# Double Bass and Electric Bass: The Case Study of John Patitucci

*Massimo Cavalli*

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ORIENTADOR: *Prof. Doutor Eduardo José Tavares Lopes*

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# Abstract

The electric bass and double bass are two different instruments sharing a common function: they link harmony with rhythm, especially when talking about jazz music. The capacity of a bassist to fully support an ensemble is something that can be achieved individually playing electric or double bass. However there are some bassists who, despite of the technical differences between these two instruments, choose to play both. Some of these performers are true masters using and switching electric and double bass according to the different musical settings. It is possible to define similarities and differences between the electric and double bass, but is it viable to use similar approaches too? In order to investigate this field, I focus my research on one exemplar player who combines all the qualities needed to both play electric than double bass: John Patitucci, an inspiration for bassists of all generations and a musician who synthesizes all the fundamental characteristics of an ideal bass player. This dissertation is inspired by Patitucci's example and by the urge to fill a gap in the specialized literature concerning the history and application of different left and right hand techniques on the electric and double bass. The main purpose of this study is to create the backbone of a bass program for teaching both instruments using John Patitucci as example. His technical approach on both instruments and his soloing vocabulary are points of departure of this dissertation. I begin my study with the historical origins of Patitucci's techniques ending with the development of exercises created in order to teach his techniques and vocabulary to those who aspire to play electric and double bass.

Keywords: John Patitucci, Double Bass, Electric Bass, Jazz

# Contrabaixo e Baixo Elétrico: O estudo de caso de John Patitucci

## Resumo

Baixo elétrico e contrabaixo, dois instrumentos distintos que partilham uma função comum: a possibilidade de produzir um conjunto de notas capazes de interligar uma grelha harmonia a uma base rítmica, criando uma coesão estética e musical, sobretudo na música jazz. A capacidade de um baixista de conseguir alcançar de forma eficiente esta ligação como sólido suporte para um "ensemble" musical está na base de uma sua eventual afirmação profissional. Há músicos que apesar das diferencias técnicas entre estes dois instrumentos, decidiram tocar ambos; alguns deles conseguiram destacar-se, usando e trocando o baixo elétrico e o contrabaixo para servir melhor diferentes situações musicais. O contrabaixo e baixo elétrico têm características em comum mas ao mesmo tempo diferem por apresentar algumas diferenças técnica substanciais; será por isso possível abordar, explorar e aprender ambos utilizando uma mesma base metodológica? Com o intuito de explorar esta possibilidade direcionei a minha pesquisa para o estudo de um músico que no curso da sua longa carreira consegui grande destaque em quanto baixista elétrico e contrabaixista. John Patitucci é a síntese desta tipologia de músico, sendo uma fonte de inspiração para baixistas de todas as gerações. Esta dissertação é inspirada no seu exemplo e no desejo de colmatar o vazio presente na literatura musical comum aos dois instrumentos sobre a história e aplicação das técnicas da mão esquerda e direita. O foco principal é a criação de uma base sólida para o futuro desenvolvimento de um programa de ensino comum para o baixo eléctrico e o contrabaixo, utilizando o vocabulário técnico e improvisativo de Patitucci como ponto de partida. A dissertação aborda as origens históricas das técnicas utilizadas por Patitucci

desenvolvendo, numa fase sucessiva, exercícios criados com a função de ensinar as suas técnicas aos que desejarem aprofundar a prática do baixo elétrico e do contrabaixo.

Palavras Chave: John Patitucci, Contrabaixo, Baixo Elétrico, Jazz

# Introduction

The objective of this dissertation is to shed light on how one learns and teaches the double and the electric bass. These are two distinct instruments with different histories but with a common primary function: to link harmony with rhythm.

The fundamental characteristics of both the electric and the double bass player are a good sense of rhythm and the capacity to horizontally "spell" harmony[1]. "The bassist is expected to play a series of logical and functional notes which outline the harmony, to make the time feel as good as possible, to listen and react to rhythmic, melodic, and harmonic ideas, all while fully supporting the rest of the group!" (Downes, 2004). This definition of the jazz bass player is interesting because it synthesizes all the qualities of a bassist; the profile should fit to any good bass player. Yet the use of the double bass or the electric bass is normally related to the genre of music performed. There are also technical and logistical reasons regarding the use of one or the other instrument. The electric bass is lighter and easier to transport, and when wired to an amplifier, it can play very loud. The double bass is quite a large instrument and if usually more expensive, more difficult to learn to play and to amplify. However, some professional bassists play both instruments using and switching them according to the different musical settings. These players inspired me and encouraged the development of this study. Another inspiration for this dissertation was the urge to fill the gap in the academic field[2], especially when faced with

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[1] As the electric bass and the double bass are usually instruments that do not play chords, the bass lines are constructed using almost diatonic or chromatic notes and arpeggios. So horizontal definition means to play one note at the time. This term has not to be confused with horizontal and vertical concepts that are used to define the employ of diatonic notes (horizontal) or arpeggios (vertical) as improvisational styles (Berliner, 2009).

