COLTRANE'S SUBSTITUTION TUNES

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INTRODUCTION

On two groundbreaking albums, *Blue Train* (1957) and *Giant Steps* (1960), John Coltrane presented a group of original tunes that stretched to breaking point the possibilities of functional harmony. Shortly after these albums he began increasingly to turn his back on the traditional use of chord changes.

Of the 11 tunes on these two albums there is only one standard: *I'm Old Fashioned*. I find that rather ironic. The rest are originals, including a large number of blues and blues-like numbers.

The landmark tunes are *Moment's Notice*, *Lazy Bird*, *Giant Steps*, *Countdown* and *Naima*. The beautiful ballad *Naima* is an exercise in extended pedal-point, most probably much influenced by the modal approach of Miles' *Kind of Blue* session. The others are sometimes referred to collectively as Coltrane's "substitution tunes". It can be very tricky to understand precisely what's going on harmonically with them. This article is intended to help you understand what the hell's happening in these tunes.

These revolutionary compositions are the direct result of Coltrane's exhaustive exploration of harmonic theory. He had studied harmony at Granoff, but around this time he had also spent an extensive period studying and playing with Thelonius Monk (culminating in a marathon residency at New York's Five Spot cafe). Monk was an extremely detailed and advanced harmonic thinker and his influence on Coltrane during this period can't be discounted. Influence aside, though, the harmonic discoveries unleashed on these two albums surely belong to Coltrane alone.

All of these tunes are primarily concerned with harmony – that is to say, the chord changes are what's compositionally most important. It is notable that Coltrane's instinct as a composer directed him towards balance – since the chord changes are so unusual and distinctive it makes perfect sense for the melodies to be secondary to the harmony. Anyway, we're not going to look at the melodies, just the harmony.

Disclaimer 1: There are many different ways of analysing harmony. What follows is how I have personally managed to make sense of these tunes. I'm not laying down holy writ and I certainly can't claim any insight into Coltrane's actual thought processes. I do, however, think that there are some interesting observations to be made by looking at these tunes as a group. There is a thread running through them – a continuity of purpose.

Disclaimer 2: I'm preoccupied here solely with the basic harmonic motion. I won't bother to note where a II chord might best be played as half-diminished or Lydian dominant, a V as altered or Lydian dominant, a I as Lydian, and so forth. The derivation of the basic progressions is the important thing.

MOMENT'S NOTICE (on Blue Train)
Cadences-a-go-go

Apparently, trombonist Curtis Fuller commented on the *Blue Train* recording session that he couldn't be expected just to blow over these changes “at a moment's notice”. A glance at the lead sheet makes this legend about how the tune got its name seem highly plausible.

The key to unlocking this harmony is to understand how cadences are extended and embellished. These techniques were all tried and tested harmonic resources, used by classical and popular-song composers long before Coltrane got his hands on them.

Extending Cadences

The common diatonic cadences in jazz are as follows (#IV qualifies as an honorary diatonic tone in this context):

II-V-I
III-VI-II-V-I
#IV-VII-III-VI-II-V-I

We can *extend* a cadence by condensing chords into half the space and adding preceding II-Vs. For instance, to extend:

| Dm7 | G7 | CM | / |

we crunch up the II-V into the second bar and add the III-VI in the first:

| Em7 A7 | Dm7 G7 | CM | / |

Embellishing Cadences

We can also *embellish* a cadence by preceding the II-V with another II-V a semitone above or below it. Starting with:

| Dm7 | G7 | CM | / |

we crunch the II-V into the second bar and add the embellishment II-V in the first bar:

| Ebm7 Ab7 | Dm7 G7 | CM | / |
| Dbm7 Gb7 | Dm7 G7 | CM | / |

There are other options for the embellishment II-V (a tone below, a minor 3rd away, a tritone away) and we can also *interrupt* the II-V-I cadence by crunching the starting II-V into the first bar and putting the embellishment in the second bar. In this case, the embellishment II-V acts as a temporary interruption in the movement from the real V to I.

There are even possibilities for sandwiching the embellishment II-V *in between* the true II and V chords.

Benny Golson's *Stablemates* makes very deliberate use of semitonal embellishment and is proposed by some people as a probable influence on this tune. I don’t know whether this was ever directly acknowledged, but *Stablemates* is certainly a tune Coltrane knew. The influence may even have been subconscious.

