

# Tips on harmonising a jazz lead sheet

## for Faculty of Music, University of Oxford admissions

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You'll be given a jazz lead sheet and your task is to transform it into a playable piece for piano. You'll be keeping the melody but adding chords and bass parts based on the chord symbols provided.

### BASIC JAZZ HARMONY

The first thing is to know the seventh chords of the major and minor scales. We might also think about ninths too but seventh chords are really the 'bread and butter' of jazz, where classical music works more with the basic triads. Only the 20<sup>th</sup> century did it become common for 9<sup>th</sup>, 11<sup>th</sup> and 13<sup>th</sup> chords to be used in a more 'classical' context by composers like Debussy and Ravel.

#### Chords of the major scale

**C major triads**

C      Dm      Em      F      G      Am      Bdim  
I      ii      iii      IV      V      vii      vii°

**C major triads with sevenths**

Cmaj7      Dmin7      Emin7      Fmaj7      G7      Am7      Bmin7b5  
CΔ      FΔ      Bhalf-dim7      Bø

You'll note that 'major 7' can be replaced by the special symbol 'Δ' and the 'half diminished 7' chord (AKA minor 7 flat 5) can have the 'ø' symbol. The way we number chords is the same as in classical harmony: Roman numerals in upper case for major chords, lower case for minor. So in C, for example:

C major 7 = Imaj7

D minor 7 = iim7

G dominant 7 = V7

#### Chords of the minor scale (natural, harmonic minor, and melodic minor)

The chords of minor scales are a bit more complex but for this exercise we'll keep it as simple as possible. Firstly, let's look at the chords of the natural minor scale:

**C natural minor triads**

**C natural minor triads with sevenths**

These are, of course, the same chords as the C major scale but starting from the A minor chord. As in classical harmony, however, we tend to make the minor V chord (here an E minor 7) a dominant seventh as it moves back to the I chord more successfully. That's not to say you never use the minor V chord though, it's just less common.

You might be aware already that the practice of making the V chord in a minor context a major chord (with the added seventh making it a V7 chord) comes through thinking not of the natural minor scale but the **harmonic minor** and the **melodic minor** scales. In jazz, *these* are our basic minor scales and we treat them as two separate scales. We don't follow the classical practice of the harmonic minor scale ascending and the melodic minor descending. They are very much their own things – though in soloing or writing melodies we might switch from one to the other for their respective 'sounds'. Take a look below for the triads and the added 7<sup>th</sup>. You don't really need to worry about them for this exercise but it's good to be aware of them:

**C harmonic minor**

**C harmonic minor triads with sevenths**

**C melodic minor**

**C melodic minor triads with sevenths**

### Chord construction

The table below shows how jazz chords are constructed. It looks scary – not so much when you realised the logic behind it – but we'll only need a few of the chords for this task anyway. The most

important chords are the: **major 7**, **minor 7**, **dominant 7**, **minor 7b5** (AKA half-diminished), and **diminished 7**. You might also come across a '**7#5**' (AKA '**augmented seventh**' or '**altered**' chord). Note that 'lead sheets' as found in the 'Real Book' are generally the simplest a song's harmony and melody can be put across and that the more complex sounding and looking chords are simply build atop of these foundational chords. You might come across, or choose to use, the extensions like 9<sup>th</sup>, 11<sup>th</sup>, 13<sup>th</sup> but these might just be for: a) colouristic reasons; b) a result of the melody note being one of these scale tones. Some quick points to remember before we move on:

- Remember that Dominant 7<sup>th</sup> chords have a flat-7<sup>th</sup> whilst Major 7<sup>th</sup> have natural-7<sup>th</sup>.

• 'slash chords' like 'Gm/B' may arise. This means a G minor triad with a Bb in the bass. In this instance, yes, simply Gm in first inversion. However, it can refer to something more interesting like 'C/D' which means a C major triad with a D in the bass.

