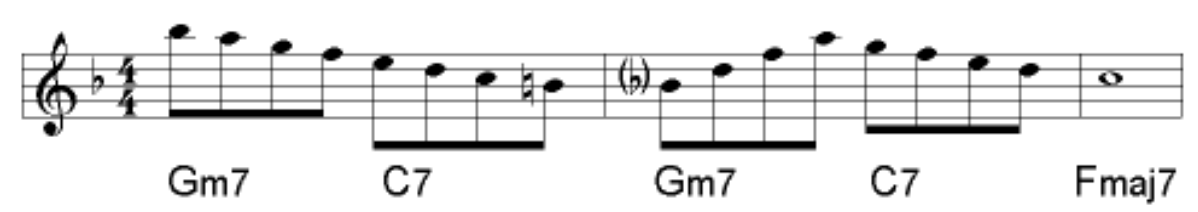
Because bebop scales are made up of eight notes it is likely that if you start a typical 8th note run on a downbeat with a chord note (root, 3rd, 5th or 7th) the other chord notes will also fall on strong beats. This obviously means that notes to be avoided such as the 4th (see above: wrong notes) become passing notes. (Ex 11b). Bebop scales should only be used as scales, not to construct melodic phrases otherwise the added chromatic notes will no longer be passing notes and will not fit the chord.




ex 11b: Bebop scale

As the Mixolydian and Dorian bebop scales contain identical notes, the same scale can be used across a IIm7-V7-I sequence, as with the modal method (chapter 5).

The bebop scale leads nicely to the 3rd of the repeated IIm7 to end up with a very satisfying jazz (bebop) style. (Ex 11c)




ex 11c: Bebop scale covering a repeated IIm7-V7 progression.

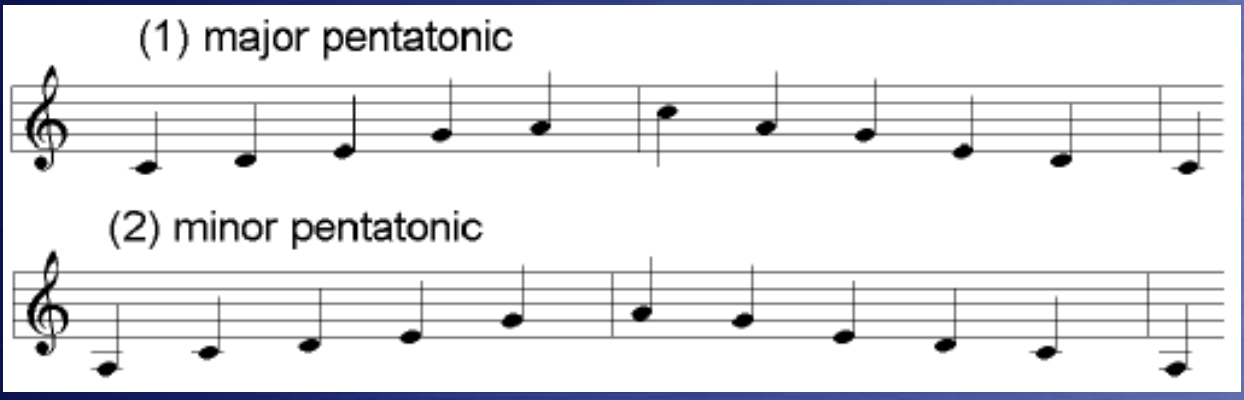
### Pentatonic scales.

These are 5 note scales, of which there are many, however only two are common

in jazz and I will refer to them as the major and minor pentatonic.

The major pentatonic is the same as the major scale but without the 4th or 7th (ex 11d-1). It is common in western folk music and is often used by composers to impart a traditional flavour ("Amazing Grace", "Auld Lang Syne")

The minor pentatonic is the same as the Aeolian or Dorian scale but without the 2nd or 6th (Ex 11d-2). This scale is sometimes used by composers to give an oriental feel.

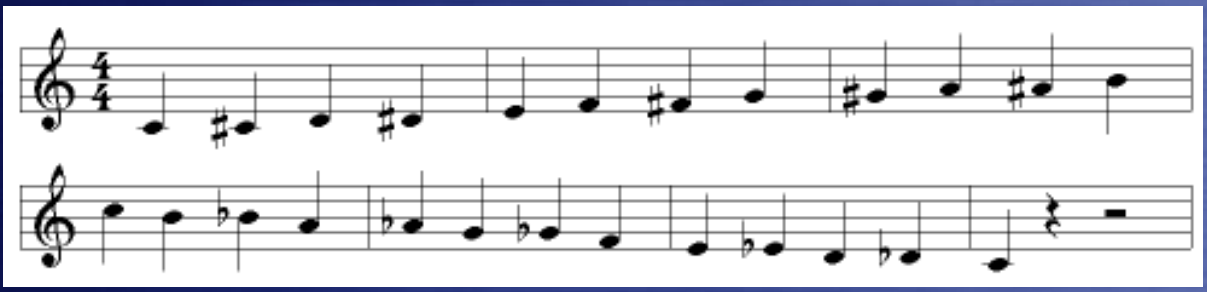



ex 11d: Pentatonic scale

These scales can be very easy to use as they can be fitted over many chords without "wrong" notes, but they can become monotonous. Used very effectively by Sonny Rollins and John Coltrane.

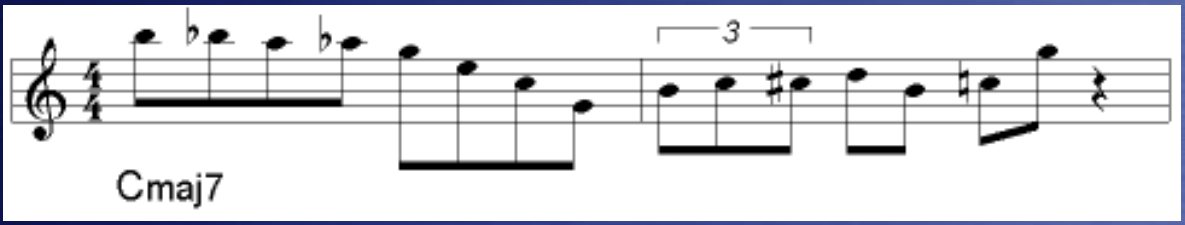
**Chromatic scale**

The chromatic scale consists of all twelve notes available in conventional western music, i.e. all the white notes and black notes of the keyboard



ex 11e: Chromatic scale

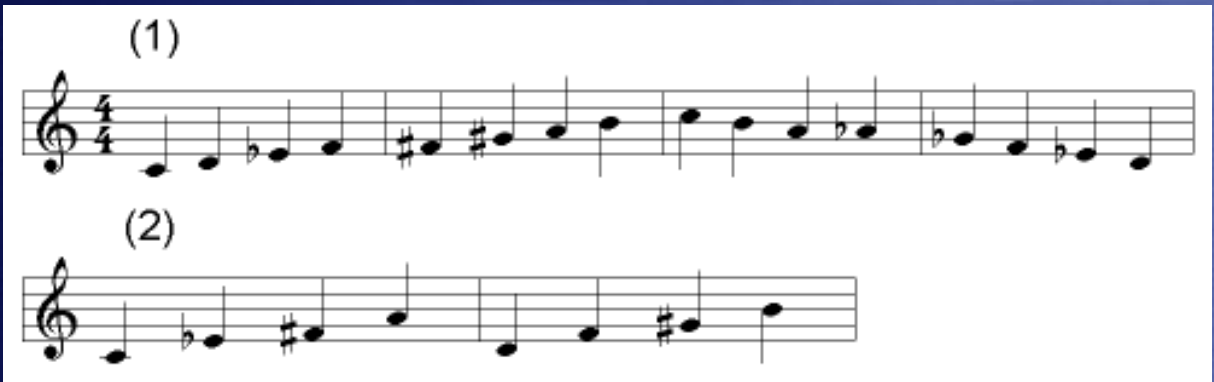
We saw that with the bebop scale that chromatic notes can be inserted into a scale so that chord notes fall on strong beats. We can take this one stage further and insert part of the chromatic scale to achieve the same end (ex 11f).




ex 11f: A typical bebop phrase using the chromatic scale

**Diminished scale**

This scale consists of alternating intervals of a tone and a semitone (ex 11g-1). Another way of looking at it is to imagine two diminished chords, one a whole tone higher than the other one superimposed on top of it (ex 11g-2)