[2] At least this is true in Portuguese reality, where there are some universities teaching both electric and double bass. However the student is allowed to achieve his degree only playing one of the two instruments.

the impossibility to aspire to a higher educational degree where the students can learn and play both electric and double bass.

Playing and teaching both instruments myself, I was always intrigued by the mechanics which inspire a musician to learn and study the two. I realized that there is a shortage of literature in this field, as it seems that the tendency of bassists "doubling" on electric and double bass is increasing. For this reason, I decided to focus my research on one exemplar player who combines all the qualities needed to play both electric than double bass. I so chose John Patitucci, who is an inspiration for bassists of all generations and a musician who synthesizes all the fundamental characteristics of a bass player.

The first step in this research was to set and describe all the techniques involved in Patitucci's playing; but it opened a door to several other techniques and methods that I could not ignore. As a consequence, I felt the need to research and compile a database, an organized bibliography about double bass and electric bass, left and right hand techniques.

I also questioned myself about the comparison between the two instruments: what they have and what they do not have in common. Left and right hand techniques especially intrigued me; why the double bass and electric bass fingerings are different. Where do they come from? What do they have in common, and where do they diverge? It is possible to find similar fingerings that work for both? Some of these questions moved me in some directions that were not the primary goal of this dissertation but have shown me different angles from which to approach the teaching and learning of the electric and double bass.

Despite the fact that the two instruments are played in different positions (vertical for the double bass and horizontal for the electric bass), I found some common points.

With both instruments, the "pulse" or rhythm is primarily provided by the right hand, while the lines or notes are chosen by the left hand. So after an introductory chapter which covers a brief historical view on the two instruments, I focus my research on fingering techniques; first on double bass and then on the electric bass.

One problem I encountered was the lack of a standardized glossary of terms and symbols. I tried to find a solution to this obstacle by transcribing (from other sources) and adapting the examples presented in this dissertation using my own glossary and symbols; this standardization should make the reading easier.

The use of the double bass in orchestral settings dates back to the 16th century, so I first analyze and then revise the bibliography for certain traditional methods[3] and schools[4] starting from this period; approaching the oldest and most established schools, the ones primarily used around the world, are the German[5], the Italian and the French. In the same chapter I also discuss certain new methods such those developed by Rabbath, Morton, Wolf and Pedersen. I then revised some of the jazz bibliography about left hand fingering; most of the jazz methods use a German/French left hand fingering technique, so I focus my attention especially on some new tendencies about left hand techniques in jazz teaching field that were not present in "classical" texts.

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[3] From the beginning of the 18th century, the use of methods to learn the orchestral instruments became more frequent. These methods were often designed for several instruments, written by musicians who played several instruments at a reasonable level. Professionals of symphony orchestras rarely dedicated time beyond their practical instruction to write down their instrumental knowledge in form of manuals or method books (Planyavsky, 1998).

[4] Together with the appearance of European Orchestras, local conservatoires were built up. The opening of double bass classes addressed the necessity of reassessing playing standards in the light of 19th century orchestral requirements. Principal players from local orchestras were hired as teachers to build up double bass classes (Petzborn, 2010).

[5] The German school is also known as school of Prague and Vienna. The school of Vienna was formed in communication with Prague, many teachers (like Franz Simandl) and students circulated between the two schools and therefore remained closely related in their methodology (Petzborn, 2010).

Right hand pizzicato playing developed especially within jazz (Turetzky, 1974); this is one of the features that characterizes the jazz double bass playing from orchestral and more bow oriented settings; this issue is focused on in chapter 4. In chapter 5 I revisit the bibliography related to the electric bass left and right hand techniques. The electric bass, as we know it today, is a sixty-five years old instrument, so I review some of the most used techniques looking for new tendencies too.

As main result, the revision of all this bibliography allows me to set some of the more common techniques used by double and electric bassists. In all the chapters there are examples that show the application of the various hand techniques on the instrument[6].