Chord Type	Chord Name	Interval Formula	Chord Notes
<b>Major</b>			
Major (triad)	C, Cmaj, CM	1-3-5	C-E-G
Major 6th	Cmaj, CM6, C6	1-3-5-6	C-E-G-A
Major 6/9	Cmaj6/9, C6/9	1-3-5-6-9	C-E-G-A-D
Major 7th	Cmaj7, CM7	1-3-5-7	C-E-G-B
Major 9th	Cmaj9, CM9	1-3-5-7-9	C-E-G-B-D
Major 11th	Cmaj11, CM11	1-3-5-7-9-11	C-E-G-B-D-F
Major 13th	Cmaj13, CM13	1-3-5-7-9-11-13	C-E-G-B-D-F-A
<b>Minor</b>			
Minor (triad)	Cmin, Cm	1-b3-5	C-Eb-G
Minor 6th	Cmin6, Cm6	1-b3-5-6	C-Eb-G-A
Minor 7th	Cmin7, Cm7	1-b3-5-b7	C-Eb-G-Bb
Minor 9th	Cmin9, Cm9	1-b3-5-b7-9	C-Eb-G-Bb-D
Minor 11th	Cmin11, Cm11	1-b3-5-b7-9-11	C-Eb-G-Bb-D-F
Minor 13th	Cmin13, Cm13	1-b3-5-b7-9-11-13	C-Eb-G-Bb-D-F-A
Minor Major 7th	Cm maj7	1-b3-5-7	C-Eb-G-B
<b>Dominant</b>			
Dominant 7	Cdom7, C7	1-3-5-b7	C-E-G-Bb
Dominant 9	Cdom9, C9	1-3-5-b7-9	C-E-G-Bb-D
Dominant 11	Cdom11, C11	1-3-5-b7-9-11	C-E-G-Bb-D-F
Dominant 13	Cdom13, C13	1-3-5-b7-9-11-13	C-E-G-Bb-D-F-A
<b>Diminished</b>			
Diminished	Cdim, C°	1-b3-b5	C-Eb-Gb
Diminished 7	Cdim7, C°7	1-b3-b5-bb7	C-Eb-Gb-A
Half Diminished	Cm7b5, CØ	1-b3-b5-b7	C-Eb-Gb-Bb
<b>Augmented</b>			
Augmented	Caug, C+	1-3-#5	C-E-G#
Augmented 7	Caug7, C7+	1-3-#5-b7	C-E-G#-Bb
<b>Suspended</b>			
Sus 2	Csus2	1-2-5	C-D-G
Sus 4	Csus4	1-4-5	C-F-G
7 Sus 4	C7sus4	1-4-5-b7	C-F-G-Bb
Add9	Cadd9	1-3-5-9	C-E-G-D
Add11	Cadd11	1-3-5-11	C-E-G-F

## Chord Progressions

The most important thing to be able to do with all this chord knowledge is to use it to determine initially the key of the passage in question in your lead sheet. It's critical to realise that while, like classical music, we can talk often about jazz being in *one key overall*, at the bar-by-bar level you'll notice that *jazz modulates very often to other (often related) keys*. This, alongside the predominance of seventh chords, is basically what makes jazz sound like jazz! We'll spot this when we come to analyse a lead sheet in a moment. We'll use this chord information also to tell us the *function* of the chord in the chord progression in front of us. For example, we might see 'Gm7-C7-FΔ' and then be able to recognise this as a ii-V-I in F major.

### The famous '2-5-1' and the cycle of fifths

The chord progression I showed you above is the most common one in jazz: the 2-5-1. It can come in a major flavour like that or in a minor flavour, which would be 'iiø - V7 - i'. Let's look at them in C major and C minor:

Major:	ii	V	I
	Dm7	G7	Cmaj7
Minor:	ii	V	I
	Dø	G7	Cm7

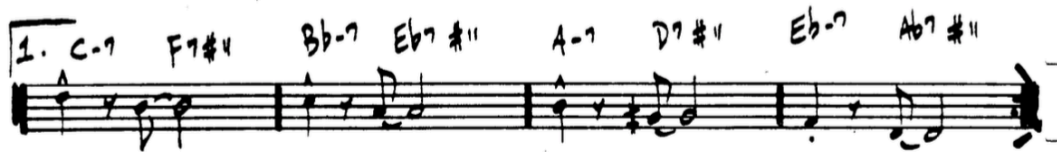
Side note about soloing and writing parts: with the **major 2-5-1 you'll want to think major scale, or better the 'Lydian mode'**, which is a major scale with a #4 (the reason is that the natural 4 can clash where the #4 is – quite magically – a very nice sound); with the **minor 2-5-1 you should think harmonic minor**.