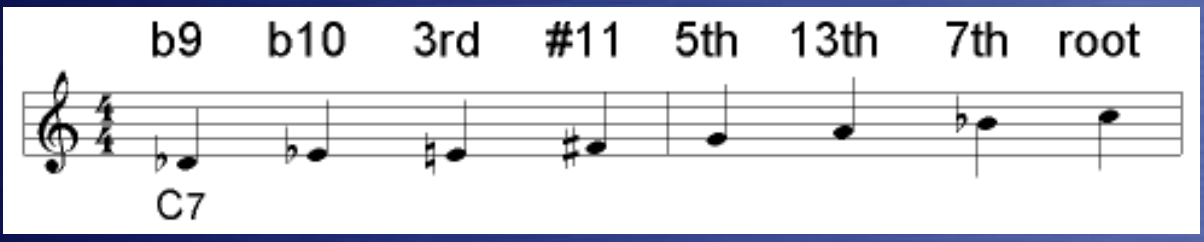



ex 11g: Diminished scale -

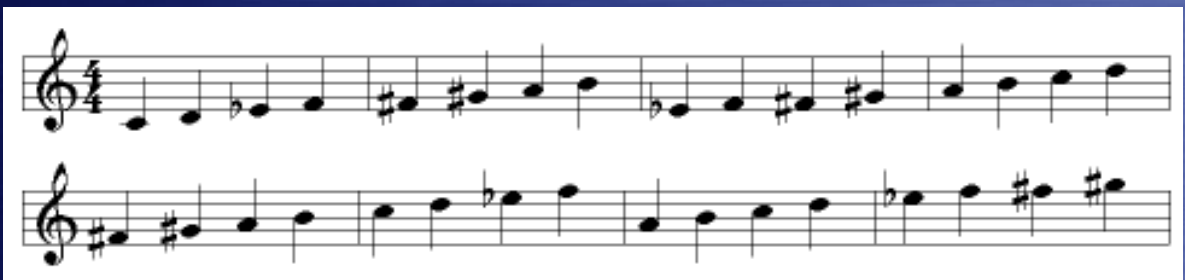
This is a very useful scale to apply to a dominant 7th chord. If the diminished scale based on the b9th of a chord is used it will not only include the chord notes (root, 3rd, 5th and 7th) but also supply some interesting altered notes and extensions (b9th, b10th, #11th and 13th - ex 11h).**It is useful therefore to always think of the diminished scale based on the note a semitone above the root note of the (dominant 7th) chord**. This may appear complex but has the advantage that there are only three different scales to learn. Diminished scales built on the roots C, Eb, F# and A are identical (ex 11j), as are the scales built on Db, E, G and Bb and D, F, Ab and B.

The scale in ex 11g fits chords B7, D7, F7 and Ab7.

This scale was commonly used by jazz improvisers of the late bebop era, e.g. John Coltrane. (See "Jazz Patterns" chapter 7)



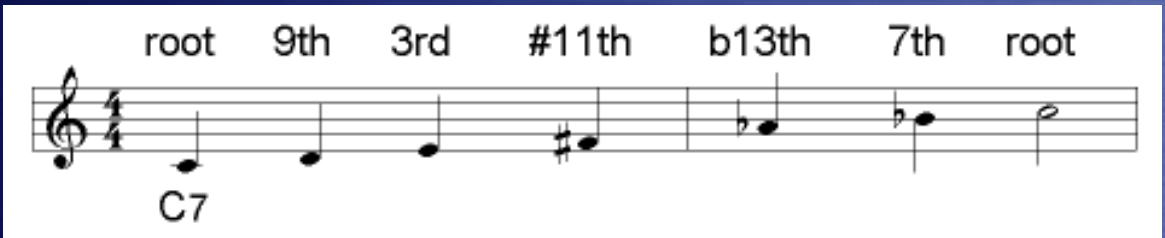

ex 11h: Diminished scale built on root Db (b9 of C7)



ex 11j: diminished scales C, Eb, F#, A. Note that the notes are identical.

**Whole tone scale**

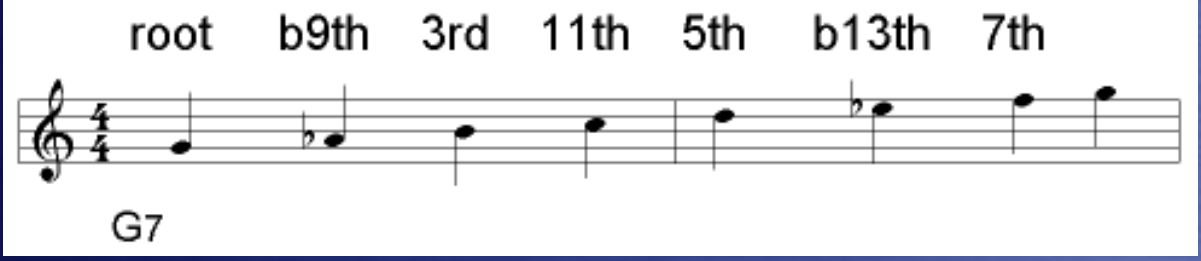
As the name implies this scale consists of whole tones (ex 11k). It is useful over a dominant 7th, especially a dominant 7th with an augmented 5th. (same note as b13th). The fact that the scale contains the augmented 5th or b13th does not stop it from being used when there is a perfect 5th in the chord, although a sustained note may sound too dissonant.



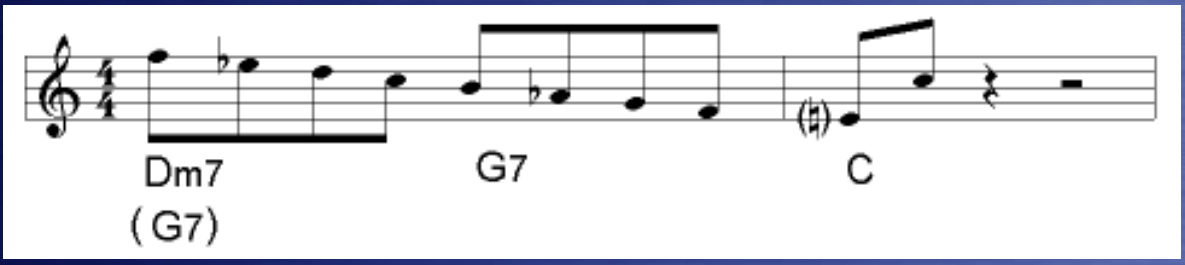

ex 11k: whole tone scale

**"Arabic scale"**

There are many Arabic scales but one in particular is used by western composers to imply a middle eastern flavour. This scale can be thought of as a "relative mode" of the harmonic minor, ie it is the same but starting on the fifth degree of the scale. It is very useful over a dominant 7th chord as it adds two colourful chromatic notes - the b13th and b9th (ex 11m, 11n)




ex 11m: "Arabic scale" - harmonic minor starting on 5th degree of scale.



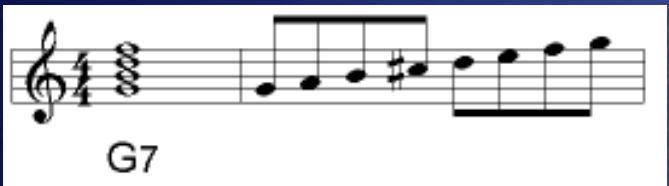

ex 11n : "Arabic scale" used over a II-V-I sequence (or simply V-I)

Another way to think of this is to use the harmonic minor scale with the same root as the tonic chord that the V7 is leading to, so G7 uses a C harmonic minor but be careful not to emphasise the note "C" inapropriately.

Used over a major V7 -I cadence the scale implies the modal interchange of the minor tonic for the major tonic, even though the minor tonic never materialises.The resolution to the major 3rd of the tonic is very satisfying after the "bluesy" minor feel of the scale. This scale is obviously also very useful over a minor II-V-I.

**Lydian Dominant (Melodic minor starting on 4th degree of the scale)**

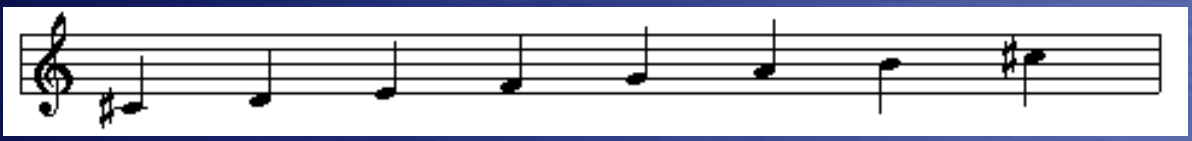
On a dominant 7th chord the sharpened 11th is supplied by using the melodic minor scale whose root is the 5th of the chord (ex 11q). This scale is also clled the Lydian dominant as it is the same as a Lydian scale but with the 7th flattened.




ex 11q: Lydian dominant (D melodic minor) to supply a #11th to a G7

**Diminished Whole Tone ("Altered Scale")**

Using the notes of the D melodic minor scale, make C# the root and view the scale as an altered Mixolydian.



This scale is often called the altered scale as it supplies many of the notes that are possible to alter on a dominant 7 chord. In addition to the basic diatonic notes of C#7 this scale adds D (b9), E (b10), G (#11 or b5) and A (b13 or +5).

Another way of looking at this would be to use the melodic minor scale based on the b9th degree of the dominant 7 chord, in the same way we would use a diminished scale. Note that the first half of this scale is identical to the way a D diminished scale fits the chord, the second half is a whole tone scale. This is a very popular scale in modern jazz due to the interestingly high degree of chromaticism.