Moment's Notice

Let's begin with what we can propose as the skeleton structure of *Moment's Notice* (we'll ignore the bars marked X for now):

‖:	Fm7	Bb7	EbM	X
|	Ebm7	Ab7	DbM	X
|	Bbm7	Eb7	AbM	X
|1st)	Gm7	C7	Fm7	Bb7 :‖
|2nd)	Fm7	Bb7	EbM	X ‖

I'm sure Curtis wouldn't have had any trouble blowing over these changes. We have two II-V-Is descending by tone, then there's a II-V-I to the IV of the key, then an extended turnaround on the first-time repeat and a final II-V-I coming home on the second repeat. Perfectly straightforward traditional harmonic motion. Could be the changes to a standard (a pretty ordinary one, at that).

The first thing we do is take the first two four-bar phrases and embellish the cadences by adding a chromatic II-V (a semitone below) in front of both:

‖:	Em7 A7	Fm7 Bb7	EbM	X
|	Dm7 G7	Ebm7 Ab7	DbM	X

Then we take the third four-bar phrase and extend the cadence by adding a III-VI in front of the II-V:

|	Cm7 F7	Bb7 Eb7	AbM	X

Things are starting to take shape. We now have two chromatic cadences followed by a diatonic cadence, which provides a bit of contrast (relief, if you like). At this stage, we're harmonically implying a miniature AAB structure in the way we treat the cadences.

What Coltrane does next is to extend this miniature structure to AABA by adapting the fourth four-bar phrase (the first-time repeat as I've notated it here) so that it resembles the first two phrases.

He shunts the III-VI and the II-V to the beginning and end of the four-bar section, making room in the middle for the II-V-I necessary to mimic the semitonally embellished structure of the first two four-bar phrases. If we ignore the last bar, this is now the same structure as we saw in the first two phrases, just in a different key:

|1st)	Gm7 C7	Abm7 Db7	GbM	Fm7 Bb7 :‖

This fourth four-bar phrase has now become a (very) interrupted cadence.

The second ending phrase he just extends by adding a III-VI in front:

|2nd)	Gm7 C7	Fm7 Bb7	EbM	X ‖

And we're almost there. All we need to do now is fill in the Xs:

‖:	Em7 A7	Fm7 Bb7	EbM	X
|	Dm7 G7	Ebm7 Ab7	DbM	X
|	Cm7 F7	Bb7 Eb7	AbM	X
|1st)	Gm7 C7	Abm7 Db7	GbM	Fm7 Bb7 :‖
|2nd)	Gm7 C7	Fm7 Bb7	EbM	X ‖

These points in the harmony are not functionally crucial and there are lots of different ways we could fill these spots. We could even just leave them blank, but this tune is all about elaborating cadences, so why waste these opportunities? Therefore:

1. Putting Abm7 Db7 into bar 4 makes sense, because we are then preceding the following Dm7 G7 with its tritone substitution – a common embellishment.

2. Putting Dm7 G7 into bar 8 is logical because it adds a II-V to the Cm7 that follows – in fact it extends the existing III-VI-II-V-I in Ab (bars 9-11) into the full #IV-VII-III-VI-II-V-I.

3. Putting Abm7 Db7 into bar 12 is logical because it forms another chromatically embellished cadence – this time it's a II-V a semitone *above* the Gm7 C7 that follows. It also fits nicely by *minorising* the AbM chord that it follows.

(We'll look at the final X a bit later on.)

We could provide further justification for these additions by noting that the real harmonic surprise of this tune comes in the interrupted cadence on line four. By using the II-V of that cadence (Abm7 Db7) twice in two different embellishment approaches before we get there, we're subtly hinting at what is to come at this surprise point.

So now we have the full changes to *Moment's Notice*:

‖: Em7 A7	Fm7 Bb7	EbM	Abm7 Db7
Dm7 G7	Ebm7 Ab7	DbM	Dm7 G7
Cm7 F7	Bb7 Eb7	AbM	Abm7 Db7
1st) Gm7 C7	Abm7 Db7	GbM	Fm7 Bb7 :‖
2nd) Gm7 C7	Fm7 Bb7	EbM	X ‖

Almost there. After all that cadential leaping about, Coltrane delays the arrival of the final EbM using an extended pedal section on the dominant Bb7. This has the effect of clearly affirming the identity of the home key after all the foregoing chromatic motion.

Moment's Notice, then, is an exhaustive exploration of just about every possibility for elaborating cadences in traditional II-V-I motion. In a single tune, which makes it one hell of an achievement.