You might recognise this chord progression from classical music and spot that it's like a baroque 'cycle of fifths'. With that in mind we could extend it backwards to make a 'three, six, two, five, one':

iii	vi	ii	V	I
Em7	Am7	Dm7	G7	Cmaj7

Another thing to note is that you'll often just see a 'ii-V' in a piece and where the 'I' should have followed we do get the the expected root note but the chord quality has changed to minor, thus making it the 'ii' chord of another key. Have a look at this example below from Wes Montgomery's

'Four on Six' (ignore the #11 chord extensions as they're just for colour):



You'll notice that the Cm7-F7 is the start of a ii-V-I in Bb major but instead of a Bb major chord arriving we get Bbm7. This Bbm7 finds itself the ii chord of a ii-V-I in Ab major. You'll spot that even *that* ii-V-I doesn't end properly!

The key thing to think is that when you see:

**ii-V or ii-V-I or V-I**, think major 2-5-1

**iiø-V or iiø-V-i or V-i**, think minor 2-5-1 (it's all about that ø)

### Secondary dominants, adding the ii, and diminished 7<sup>th</sup> decoration

Another common feature of jazz music is of placing a dominant seventh chord in front of another chord a fifth up. In doing this we're briefly 'tonicising' the second chord but for the most part it's a matter of decoration, adding colour, and filling some space. This added chord is the 'secondary dominant' and there's a sense that we're temporarily 'borrowing' it from the key of the second chord.

To return to our iii-vi-ii-V-I example from earlier, you'll see that you can do a similar thing. Instead of...

iii	vi	ii	V	I
Em7	Am7	Dm7	G7	Cmaj7

...you could make the chords dominant sevenths. It's quite a funky thing to do. It increases the harmonic tension and was an important innovation for bebop composers like Charlie Parker:

iii	vi	ii	V	I
E7	A7	D7	G7	Cmaj7 (or C7)

We could go further and add *another* chord before that secondary dominant. Which one? Well, let's take a lead from the 'ii-V-I' idea and add the 'ii' chord too:

ii	(Dm <sup>7</sup> )	Em <sup>7(b5)</sup>	F <sup>#</sup> m <sup>7(b5)</sup>	Gm <sup>7</sup>	A <sup>7</sup>	Bm <sup>7(b5)</sup>	
V7	(G <sup>7</sup> )	A <sup>7</sup>	B <sup>7</sup>	C <sup>7</sup>	D <sup>7</sup>	E <sup>7</sup>	
I	Cmaj7	Dmin7	Emin7	Fmaj7	G7	Am7	Bmin7b5

Another way of decorating a chord which again ‘borrows’ from another key is to put a half-diminished 7<sup>th</sup> or (better) a fully diminished 7<sup>th</sup> chord a semitone below the chord you’re headed to. This is something you’ll see a lot in the work of classical composers like Mozart too. It’s another example of a chord having a ‘decorative’ function rather than a ‘modulating’ one. For example, a C#dim7 just before a Dm7 would be nice. In fact, you could run up the chords of the major scale but add a diminished 7 chord between any chords that are separated by a whole tone: Cmaj7, **C#dim7**, Dm7, **D#dim7**, Em7, etc.

### Tritone substitutions

This concept is slightly more advanced than called for by this exercise but it’s worth knowing about. Here we swap a chord with the chord of the same quality a tritone (#4) away. This most often happens as part of a ii-V-I and can either be for decoration **or** to initiate a modulation. There are two main reasons it works: 1) in a ii-V-I we can get chromatic voice leading as Dm7-G7-Cmaj7 becomes Dm7-Db7-Cmaj7; 2) the 3<sup>rd</sup> and 7<sup>th</sup> of the chords (the most important chord tones in jazz) are swapped. For example, the 3<sup>rd</sup> and 7<sup>th</sup> of G7 are B and F, where the 3<sup>rd</sup> and 7<sup>th</sup> of Db7 are F and B. Sometimes just one chord is substituted (usually ii *or* V), sometimes two are (almost always ii *and* V), sometimes the whole ii-V-I is replaced by tritones. You might look back to the ‘iii-vi-ii-V-I’ above and notice that you could easily do a tritone substitution to any of those chords to get smooth movement. You could, however, use the substitution to land on the I or i a tritone away and have changed key. Magic!

### Key point

This all shows us that jazz harmony modulates very often and often very briefly. Most critically, it always **looks forward**. It’s not about how the chord in question relates to the one before it, it’s about **how it sets up the chord in front of it**. In fact, this is basically true of most harmony.