Chapter 6 is focused on the playing and teaching of John Patitucci. I compare some of the techniques analyzed in all the previous chapters, with Patitucci's playing; recognizing and confirming his technical background on left hand (Billé, 1922; Simandl & Sankey, 1968) (Van de Geyn, 2007) and on right hand (Carter, 1977) (Van de Geyn, 2007).

Patitucci's jazz vocabulary is allied to his mastery of both instruments, and my focus here is the first to treat his work and stature in a dissertation. The excerpts were meticulously transcribed: for the first time, articulation, ornamentation, legato, accents and original left and right hand fingerings are preserved and notated precisely on paper. The comparison amongst some musical excerpts[7] played on both instruments by John Patitucci give an idea about his technique and about similarities and differences while playing electric and double bass. Some of these techniques are applied to bass grooves, walking bass lines or solos. All of these highlight and cover some of the improvisational features of his playing.

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6 Applied to double bass, electric bass or both depending to which chapter the example is.

7 Some of the examples are played using the same harmonic progression, as in the case of rhythm changes.

In this way, the techniques discussed are directly applied to the jazz field giving to the student/teacher the possibility to learn some of Patitucci's vocabulary. Linking all the chapters, after a large bibliography revision which focuses on the mechanical problems and their possible solutions regarding fingerings, Patitucci's chapter shows his personal approach in order to apply some of these techniques to his playing. To proceed to a deeper analysis about the application of these techniques in Patitucci's style of playing, I investigate the main inspiration sources of his improvisational vocabulary. Here the application of historical[8] techniques related to electric and double bass meet with the history of jazz improvisation. In fact, Patitucci's improvisational devices embrace a vast vocabulary, from bebop to Coltrane's and McCoy's style.[9]

In the last chapter, I use some of Patitucci's lines (walking bass lines and solos) as starting point to develop exercises to teach and learn Patitucci's jazz vocabulary and hands techniques in both electric and double bass.

Also, I applied some of the various left and right hand techniques analyzed in this dissertation to Patitucci's phrases, maintaining articulation, ornamentation, legato and accents unaltered. In this way, it is possible to prove that articulation, ornamentation, legato and accents are like the fingerprints of a soloist; in fact, keeping all these parameters and changing only left and right hand techniques have as result the maintenance of the soloist's digital impression.

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[8] Historical because related to solid right and left hand postures as already in use during previous generations of classical and/or jazz bass players.

[9] Linear and intervalic improvisation (Weiskopf, 1995)

# Chapter 1

## 1. Double Bass and Electric Bass: a short story

As a member of the violin family, the double bass was born in the 16th century. These instruments were built to sound loud, in contrast to a less assertive sound of the viols (Brun, 2000). Some experts controversially assert that the double bass is a member of the viol family (Henrique, 2007). After the violin family gained a stronger foothold in the orchestral setting, some of the discarded viols were converted and adapted to violin specifications. Initially the double bass was a three stringed instrument and up to the best part of the 18th century it was tuned in fifths (CGDA or GDA for the three string version) and then passed to a fourth tuning (EADG or ADG for the three string version); this change simplified technical execution and improved the tuning accuracy. One of the most important players who helped this process was the Italian virtuoso Domenico Dragonetti. As a bowed instrument there are two main kind of bows that remained in use after almost five centuries of evolution, the German bow, that is played palm up and the French bow, that is played palm down like the violin bow.

### 1.1 Introducing Jazz Double Bass

The double bass was first used in ragtime orchestras played with a bow or by plucking the strings (Kernfeld, 2003). In the early jazz era the tuba played the bass parts; this choice was dictated by the fact that marching brass bands played in the streets and the tuba was more portable and louder than the double bass. The notes played then were normally root and fifth on beat one and three, the tuba player was breathing on beat two and four, the tuba player's problems were endurance and technical agility (Goldsby, 2002). With the double bass it was possible to play more notes and sustain them for more

time without the need to breath, and some players like John Lindsay (with Jelly Roll Morton), Pop Foster (with Luis Russell and Louis Armstrong), Bill Johnson, Wellman Braud (with Duke Ellington) Steve Brown (with the New Orleans Rhythm Kings) and then Milt Hinton began to play some lines in all four beats, which gave the music a forward motion that the tuba could not create. More complex lines were easier to play on double bass and many techniques could be used by the players, including plucking, slapping and bowing. By the mid-1930s, the double bass definitely became the first choice to play bass lines in jazz bands. Before 1940 many musicians played both tuba and double bass trying to increase work options, and the same thing happens nowadays with musicians who can proficiently play double bass and electric bass. The jazz double bass in the early days was normally strung with gut strings and with high action[10], so players could use some techniques that produced greater volume like slap[11].