LAZY BIRD (on Blue Train)
One giant step…

This tune takes its defining concept from Tadd Dameron's *Lady Bird*. The whole point of *Lady Bird* is that, both in the tune and the turnaround, there is an unexpected modulation down a major 3rd. This was an unusual harmonic twist at the time – although motion by major 3rds does occur in the bridge of the standard *Have You Met Miss Jones*.

Lady Bird

Let's start with this utterly unremarkable and harmless piece of Tin Pan Alley harmony:

||	CM	/	Dm7	G7	
|	CM	/	Gm7	C7	
|	FM	/	Am7	D7	
|	Dm7	G7	CM	A7	Dm7	G7	||

Again, could be a standard.

First, we change the II-V in bars 3-4 – we'll use a substitution known as a "backdoor" II-V, which is a bluesy cadence on IV-bVII going back to I:

||	CM	/	Fm7	Bb7	|

Now we'll do the same thing (another "backdoor" II-V but this time going to the IV chord – F) in bars 7-8:

|	CM	/	Bbm7	Eb7	|

but instead of going to the expected F, we'll call the bluff, and go instead where Eb7 is "supposed to" go – and there we have it, the surprise modulation:

|	AbM	/	Am7	D7	|

Now let's twist the turnaround (bars 15-16) by using tritone subs on everything except the C chord:

| CM	Eb7	| Abm7	Db7	||

and switch the Ab chord quality to major. There you have it – the same modulation that appears in the tune is now momentarily implied in the turnaround as well. This is known as a "Tadd Dameron turnaround", by the way, and these days it's often substituted in on *any* tune. Another common variation has *all four* chords changed to majors. Listen out for it.

So the full changes to *Lady Bird* are:

||	CM	/	Fm7	Bb7	|
|	CM	/	Bbm7	Eb7	|
|	AbM	/	Am7	D7	|
|	Dm7	G7	CM	Eb7	AbM	Db7	||

Lazy Bird

The A section of Coltrane's *Lazy Bird* is really just one big massive tease. The whole thing is a great big cadence in G, extended and altered in order to detour at Eb along the way – giving the same downward major 3rd modulation as in *Lady Bird*. Starting with this:

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||      X      |      X      |      Fm7     |      Bb7     |
|      EbM     |      X      |      GM      |      X       ||
```

We're in the key of G. Bars 3-4 are a "backdoor" II-V to the IV chord of the key, C – but they go instead where they're "supposed to", to Eb, giving the surprise modulation.

But remember that Coltrane is very concerned with cadences at this point in his development. He goes further – he decides to sandwich the whole trick inside a great big cadence. The stages of development might have gone something like this. Put in a II-V up at the front:

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||      Am7    |      D7     |      Fm7     |      Bb7     |
|      EbM     |      X      |    GM        |      X       ||
```

Since "backdoor" II-Vs are a theme, why not embellish the cadence in bars 1-2 by adding the "backdoor" II-V *of G* (this will flow nicely into the Fm7 Bb7 that follows):

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||  Am7  D7    |  Cm7   F7   |      Fm7     |      Bb7     |
|      EbM     |      X      |    GM        |      X       ||
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Then "overrun" the II-V-I in Eb (bars 3-5) to *its* IV – Ab7 – (a very common motion) in bar 6:

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||  Am7  D7    |  Cm7   F7   |      Fm7     |      Bb7     |
|      EbM     |      Ab7    |      GM      |      X       ||
```

and use a full II-V tritone substitution on that bar (oh, and add a little turnaround to the top chord in the final bar):

```
||  Am7  D7    |  Cm7   F7   |      Fm7     |      Bb7     |
|      EbM     |  Am7   D7   |      GM      |  Bm7   E7    ||
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There is nothing very remarkable about the bridge of *Lazy Bird* – two II-V-Is descending by tone, landing on the home key. Again, this is a bit of simplicity to contrast with all the previous hopping about. By the way, this is the same as the bridge to *Lover Man*.