# JAZZ THEORY & IMPROVISATION

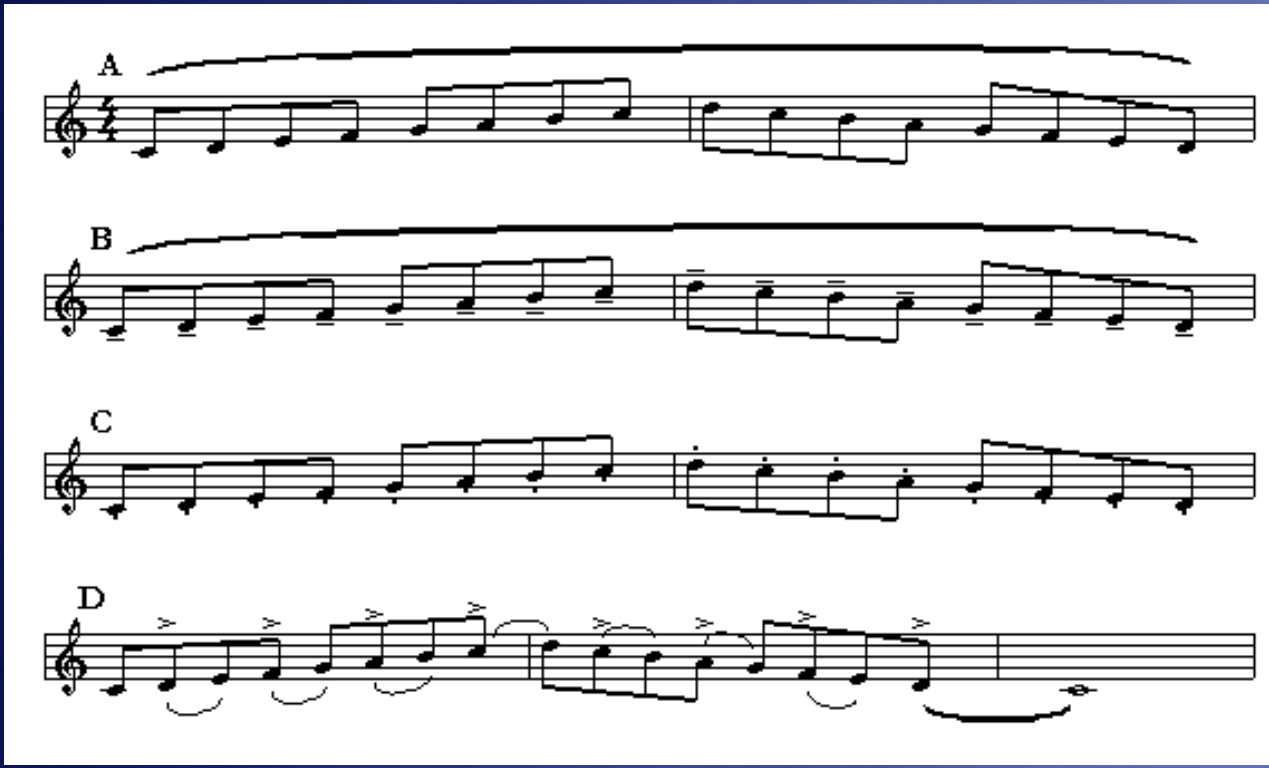
Pete Thomas,
Music
producer,
composer,
saxophone





## DAILY WARM-UP EXERCISES

All of the exercises and patterns should be practised using different articulations. The actual techniques can be adapted to suit your particular instrument (tonguing, fingering, slurring etc.) but should basically be as follows:




1. legato
2. legato tongued, (soft tongued)
3. staccato
4. "bebop"

All can be practised using straight eighths or varying amounts of "swing". An even tempo must be sustained throughout, this is much more important than speed. This means that instead of starting fast and slowing down for tricky passages, you should start at a slower tempo. Any awkward passages should be practised on their own until you can play them as fast as the easy bits.

Ideally you should already be able to play all major and minor scales and triad arpeggios in all keys. If you are already proficient in A, B and C then concentrate more on D. On wind and string instruments bebop phrasing can be played with or without the accents. On keyboard instruments, tuned percussion or any other instruments where slurring notes is not possible, accents are essential to imply the off beat character. When using this type of phrasing, any triplet figures should be played legato, slurring into the first of the next group of quavers.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## DIATONIC EXERCISES

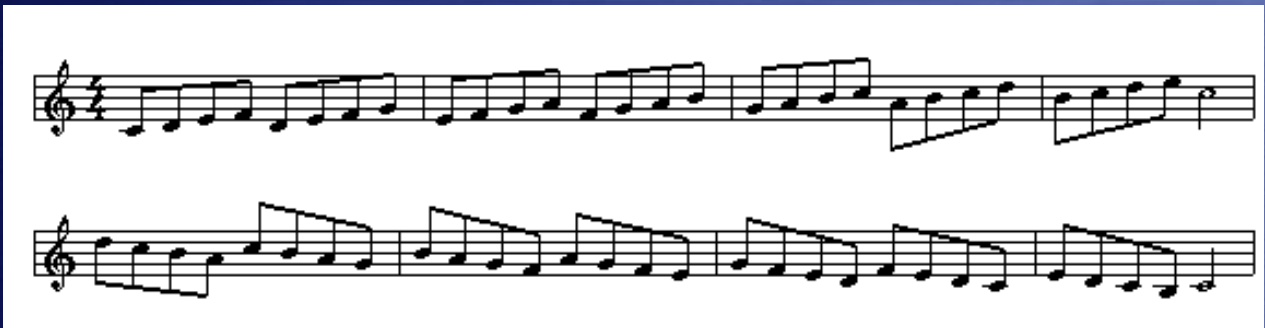
If you are used to practising scales, the following exercises can replace a large part of your normal scale practice. They are more interesting than plain scales and will help with technique and harmonic understanding as well as being useful to use in improvisations at times.

To sustain interest it is recommended that instead of practising in all keys (which should be an ultimate goal), for the first few weeks you should limit your practice to four keys. These are the major keys of C, Bb, F and E and where appropriate the related minor keys of Am, Gm, Dm and C#m. Initially minor scales should be the harmonic minor and melodic minor. The melodic minor should be the same descending as ascending, with major sixth seventh intervals or in other words the same as a major scale but with a minor third. (See appendix A for suggested key practice schedule). These keys can be used as part of a daily routine, but other keys will be practised as necessary for specific tunes or chord sequences. Were indicated some of the exercises should be practised using modes.

The ranges of the exercises should be adapted to suit your instrument, if possible extend the range to cover two or three octaves.

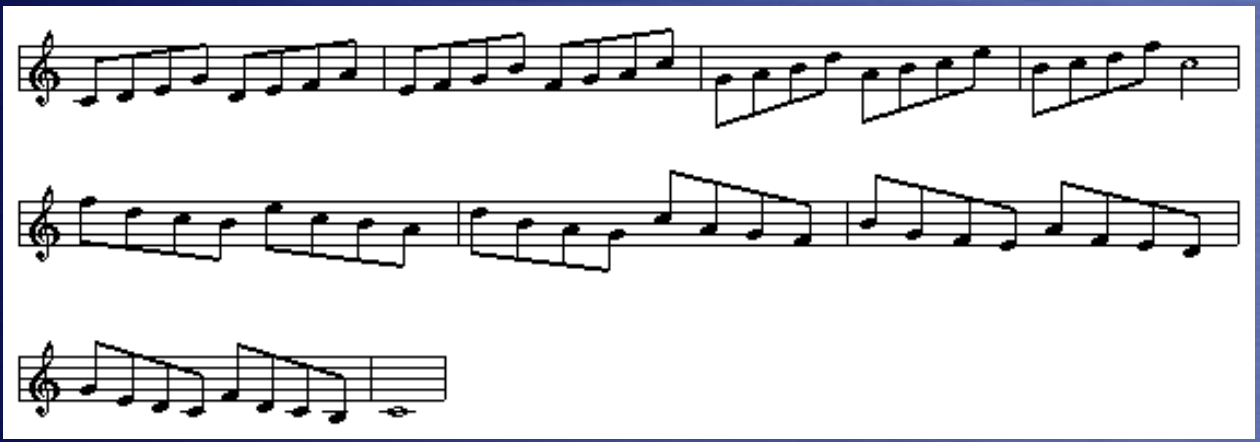
Ideally once you know an exercise in one key you should be able to transpose it in your head to the other keys. Even if this means you play it slower, this is better than writing the exercise out in different keys.