The development of the instrument as a solo voice became clear with musicians like Jimmy Blanton (Duke Ellington), Leroy *"Slam"* Stewart, who were playing both arco[12] and pizzicato, displaying a highly developed technique and great facility of articulation. Later on the advent of bebop in the early 1940s led to further advances in jazz double bass playing thanks to Oscar Pettiford, Ray Brown, Paul Chambers first and then with Red Callender and Charles Mingus. In the fifties, steel strings and new amplification devices opened new frontiers for the double bass player. In this search, players began to find new accompanying roles and to develop their technical skills as soloists (Kernfeld, 2003). Double jazz players started to use different tunings (Red

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[10] Which means that the bridge was really high and the strings were far away from the fingerboard.

[11] This style is still used today, especially by rockabilly double bass players. The technique consists in pulling the string away from the fingerboard, let it pop back and then slapping the right hand against the fingerboard.

[12] Bow.

Mitchell tuned his bass in fifth, an octave below the cello). Mitchell's option results very interesting because this was the original double bass tuning[13]. Other developments were about left and right hand technique: the classical Simandl left hand position has been abandoned by some players who started to use electric bass fingering that allows musicians to play faster. In the right hand pizzicato style there was a revolution when musicians started to play with two or three fingers that let them produce very fast lines. Some of Bill Evans bass players such as Scott LaFaro, Gary Peacock, Eddie Gomez and later Marc Johnson were very effective in this field and Danish bassist Niels-Henning Ørsted Pedersen was a great example of three fingers right hand technique. The legendary Ron Carter is one of the most recorded bassists of all time; his unique voice on the instrument, great time feel and personal sound made him a key figure in the development of jazz. After the fifties the double bass assumed a major solo status in free and avant-garde styles of jazz, with Dave Holland, Charlie Haden, Jimmy Garrison, Richard Davis, Barre Phillips, Miroslav Vitous, Eberhard Weber among others extended the potentiality of the double bass using harmonics, double stops, percussive methods of producing sounds on strings and body. With the new amplified transducers and effects, a whole new world of possibility has been opened to double bass players. Some of the most acclaimed contemporary names in jazz double bass playing are Stanley Clarke, John Patitucci, Christian McBride, Avishai Cohen. All of them also play the electric bass.

## 1.2 The Electric Bass

In the early days jazz double bass players played without amplification; this is the reason why its percussive function was really important, more than the perfect tuning

[13] Some players observed that this tuning let the instrument sound better because of its construction; in fact the double bass is the only member of the violin family tuned in fourths. During a conversation with the great classical double bass soloist Gary Karr, I was told that the double bass tuned in fifths is richer in harmonics.

between notes (Schroeder, 2011). Double bass harmonic implications were subordinated to its rhythmic function. The double bass is a large instrument, difficult to carry, and hard to play in tune; all these facts created the will to build a more accurate instrument that could be amplified and fretted. In 1951 Leo Fender built the "Fender Precision Bass," which many believed to be the first electric bass built, but this information was not legitimate by historical facts.

In various cultures we can find the presence of instruments that inspired the creation of the modern electric bass, like the Russian balalaika, the Greek bass bouzouki or the Mexican guitarron among others (Blasquiz, 1991). The first instrument we can link to the modern electric bass is the Gibson Mandobass (beginning of the 20th century) that was the largest member of the mandolin family (Roberts, 2001). While some builders were creating large instruments to get a better bass sound, Lloyd Loar, who was a Gibson engineer, had a different idea and used electricity to make small instruments sound louder. In 1924 he built a prototype of a "stick" bass that was quite similar to the modern electric upright[14] bass. The pickup was an electrostatic transducer mounted in a Bakelite box under the bridge. Gibson didn't like the idea, and when the project was rejected, Loar left the company to create the Vivi-Tone, where the product was never developed as well, but the idea to amplify the instrument was there and it was the right one. In 1930 appeared the Regal Bassoguitar, also a kind of electric upright, then the Dobro Resonator Bass and the Vega Electric Bass Viol. The Rickenbacker Electro Bass Viol had the particularity of a metal body and horseshoe-magnet pickup, it could be attached to the top of its amplifier and the endpin-to-amp connection also included the output jack (Roberts, 2001). At the end of the 1930s Gibson made a model called Electric Bass Guitar that was similar to the modern electric bass. It was amplified with a pickup but it was vertically played; in fact it