Note though, that Coltrane's preoccupation with cadential expansions is still at work. The final bar of each four-bar phrase contains a semitonal embellishment of the II-V that follows:

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||      Bm7    |      E7     |      AM      |  Bbm7  Eb7   |
|      Am7     |      D7     |      GM      |  Abm7  Db7   ||
||  Am7  D7    |
```

The full changes to *Lazy Bird*, then, are:

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||:  Am7  D7    |  Cm7   F7   |      Fm7     |      Bb7     |
|      EbM     |  Am7   D7   |    GM        |  Bm7   E7    :||
||      Bm7    |      E7     |      AM      |  Bbm7  Eb7   |
|      Am7     |      D7     |      GM      |  Abm7  Db7   ||
||  Am7  D7    |  Cm7   F7   |      Fm7     |      Bb7     |
|      EbM     |  Am7   D7   |    GM        |  Bm7   E7    ||
```

So in this tune, Coltrane has explored Tadd Dameron's way of modulating down a major 3rd by use of the "backdoor" II-V. Just as significantly, he's found a way of getting back up again via tritone substitution… He's found a way of including major 3rd motion within a cadence. Remember bars 5-7 of this tune. We'll see them again shortly.

GIANT STEPS (on Giant Steps)
Splitting the octave

There are lots of different ways of analysing *Giant Steps*. No method is any more right than any other. Here's one way of looking at the tune.

From his *Lazy Bird* experience, Coltrane has arrived at the notion of modulating by a major 3rd. If we can it once, why not do it several times? Actually, you can only do it three times in sequence then you repeat yourself, because you're splitting the octave into three equal parts by moving in major 3rds. A repeating structure – and if you hadn't already guessed it, Coltrane was really quite taken with structure...

Remember how the Tadd Dameron turnaround implies a temporary modulation down a major 3rd? Let's see how this type of turnaround looks in G, Eb and B:

| GM Bb7 | EbM Ab7 |

| EbM F#7 | BM E7 |

| BM D7 | GM C7 |

We can interrupt these turnarounds and combine them, by treating the first chord of each second bar as the first chord of a brand new turnaround – in practice, this just amounts to reading down the columns instead of across:

| GM Bb7 | EbM F#7 | BM D7 | GM etc

A sort of "Tadd Dame-Tadd Dame-Tadd Dame…" turnaround, if you like.

Coltrane took this repeating sequence and ordered it in such a way that it pauses momentarily on bar 3, then in bar 4 backtracks upwards (by using the same structure we'll find in the second half of the tune):

| BM D7 | GM Bb7 | EbM | Am7 D7 |
| GM X |

He then resumes the sequence from this different point and does the same pause and backtrack manoeuvre on bars 7-8 to lead into the final eight bars (which we'll look at next):

| GM Bb7 | EbM F#7 | BM | Fm7 Bb7 |
| EbM |

(of course, this means that bars 5-8 are the same as bars-1-4, transposed down a major 3rd.)

So the first half of the tune moves key centres down by major 3rds. The second half creatively balances this by moving *up* by major 3rds. So how are we going to do that?

There's a classic chord progression of II-V-Is that descends by whole step – many popular tunes are based on it. Coltrane himself made use of it in the first and second eight bars of *Moment's Notice*, as well as the bridge of *Lazy Bird*:

Fm7 Bb7 EbM
Ebm7 Ab7 DbM
C#m7 F#7 BM
Bm7 E7 AM etc

(don't be thrown by the fact that we cross the flat-sharp "dateline")

Let's perform a complete tritone substitution on *every other* II-V-I:

Fm7 Bb7 EbM
Am7 D7 GM
C#m7 F#7 BM
Fm7 Bb7 EbM etc

We're now moving keys upwards by major 3rds, and we repeat ourselves every three times. Treat the II-Vs as pickups to the start of a line, and this is the structure of the final 8 bars of *Giant Steps* (this produces the same result as bars 5-7 of *Lazy Bird* sequentially in three different keys):

			Fm7 Bb7
EbM	Am7 D7	GM	C#m7 F#7
BM	Fm7 Bb7	EbM	X

To finish up the picture, Coltrane adds a turnaround in the final bar of the whole tune to lead back to the top. And there you have the whole of *Giant Steps*:

|| BM D7	GM Bb7	EbM	Am7 D7
GM Bb7	EbM F#7	BM	Fm7 Bb7
EbM	Am7 D7	GM	C#m7 F#7
BM	Fm7 Bb7	EbM	C#m7 F#7 ||

Note how the key centres move:

|| B down to…	G down to…	Eb	back up to…
G down to…	Eb down to…	B	back up to…
Eb	up … to …	G	up… to…
B	up … to …	Eb	turnaround to… ||

Note also how the general direction of the melody line cleverly mimics the way the key centres are descending and ascending throughout the tune. It may seem silly, but it's a useful exercise to sing the melody along to these words…

Incidentally, don't be fooled by the fact that the tune starts with and turns around to a B chord. If it's in any key at all, *Giant Steps* is actually in Eb – the chord that falls on the second-to-last bar (although, granted, it doesn't spend much time in its home key).