Ex 1

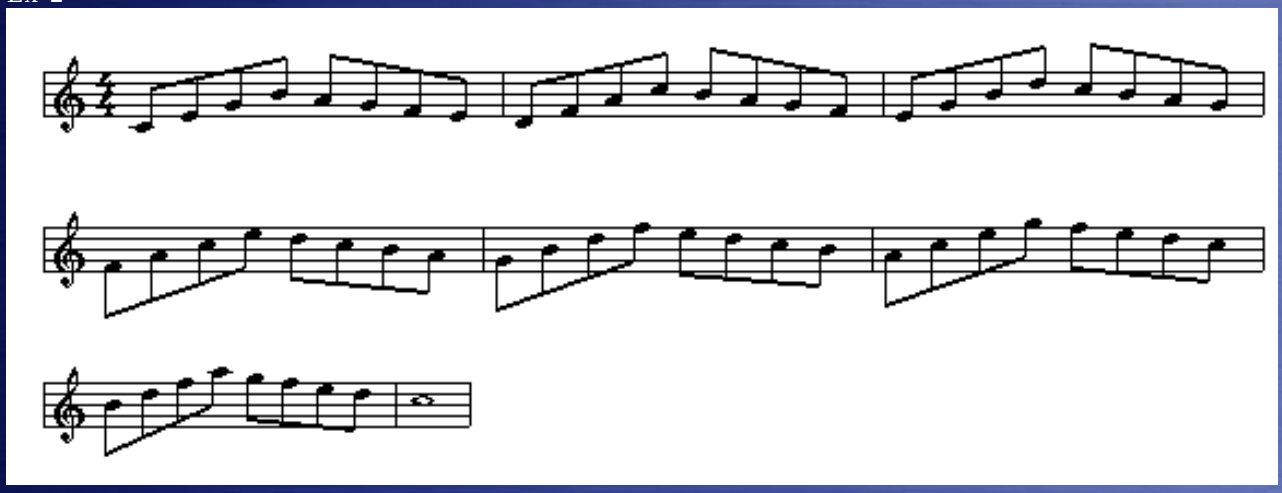


Practice in major and minor keys. Be aware of the scale degree of the first note of each group of four (C=1, D=2, E=3 etc.)

Variation:

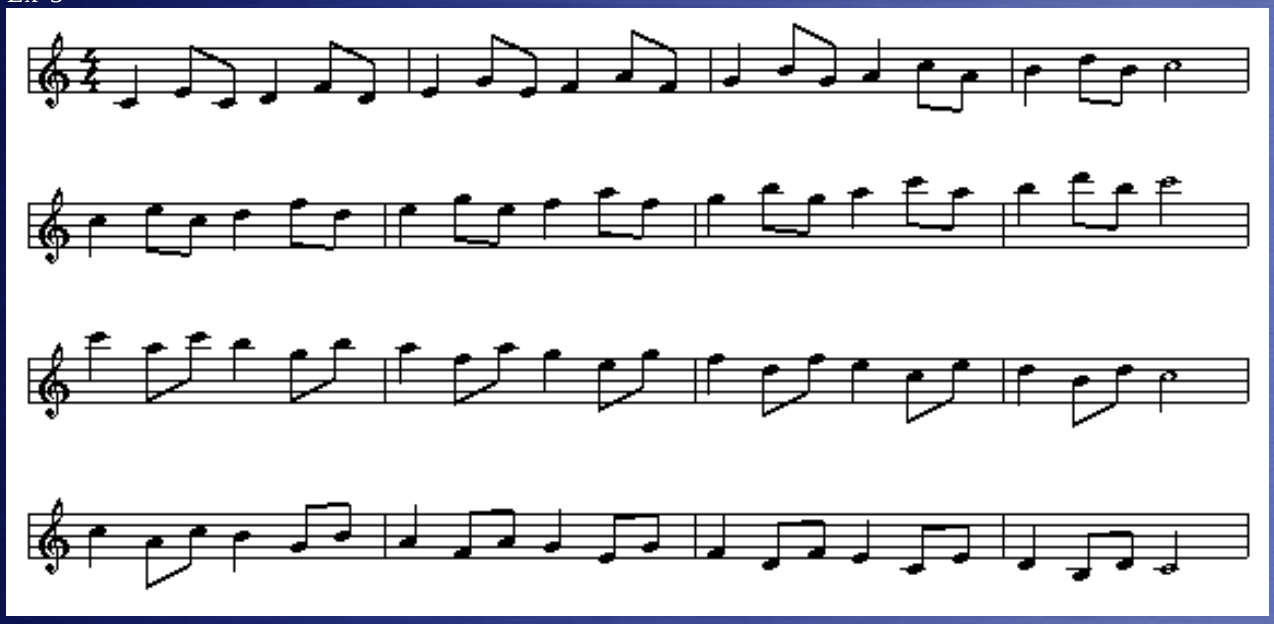


Ex 2

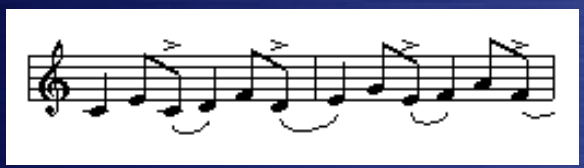


Practice in major keys. Be aware of the chord name and scale degree for each rising arpeggio. This is an extremely useful exercise for becoming familiar with four note ($7^{th}$) chords and their harmonic relationship.

Ex 3

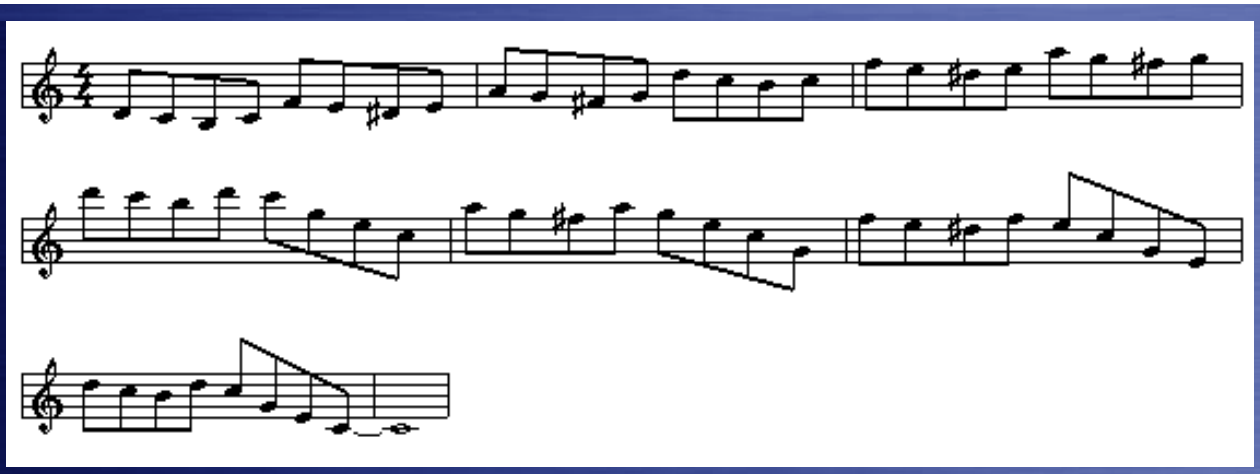


Practise in major and minor keys. When using bebop phrasing tongue the first quaver and slur from second quaver to crotchet:



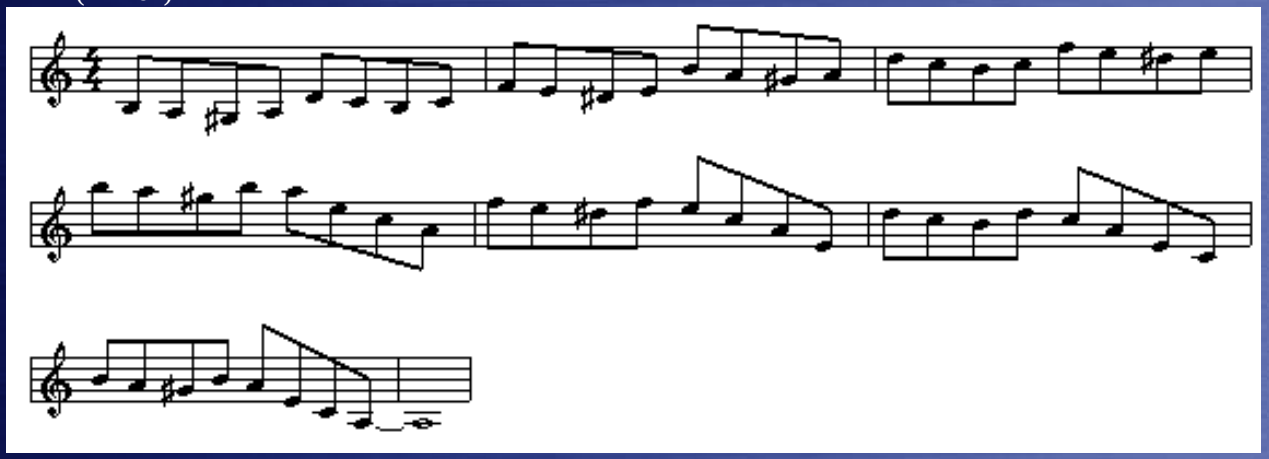
The following exercises use non chord notes either as suspensions (the diatonic note above the triad chord note) or non chord notes a semitone lower than the chord notes. The lower notes are very useful to learn as they can be used a neighbour note or “secondary leading note”.