## MAKING A HARMONISATION

### 1. Analysing the lead sheet

Let's take the song 'Autumn Leaves' and analyse the chords. I've notated the tritone substitutions with the shorthand 'TTS'. You'll see that the Eb7 that occurs in the third bar of the penultimate system is simply a tritone substitution of the the A7 that *should* have preceded the Dm7. The same goes with the following bar where a G7 (V of Cmaj) has been replaced by a Db7 as on the previous page. The 'musical' benefit of these substitutions is that there's nice chromatic motion *and* it provides contrast at a possibly dull part of the song. Bear this in mind as it might also be about here in your harmonisation that you might want to spice things up. Overall, it should be clear that Autumn Leaves is constructed almost exclusively of '2-5-1' progressions in G major and E minor (the relative minor, as it happens).

Major ii-V-I  
Am7-D7-G

Minor ii-V-i  
F#m7-B7-Em

(MORLEY MUSIC) **AUTUMN LEAVES** - JOHNNY MERCER

The image shows a handwritten musical score for 'Autumn Leaves' by Johnny Mercer. The score is written in G major (one sharp) and 4/4 time. It consists of eight staves of music. Above the first staff, there are handwritten notes: 'Major ii-V-I Am7-D7-G' and 'Minor ii-V-i F#m7-B7-Em'. The score is annotated with various chord symbols and Roman numerals. Key annotations include:
 

- Staff 1: Chords Cmaj7, G, A7, D7, Gmaj7. Roman numerals IV, II, I are written below the first three measures.
- Staff 2: Chords F#m7 b5, B7, E-. Roman numerals ii, V, I are written below the first three measures.
- Staff 3: Chords F#m7 b5, B7 b9, E-. Roman numerals ii, V, I are written below the first three measures.
- Staff 4: Chords A7, D7, Gmaj7. Roman numerals II, V, I are written below the first three measures.
- Staff 5: Chords G, F#m7 b5, B7 b9, E-, Eb7 (circled and labeled 'TTS'), D7, Db7 (circled and labeled 'TTS'). Roman numerals II, V, I are written below the first three measures.
- Staff 6: Chords Em, Cmaj7, B7 b9, E-. Roman numerals ii, I are written below the first two measures.
- Staff 7: Chords I, Em: V7, i. Roman numerals I, V, i are written below the first three measures.

 The score ends with a double bar line and the word 'FINE'.

By Joseph Kosma, John Mercer and Jacques Prevert

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## 2. Thinking about the chords and piano writing

Let's think about how we write out jazz chords. There are many approaches but here are some classic ways to think. Bear in mind that – just like classical harmony – the fifth is the chord tone we can omit if we have to without losing any of the chord's identity. However, if the 5<sup>th</sup> is lowered (as in the m7b5 chord) or raised (as in the 7#5 chord – which usually leads to a minor i chord), it's a good idea to retain it as it is an important part of the chord's identity:

- Left hand on **root + seventh**, right hand doing **the rest**
- Left hand doing **root + fifth**, right hand doing **the rest**
- Left hand play **root octaves**, right hand doing **the rest**
- Left hand on **root + third**, right hand doing **the rest\***

\*This is best avoided if low on the bass clef. It gets a bit muddy.

Certainly around and above the bass clef's middle line and we're good.

Let's just write the first few chords. Try to spot the construction as discussed above:

Handwritten musical notation for seven chords: Am7, D7, GΔ, CΔ, F#M7b5, B7, and Em7. Each chord is written on a grand staff with fingerings and specific notes indicated.

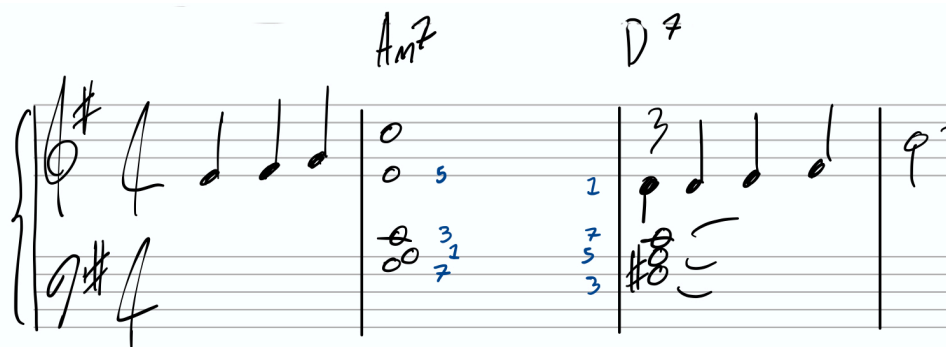
It would be fine even at this point to add the melody and have the chords as 'stabs' in the gaps. Something like this is simple but really quite good way to approach the exercise:

Handwritten musical notation showing a sequence of chords (Am7, D7, GΔ, CΔ) with a melody line and bass line. The chords are written as 'stabs' in the gaps between notes.