By the way, I don't think Coltrane chose his three keys out of any sadistic desire to punish musicians with the nightmare of playing in B. The whole tune is composed of II-V-Is and V-Is in just three keys. If you think about the possibilities for choosing three equidistant keys, the combination of G, Eb and B is quite possibly the most friendly set…

Oh, and did you notice that *Moment's Notice* is in Eb, *Lazy Bird* goes through G and Eb, and *Giant Steps* goes through B, G and Eb?

COUNTDOWN (on Giant Steps)
Coltrane's killer cadence

Once we're past the analysis stage, the simplest way of looking at *Giant Steps* changes is just to decide that we want to divide the octave into three equal parts:

| CM | AbM | EM | CM |

and simply approach each major chord with its V chord (we do this in the second half of the preceding bar):

| CM Eb7 | AbM B7 | EM G7 | CM |

(Some people find it convenient to think of this root motion as "up a minor 3rd, down a 5th")

If we make the first chord a Dm7, we get a structure which has the look and feel of an elaborated II-V-I cadence and can be played as a substitute for a straight II-V-I in C. Think of it as a II-V-I with the II, V and I chords shoved to either side to make way for the elaboration chords:

| Dm7 | G7 | CM | / |

| Dm7 X | X X | X G7 | CM |

| Dm7 Eb7 | AbM B7 | EM G7 | CM |

Miles Davis wrote a tune called *Tune Up* in the mid-1950s (it's on the Quintet album, *Cookin'*, which Coltrane played on). Oh, and some sources credit the tune to Eddie Vinson – wouldn't be the first or last time Miles's name found its way onto someone else's tune...

Anyway, this is a straightforward blowing vehicle comprising II-V-Is descending by tone, with the final one repeated (with variation):

Em7	A7	DM	/
Dm7	G7	CM	/
Cm7	F7	BbM	/
Em7	F7	BbM	E7

(Don't worry about the Em7 and E7 in the final line – structurally speaking, these chords aren't hugely important.)

Coltrane reharmonised this tune using the above principle – as for the title, well, Miles "tuned up", so Trane "counted down":

Em7 F7	BbM Db7	GbM A7	DM
Dm7 Eb7	AbM B7	EM G7	CM
Cm7 Db7	GbM A7	DM F7	BbM
Em7	F7	BbM	Eb7+9

If you think about it, this tune is a natural candidate for Coltrane-style reharmonisation – recall that the upward motion of *Giant Steps* is derived from a tritone-substituted version of exactly this kind of tune structure.

Note how Coltrane chose to leave the final four bars unaltered (if you discount the chord on the final bar, which isn't structurally terribly significant). He continued to apply his *Giant Steps* principles to lots of different standards, sometimes writing new melodies on the reharmonised changes – the two most well-known examples are *26-2* (based on *Confirmation*) and *Satellite* (based on *How High the Moon*). But he usually allowed a bit of harmonic relief by leaving part of the original harmony unchanged.

He also used these reharmonisation principles on the fly, when soloing over standards and as a basis for interesting motion when playing modally. Many of today's most accomplished players still follow his lead.

Incidentally, on the rarely played coda to *Countdown*, Coltrane moves the harmony boldly and plainly by major 3rds, between D, Gb and Bb. These are exactly the key centres you'd get if you took the first three four-bar phrases of *Tune Up* and performed a complete tritone sub on the whole of the second phrase.

Just in case you were in any doubt as to what the harmonic order of the day was…

SPIRAL(on Giant Steps)
Chromatics and minor

Just a brief note on this one. The structure of this tune is not nearly so clear-cut as the others we've looked at. However, it warrants a minor mention, since the A section harmony is governed by major 3rd motion. We begin in G and descend chromatically to Eb (albeit with a D in the bass – shades of *Green Dolphin Street*), then move into B *minor*, via the V chord F#7.

The second section of the tune plays around with the duality of B minor and D major. I may add a more detailed analysis of this tune at a later point.

A lot of this stuff is contentious, and I'm happy to throw things open to debate. Free to e-mail me with any (preferably constructive) comments at jlyon@opus28.co.uk.

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