Ex 4 (major)

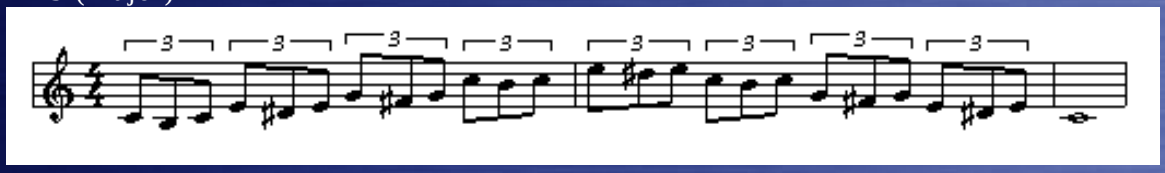


Whether major or minor, these exercises always use the diatonic note above the chord note and the semitone below.

Ex 4 (minor)

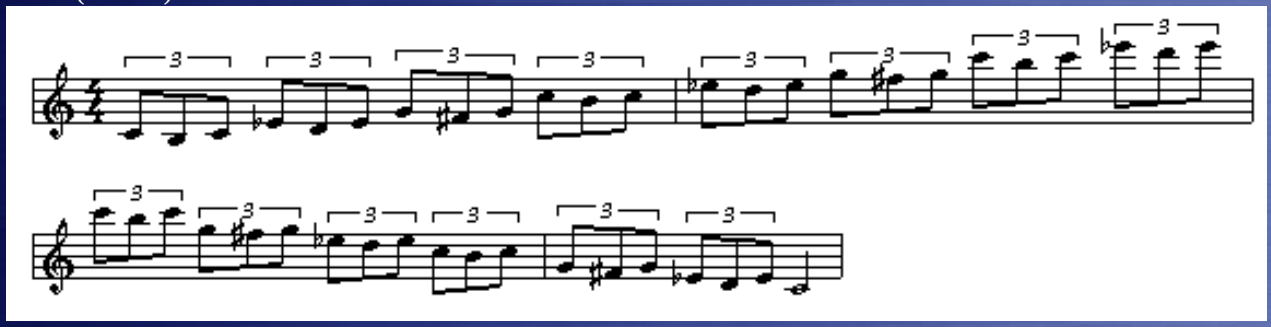


Ex 5 (major)

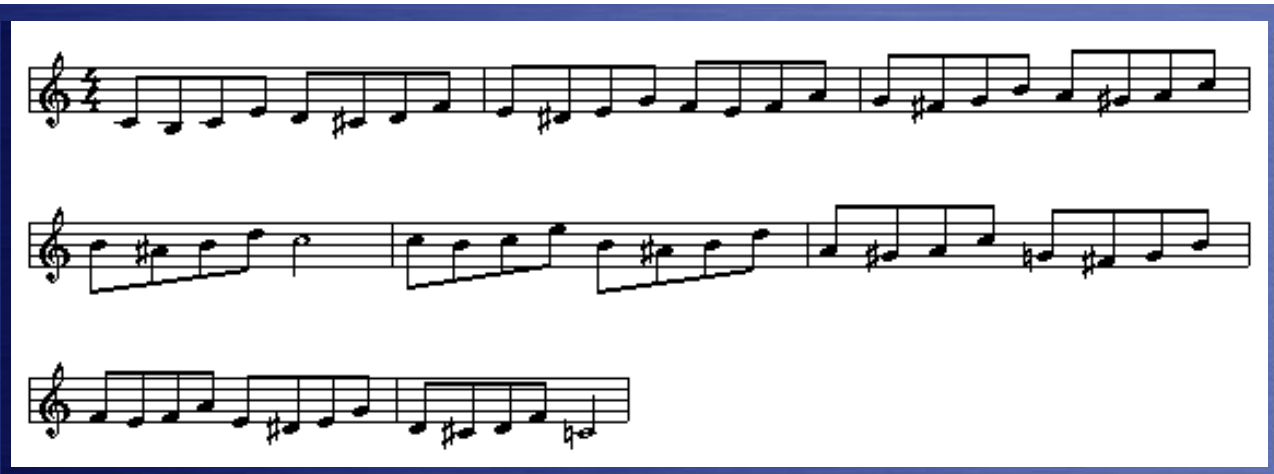


Practise major and minor. The note below the chord tone is always a semitone lower.

Ex 5 (minor)



Ex 6



# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## DORIAN MODAL JAZZ & JAZZ FUNK GROOVES

These are usually tunes or sections of tunes based on a one or two chord repeated pattern. A one-chord pattern in a minor key can imply an Aeolian, Dorian or Phrygian mode. As soon as a second chord is added the mode is usually more clearly defined.

For example:

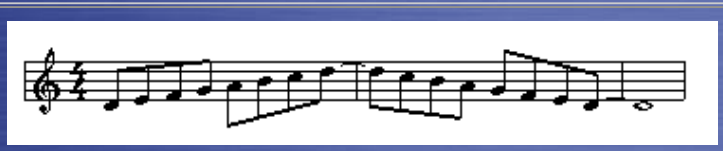
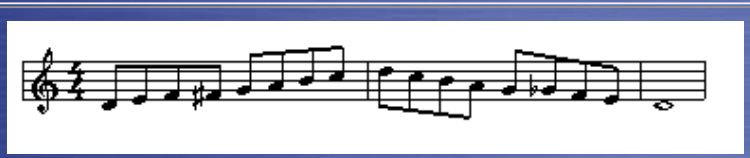
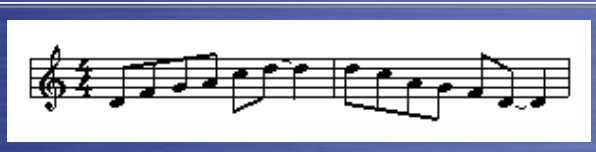
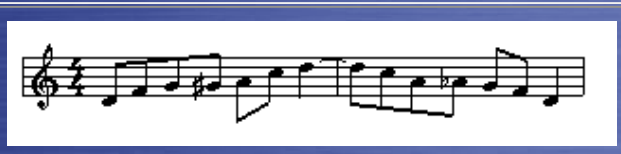
| | |
|---|---|
| **Dm7 - G7** | implies Dorian as the G7 contains the major 6 of D |
| **Dm7 - Gm7** | implies Aeolian as the Gm7 contains the minor 6 of D |
| **Dm7 - Eb ma7** | implies Phrygian as the Eb contains the minor 2 and minor 6 of D |

The Dorian mode is probably most common mode. It is also a very useful mode to practice as the two chords in the example above also form part of a typical IIm7- V7 - I chord sequence.

It is very important to be aware that the chords Dm7 - G7 in a Dorian mode are chords I and IV, but in the key of C they are chords II and V and usually imply a perfect cadence to chord I.

### Scales and modes useful for dorian improvisation

NB scales in improvisation should always be used as a starting point for inventing melodic patterns, and not used exclusively as scales.

| | | |
|---|---|---|
| Dorian mode | 7 note scale |  |
| Dorian bebop | Dorian mode with added chromatic passing note to create 8 note scale |  |
| Minor pentatonic | 5 note scale |  |
| Minor blues scale | minor pentatonic with added chromatic passing note |  |

### Dorian mode

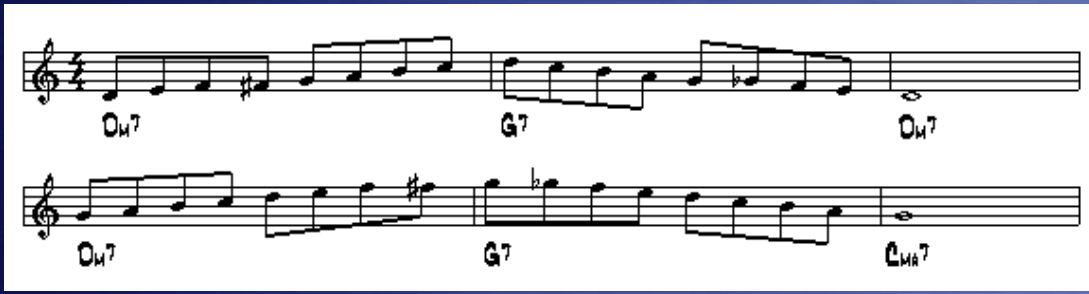
This is often thought of as the scale built on the second degree of a major scale. In the context of modal music it is much better to think of each mode as a scale in its own right, not relative to a major scale. It can however

be useful to equate a mode to its *parallel*major or minor, ie the one with the same root note. Each mode has defining scale degrees; eg a Dorian in D differs from a major scale of D in that the third and seventh degree of the scale are minor. It differs from D harmonic minor in that the sixth degree is major and the seventh degree is minor. So the defining notes of a Dorian are the minor third, major sixth and minor seventh.

**Dorian bebop**

"Bebop" scales are not true scales in their own right, but scales that have had a chromatic passing note added to create an 8 note scale. This can be useful when improvising on 8th notes so that a scale passage resolves to a chord note, or so that chord tones fall on a strong beat.

NB. The main essence of modal jazz is melodic invention rather than the harmonic expertise used in changes based jazz. In a Dorian sequence that consists of the two chords Im7 and IV7, improvisers often interchange patterns and scales so that a Dm7 pattern can be used over the G7, or a G7 pattern can be used over the Dm7. This works well provided that the improviser is aware of the tension created by this kind of interchange and uses it appropriately. This is a stylistic issue, it is something that comes with experience and is often impossible to define. Note that the same passing note is used for the Dorian and relative Mixolydian mode, so that they usually blur into one scale over the chord changes, whether a Dorian Im7 - V7 or a standard IIm7 - V7.