Going back to the chords, you might note that the bass notes jump about quite a bit because I've not used any inversions. Everything here is in root position and never do I have the 3<sup>rd</sup>, 5<sup>th</sup> or 7<sup>th</sup> on the bottom. This might be less desirable in classical music, but in jazz it's not really a problem. However, you might still want to smooth the bass movement and play about with inversions. 1<sup>st</sup> and 2<sup>nd</sup>



inversions work wonderfully but even 3<sup>rd</sup> inversions (so the 7<sup>th</sup> at the bottom) can work well in jazz if used sensitively. Take a look at the Am7 in 3<sup>rd</sup> inversion and also D7 in 1<sup>st</sup> inversion creating some smooth voice leading:



Basically, this sort of approach, where you use chords to **punctuate the melody** (almost like a big band chord stab) with idiomatic **syncopations** or harmonise **with the melody**, will get you a long way. Of course, you'll want to mix up these approaches according to the song. Be careful not to just put the chord at the start of every bar/every two beats; you will often want to give it some rhythm – else it just looks like a Bach chorale!!! You might also need to play around with rhythms (of chords as well as melody) and inversions to fill in an otherwise boring bar where, say, the melody is a held note (for example bars 5 and 7). You might find that register is fun to play with and that you want to put the **melody up an octave** or put the **melody in octaves**. This is really up to you. You might **drop the melody down a some octaves** too for a cool first verse! With 'Autumn Leaves' we could have the first A-section low and chordal, then the second A-section (note that it repeats!) with the melody up an octave or in octaves. The B-section could introduce a walking bass, as discussed in a moment? You might also be wise to add some syncopation to the melody in order to make it sound less 'straight'. Try imagine the way you might sing it, would it sound good to come in on an offbeat, or to make something a triplet, or to add some passing notes? Again, it's up to you.

### 3. Walking bass?

Something else you might wish to explore is a walking bass part where you move by a mix of scale tones, chord tones and chromatic neighbour notes. Take this, for example:

Two Feel Am7 D7 (F#m7) G7 C4

lower chromatic neighbour note to D

D is also lower chromatic neighbour to C.

This is a quite basic attempt but you'll find the walking bass suggesting a '2-feel' where we have a bass note every two beats instead of 'four to a bar'. It has either chord tones or chromatic neighbour notes that usher in the next chord's root note, like the C# in bar one which slips up to the D. There are rules about what works but you can absolutely trust your ears to walk the steps and leaps between root notes. If you were doing more a '4 to a bar' walking bass you'd likely be able to use more stepwise scale tones to very much 'walk' between each root note. It's worth saying also that almost all of the time you'll want to **land on the root note**. It's okay to land on the third but it happens less frequently and for this exercise I'd play it safe.

### 4. Planning your harmonisation

Now that you have a sense of some different textures and approaches, it's a good idea to roughly sketch the form your harmonisation will take. For example, might the first A-section be the basic melody with a modest amount of chord work where you add in secondary dominant chords, the repeat of the A-section be more rhythmic with a walking bass line, the B section be higher and more busy with chords and then the final A-section be quite quiet again? Really, it could be many things but you should try to show us what you can do and prioritise musicality and compositional logic. Make sure too that it's nice to play on the piano. It's very important also not to overcomplicate things and write something that looks more like a Bach fugue! Clarity and directness is critical.

## 5. Do a lead sheet!

For inspiration you might look at the piano playing of Wynton Kelly and the guitar of Joe Pass:

There Will Never Be Another You

<https://www.youtube.com/watch?v=mvDkkGI6BgU>

Autumn Leaves

<https://www.youtube.com/watch?v=mn89BXgcONg>

All The Things You Are

<https://www.youtube.com/watch?v=Mn0INQD2Bhg>

Some pieces you might want to practice with, as well as the above, are:

Fly Me to the Moon

Satin Doll

Blue Bossa

Just Friends

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