**Minor pentatonic**

This is the same as the Dorian but without the second and sixth degrees of the scale. Used frequently by Sonny Rollins in his post bebop period. A common scale in many forms of blues.

**Minor blues scale**

(Often referred to as "The Blues Scale". This is incorrect as there is more than one so called blues scale - see blues). In the same way that the bebop scale was invented by adding a passing note to an existing scale, the minor blues scale is just a minor pentatonic with a chromatic passing note added between the fourth and fifth degrees. The passing note is a contrivance that is intended to emulate the intonation of a blues singer using "blue" notes, or intonation that defies the 12 note system. Rarely used as such by early blues musicians this scale has now fallen into the mainstream, thanks to 60s R&B and soundtrack music. It can be useful when used sparingly on a Dorian mode, major or minor blues sequence and is best when used to form licks rather than played as an entire scale. The same minor blues scale is used over an entire sequence, ie it does not change root with the changes of chord roots.

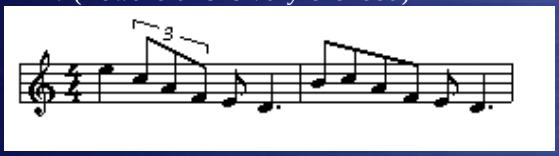
**Modal key signatures**

Although it is arguably correct to use the key signature that gives the correct number of sharps or flats, it is often less confusing to notate a Dorian as an Aeolian with the sixth degree raised as an accidental where it occurs, as you would with a melodic minor. Using this method a Dorian mode whose root note is G has 2 two flats not one, and the E naturals that occur are notated with a natural sign.

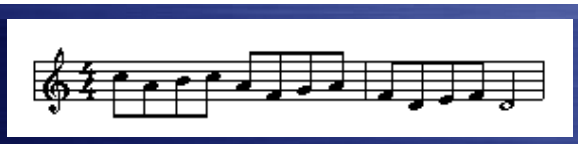
**Patterns for Dorian improvisation**

The following patterns are all tried and tested clichés. As such they are useful for practising technique but should be used sparingly when improvising. Strive to create your own patterns for practising and while actually improvising. As it is impossible for most players to be 100% original all the time, patterns, scales (and rests) are used fill in between original melodic motifs. The examples are all based on a D Dorian (Dm7-G7) but should be practised in all keys.

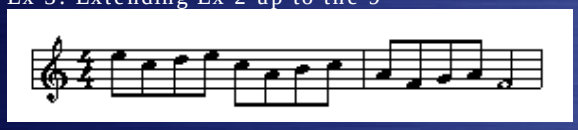
Ex 1: (Beware this is *very* clichéed)



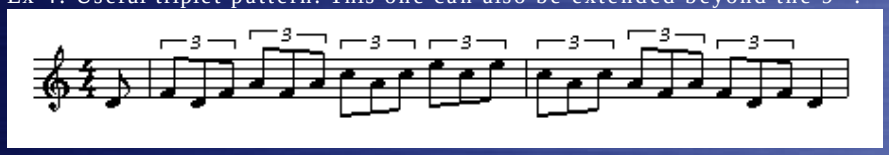

Ex 2:



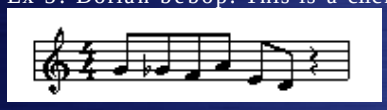
Ex 3: Extending Ex 2 up to the 9th



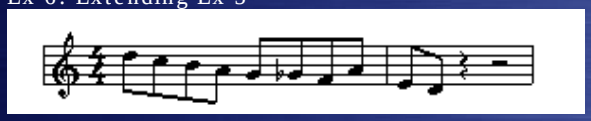
Ex 4: Useful triplet pattern. This one can also be extended beyond the 9th.



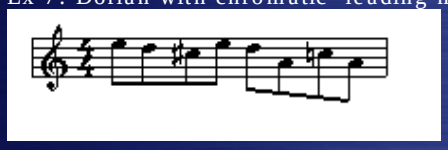
Ex 5: Dorian bebop. This is a cliché, but can be used in many combinations.



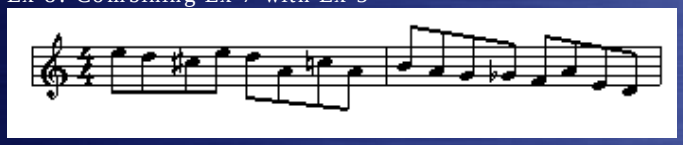
Ex 6: Extending Ex 5



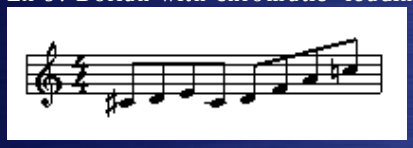
Ex 7: Dorian with chromatic "leading note"



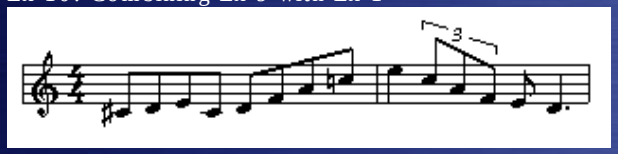
Ex 8: Combining Ex 7 with Ex 5



Ex 9: Dorian with chromatic "leading note"

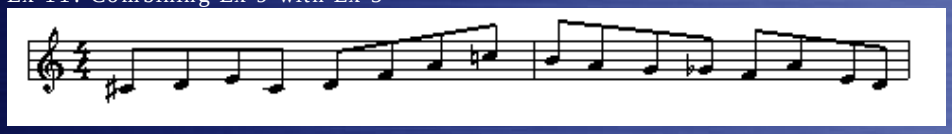


Ex 10: Combining Ex 9 with Ex 1

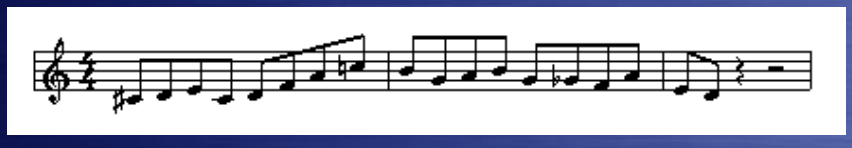


Note that as soon as Ex 1 is combined with another pattern, it becomes less of a cliché.

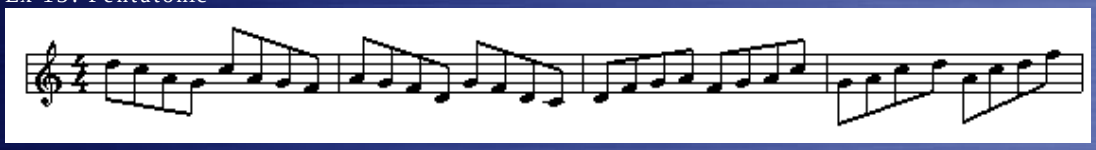
Ex 11: Combining Ex 9 with Ex 5



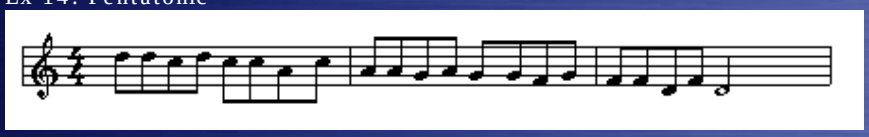
Ex 12: Combining Ex 9 with Ex 3 and Ex 5



Ex 13: Pentatonic



Ex 14: Pentatonic



# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## TONIC PATTERNS and CADENCES

Tonic chords are often more restricting for jazz improvisers than V7 or IIm7-V7 chords, as chromatic alterations do not sound good in many cases. The most useful chromatic alterations are "blue" notes, which should be used with care as the context dictates whether they are appropriate or not. Much of this is to do with individual taste or techniques of a particular instrument. This section will deal with mostly diatonic patterns on tonic chords.

The patterns are categorised by starting note. This is particularly important as these patterns usually follow on from a V7, and it can be very useful to combine them so that the last note of the V7 phrase runs smoothly and melodically into the first note of the tonic phrase at the perfect cadence. This is not a hard and fast rule, large intervals and surprising leaps are also useful.

### Starting on the root

Ex 1: Two note motif.....Perfect cadence (scale run)
tonic

Ex 2: Triad arpeggio..... Cadence (bebop scale and extended dorian pattern)
tonic

Ex 3: Four note motif....Extended using chromatic neighbour note
tonic

Note that the extended phrase can fit over a tonic or dominant.

### Starting on the 3rd

Ex 4:
tonic

Ex 5: As above but extended
tonic

Ex 6: Pentatonic pattern..... Cadence using bebop scale and neighbour note ("fake" leading note)
tonic

This phrase can also be used with a dominant chord:
tonic

Ex 7: Lester Young lick
tonic

Ex 8: Combination of 5 and 7
tonic

**Starting on 5th**

Ex 9: (Charlie Parker lick)
tonic

Ex 10: Extended to major 7
tonic

**Starting on major 7**

Ex 11: Arpeggio..... Extended using dorian pattern 2 but applied to tonic
tonic

Ex 12: Another Charlie Parker phrase.
tonic

# JAZZ THEORY & IMPROVISATION

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## BLUES

The commonest form in blues is the 12 bar sequence. In its most basic form this is based around three chords, tonic subdominant and dominant.

Ex 1: Basic 12 bar "blues" blues sequence

| | | | |
|---|---|---|---|
| C | C | C | C7 |
| F7 | F7 | C | C |
| G7 | G7 or F7 | C | C-G7 |

Although some or all of the tonic and subdominant chords may have a minor 7 added, this is a "blue" note and does not have its usual harmonic function as a dominant chord (except in bar 4 where it acts a secondary dominant leading to the IV7 chord). The above example only introduces the $7^{th}$ to the tonic at bar 4 to emphasise this chord change. It is not a modulation to IV as it would be in classical harmony.

Blues musicians tend to use phrases and patterns rather than scale runs, though jazz variations of blues can be based on a 12 bar blues structure and can include jazz and blues style patterns alongside each other.

A simple jazz blues sequence usually changes to chord IV at bar 2 and back to chord I at bar 3 and uses a IIm7 V7 at bar 9 (often preceded by a secondary dominant).

Ex 2: Basic 12 bar "jazz" blues sequence

| | | | |
|---|---|---|---|
| C | F7 | C | C7 |
| F7 | F7 | C | C or A7 |
| Dm7 | G7 | C | Dm7-G7 |

This type of sequence is typical of 1930s-1950s swing, jump and R&B styles. More complex sequences were used in bebop

Ex 3: Typical bebop blues changes

| | | | |
|---|---|---|---|
| C | F7-F#º7 | C | Gm7-C7 |
| F7 | F#º7 | C-Dm7 | Em7-Eb7 |
| Dm7 | G7 | C-Am7 | Dm7-G7 |

Blues licks can often be used in non-blues tunes, but usually only in progressions with key centres that do not change, eg I Got Rhythm (A section), Take the A Train (A section - but not bars 3-4). When using blues licks in non-blues standards, the blues phrases will often clash harmonically with the chord changes, so they should be used with discretion and not overdone.

The so-called blues scale was not used widely before the 60s, when it became popular with guitarists and film composers. This is really just a minor pentatonic with a passing note added. It is misleading to call this scale "*the* blues scale", as there are several scales from which blues phrases are derived. I shall refer to it as the "minor blues scale".

Ex 4: Minor blues scale (minor pentatonic with passing note)
blues

Although this scale can be used over the entire 12 bars, it will sound boring very quickly, especially if used in scale runs; it is also better to use the scale in short motifs. It is not a problem that the minor third of this scale is sounding over a major third in a tonic chord; this dissonance is derived from original blues vocal styles where singers would use versatile intonation. Instruments capable of bending notes can also use flexible intonation to imply blues.

The use of minor thirds in a major key is much more effective if juxtaposed with major thirds. It is also useful to use the major pentatonic (major blues scale), once again to formulate licks rather than being used in its entirety as a scale.

Ex 5: Major blues scale (major pentatonic with passing note)
blues

This scale can also have a passing "blue" note. Note that although both scales can be used over one key, this scale contains the same notes as its relative minor (Am in this case). As this scale contains a major third it can obviously be used on a tonic major chord. However it should not be used on a IV7 chord as the major third of the scale becomes the major seventh of the F7, and is not a useful dissonance (unlike the minor third on a major chord which *is* a useful dissonance).

When making up blues licks it is also useful to draw from other scales or combinations of the two mentioned above.

Ex 6: Major pentatonic with flattened third


**Some basic blues licks:**

Ex 7:Motif starting on 6th


Ex 8: Extended to flat 3rd (with tritone interval)


Ex 9: Motif starting on 6th, final note could be minor or major 3rd


Ex 10: Contrasting major and minor 3rd


Ex 11: Major pentatonic with flat 3rd


Ex 12: Motif with 4th (3rd could be minor or major)

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## JAZZ IMPROVISATION - scales

| *Chord* | *Scale* | *Chromatic notes* |
|---|---|---|
| Ima7 (-IVma7) | Major | none |
| | Major bebop | #5 (b6) |
| | Lydian | #4 (#11) |
| IIm7 | Dorian | none |
| | Dorian bebop | #3 |
| IIø7 | Locrian | none |
| IIø7 | Locrian with # 2nd | none |
| V7 | Mixolydian (continuation of II m7 Dorian) | none |
| | Mixolydian bebop (continuation of Dorian) bebop) | major 7 |
| | Whole tone | b5 (#4, #11) #5 (b13) |
| | Melodic minor* starting on 5th of chord V (Lydian dominant) | #4 (#11) |
| | Harmonic minor starting on 4th of chord V | b9, b13 |
| | Diminished scale starting on b9, 3rd, 5th or 7th | b9, b10, #11 |

| | | |
|---|---|---|
| | Diminished whole tone (altered scale) | b9, b10, #11, b13 |
| Im maj7 (Im6) | Melodic minor | none |
| Im maj7 | Harmonic minor | none |
| Diminished | Diminished scale | none |
| I7, IV7, V7 of blues sequence, minor chords | Blues scale | depends on chord |

* Melodic minor = major 6th and 7th descending as well as ascending.

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





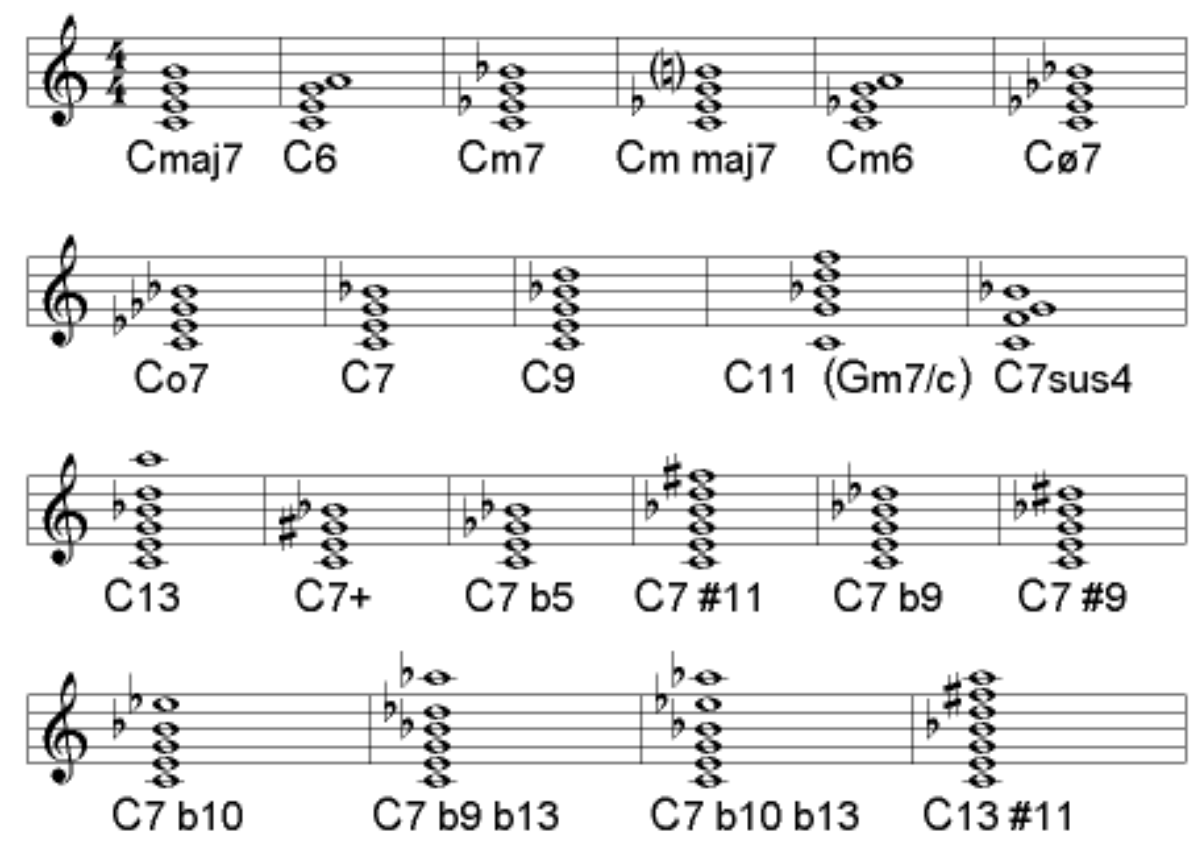
## CHORD SYMBOLS

Below is a list of the most common chord types with alternative symbols:

| | | | | |
|---|---|---|---|---|
| C major 7 | **Cmaj7** | **Cma7** | CΔ | CM7 |
| C minor 7 | **Cm7** | **Cmin7** | C-7 | |
| C minor major 7 | **Cm maj7** | **Cmin ma7** | C - Δ7 | C - |
| C half diminished | **Cø7** | **Cm7 b5** | **Cmin7 b5** | |
| C diminished (7) | **Cº (7)** | **C dim (7)** | | |
| C7 | **C7** | | | |
| C9 | **C9** | | | |
| C11 | **C11** | Gm7/C | | |
| C7 suspended 4th | **C7 sus4** | | | |
| C13 | **C13** | | | |
| C7 augmented | **C7 +** | C7 aug | C7+5 | |
| C7 flat 5th | **C7 b5** | C7 -5 | | |
| C7 #11 | **C7 #11** | C7 +11 | | |
| C7 flat 9th | **C7 b9** | C7 -9 | | |

| | | | | |
|---|---|---|---|---|
| C7 sharpened 9th | **C7 #9** | C7 +9 | | |
| C7 flat 10th | **C7 b10** | C7 -10 | | |
| C7 flat 9th flat 13th | **C7 b9 b13** | C7 alt | | |
| C7 flat 10th flat 13th | **C7 b10 b13** | C7 alt | | |
| C13 sharp 11th | **C13 #11** | C13 +11 | | |

- The symbols in bold typeface are recommended as some of the others can be confusing (especially "-" for minor and "alt" for altered forms of 9 and 13.
- The triangle symbol can be useful for major7 when in a hurry, but be careful as it can sometimes look like a badly drawn "o")
- The capital "M" for major 7 can also be confused for lower case "m".



# JAZZ THEORY & IMPROVISATION

Pete Thomas,
Music
producer,
composer,
saxophone





## REPERTOIRE

Jazz and pop musicians learn repertoire from records or from printed music. Jazz musicians sometimes specialise in a particular area but there are some tunes that everyone should know, if only to avoid embarrassment at a jam session when someone calls "Summertime". It is important to know the harmony as well as the melody. Most standards are available as sheet music, but jazz musicians often use "fake books" ("real books") or "buskers" books which contain only the melody and chord symbols (and sometimes a rough rhythm guide). The Hartley library has "The New Real Book" vols 1, 2 and 3 in Bb, Eb and C. Much of the important repertoire is also available in the various "playalong" books with CDs.

Below is a list of some of the most famous jazz tunes that I have found useful. This is by no means a comprehensive list, it is based mostly on jazz of the 30s - 50s and useful repertoire can vary from region to region in the world. There is a very comprehensive repertoire list in "The Jazz Theory Book" by Mark Levine. More modern jazz has become so diverse stylistically that it becomes almost impossible to list "modern" standards.

Tunes marked * are very important - everyone ought to know.

Tunes marked ** are essential - knowledge of these tunes is required in the final exam.

Serious jazz musicians should know *most* of these tunes.

### Standards

Ain't Misbehavin'
All Blues
All Of Me *
All The Things You Are *
Autumn In New York
Autumn Leaves *
Blue Moon *

Body And Soul
Bye Bye Blackbird
Cherokee
Days Of Wine And Roses
Desafinado
Do Nothin' Till You Hear From Me
Embraceable You
Flamingo
Fly Me To The Moon
Foggy Day
Georgia On My Mind **
Girl From Ipanema *
Green Dolphin Street
Have You Met Miss Jones?
Here's That Rainy Day
Honeysuckle Rose
How High The Moon
I Got Rhythm **
I Can't Get Started
I Cover The Waterfront
I Didn't Know What Time It Was
I Got It Bad And That Ain't Good
I'm Beginning To See The Light
I Want To Talk About You
In A Sentimental Mood
I'm Beginning To See The Light
I'm Getting Sentimental Over You
Just Friends
Lady Be Good
Lady Is A Tramp *
Laura
Love For Sale
Lover Come Back to Me
Loverman
Lullaby Of Birdland
Mack The Knife *
Mean To Me
Meditation
Misty **
Moonlight In Vermont
My Favourite Things
My Funny Valentine
Night And Day
On The Sunny Side Of The Street
On A Slow Boat To China
One Note Samba
Out Of Nowhere
Over The Rainbow
Pennies From Heaven
Satin Doll **
Shadow Of Your Smile
Skylark
Softly as In A Morning Sunrise
Someone To Watch Over Me

Star Eyes
Stardust
Stella By Starlight
Stomping At The Savoy
Stormy Weather
Summertime **
Sunny **
Sweet Georgia Brown
Tangerine
Tea for Two
Tenderly
There Will Never Be Another You
These Foolish Things
Wave
Way You Look Tonight
What Is This Thing Called Love?
When The Saints Go Marching In **
When Sunny Gets Blue
Willow Weep For Me
You Are My Sunshine

**Jazz Standards**

Mercy, Mercy, Mercy *
Milestones
Moanin *
Moments Notice
Monks Mood
My Little Suede Shoes *
Naima
Nefertiti
Night In Tunisia
Oleo
Ornithology
Perdido **
Preacher
Prelude To A Kiss
Rhythm-A-Ning
Robbin's Nest
Round Midnight
Scrapple From The Apple
Shiny Stockings
Sidewinder
Sister Sadie
So What?
Song For My Father
Solar
Sophisticated Lady
St. Thomas *
Stolen Moments
Sugar
Take Five *
Take The "A" Train **

Tune Up
Well You Needn't
Work Song *
Yardbird Suite

## Jazz Blues

Billie's Bounce
Blue Monk **
C Jam Blues **
Cool Blues
Cousin Mary
Jumping With Symphony Sid *
Mr. P.C. *
Night Train
Now's The Time **
Red Top
Some Other Blues
Sonnymoon For Two *
Straight No Chaser
Tenor Madness
Things Ain't What They Used To Be *
Watermelon Man **

# JAZZ THEORY & IMPROVISATION

Pete Thomas, Music producer, composer, saxophone





## READING LIST

This is by no means a comprehensive list. These are just a few of the books I recommend

### Books

| | |
|---|---|
| New Real Book vols 1, 2, 3 (C, Bb, Eb) | Chuck Sher |
| Charlie Parker Omnibook | Charlie Parker |
| How To Listen To Jazz | Jerry Coker |
| Jazz Piano Voicings (re: Aebersold vol 1) | Jamey Aebersold |
| The Jazz Theory Book | Mark Levine |
| Jazz Theory Workbook | Boling |
| Coltrane: A Player's Guide To His Harmony | Weiskopf & Ricker |
| Jazz Styles: History And Analysis | Mark Gridley |
| Jazz Arranging and Performance Practice | Paul Rinzler |
| A Creative Approach to Jazz Piano Harmony | Bill Dobbins |
| The Jazz Piano Book | Mark Levine |
| The Improvisers Bass Method | Chuck Sher |
| Not The Boring Stuff (flute) 2 copies | Mike Mower |
| John Coltrane Solos | David Demsey |
| Stan Getz Solos | Greg Fishman |
| Jazz Harmony | Andy Jaffe |
| Lester Young Solos | Lester Young |
| The Art of Jazz Trumpet | John McNeil |
| 28 Modern Jazz Trumpet Solos | Ken Slone |
| Repository Of Scales | Yusef Lateef |
| Patterns For Improvisation | Oliver Nelson |

| | |
|---|---|
| The Ultimate Jazz Fake Book vols 1-3 | Herb Wong |
| The World's Greatest Fake Book | Chuck Sher |
| Salsa Session | Birger Sulsbruck |
| Samba session | Nicolai Glahder |
| Worlds Greatest Fake Book | Chuck Sher |
| The Ultimate Jazz Fake Book | Herb Wong |

**Playalong CDs:**

| | |
|---|---|
| Alfred Mastertracks - Jazz (playalong CD) * | |
| How to play Jazz and Improvise (vol 1) * | Jamey Aebersold |
| Nothin' But Blues (vol 2) | Jamey Aebersold |
| All Bird (Charlie Parker) (vol 6) | Jamey Aebersold |
| Miles Davis (vol 7) | Jamey Aebersold |
| Favorite Standards (vol 22) | Jamey Aebersold |
| Learn to Improvise Jazz (vol 24) * | Jamey Aebersold |
| John Coltrane (vol 27) | Jamey Aebersold |
| Major & Minor (vol 24) | Jamey Aebersold |
| All Time Standards (vol 25) | Jamey Aebersold |
| Maiden Voyage (Herbie Hancock) | Jamey Aebersold |
| Piano Voicings (vol 1) | Jamey Aebersold |
| Sugar (vol 49) | Jamey Aebersold |
| Piano Voicings (vol 54) * | Jamey Aebersold |
| Thelonius Monk (vol 56) | Jamey Aebersold |

***Videos:***

| | |
|---|---|
| Contemporary Rhythm Section - complete (video) | Houghton, Warrington, Viapiano, Ranier |
| Contemporary Rhythm Section - bass | Houghton, Warrington, Viapiano, Ranier |
| Contemporary Rhythm Section - Drums | Houghton, Warrington, Viapiano, Ranier |
| Contemporary Rhythm Section - Guitar | Houghton, Warrington, Viapiano, Ranier |
| Contemporary Rhythm Section - Keyboards | Houghton, Warrington, Viapiano, Ranier |

| | |
|---|---|
| Dr. John Teaches New Orleans Piano (video) | Dr. John |