[14] Upright bass is synonym of double bass. This word is especially used in U.S.A.

had an endpin. Gibson made two of these prototypes; Les Paul's bass player, Wally Kamin, played one of them. All these instruments were still vertically played like a double bass. Paul Tutmarc, a Hawaiian guitar player, teacher and creator of Audiovox, made and produced the first electric bass as we know today, the Model 736 Electronic Bass, solid body horizontally played (Bacon & Moorhouse, 2008). In 1936 Audiovox built electric instruments and Audiovox Model 736 Electronic Bass was one of them; one hundred pieces have been produced but it was ahead of its time and there was no commercial impact. Ten years later Paul's son Bud built the Serenade String Bass that shared almost all the characteristics of the model 736, but it wasn't a success either.

### 1.2.1 The Fender Bass

The *Fender Precision Bass*, wasn't the first electric bass but without doubt it was the one that reached a commercial success and was used by many musicians. It set the standard for all the other electric basses, a synthesis between solid body guitar and double bass. Horizontally played and fretted like a guitar but with four strings tuned in the same octave of double bass, plus it was amplified so the bass lines could be heard better and then improve the support to any musical situation. The standard 34-inch scale was the result of a balance between the solid body guitar and the double bass scales. It is necessary to recite the short history of Leo Fender and his creation.

Clarence Leo Fender was born in 1909 in California, and with his partner George Fullerton, Fender made and produced the first solid body guitar[15], then he created and developed the *Precision Bass* (Blasquiz, 1991).

Fender wasn't a musician, but he was very sensitive to musicians' complaints and suggestions. In late 1940 guitar players needed to play double bass too in order to find more job opportunities as the popular dance bands were forced to downsize during World

[15] The Broadcaster that later became the Telecaster.

War II; these bands were reduced to their essentials. The problem was solved thanks to the creation of an instrument with 20-fret maple neck, bolted to a slab ash body, painted in a pale yellow color, four big-key Kluson tuners and a four pole single coil pickup: the Fender Precision Bass. For guitar players, this was the solution to their problems; now they could easily double guitar with electric bass. The Fender Precision was a lighter instrument tuned like the double bass (or like the four lower guitar strings one octave below) and primarily with frets; thus the name *"precision."*[16] Among the bassists who first used the Fender Precision Bass we find Joel Price (country music bass player) and Roy Johnson (Lionel Hampton Band). Lionel Hampton liked the sound and the volume of the Precision Bass, so when Johnson left the band, his substitute, Monk Montgomery[17], that was a double bass player, had to learn how to play it.

## 1.3 Contemporary Electric Bass Players

As previously mentioned, Monk Montgomery was one of the first electric bass players. There were other players who switched from double bass to electric and were very important for the stylistic and technical development of the instrument. Outstanding for their contributions are Steve Swallow and Bob Cranshaw. Swallow played double bass with Thelonius Monk and his switching from acoustic to electric was a controversial move in his career. His particularity is that he uses a steel plectrum with an extensive use of upstrokes. As Schroeder (2011) recall, Swallow has his own sound and plays in a sophisticated and tasteful manner reflective of the jazz idiom. Bob Cranshaw is best known for his collaboration with jazz legend Sonny Rollins; he switched to electric after a car accident that limited his playing on the double bass. Cranshaw utilizes a sparse

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[16] The 34-inch scale was chosen after various attempts. It nicely fits between the 25½ inches scale of the Telecaster guitar and the 40-42 inches scale length of most upright basses.

[17] Wes Montgomery's brother.

soloing style, more melodic; his approach on electric is the reflex of his style on acoustic. Other important players who were opened to styles other than jazz are Carol Kaye, Jerry Jammott, James Jamerson and Jim Fielder, all of them have countless studio recording credits in the new commercial music business that understands the potential of electric bass. I must also mention Larry Graham (Sly and the Family Stone, Graham Central Station), who was probably the first known electric bass player to use slap bass technique[18] (that is quite different then the one used in the early jazz era). Louis Johnson was also an innovator in slap technique; he is also known for using one of the first active basses in the market, the Music Man Sting Ray bass, that allowed bass and treble clarity and presence due to the powered active pickup. Francis Rocco Prestia is well known for the extended use of sixteenth notes and ghost tones that allow his band, Tower of Power to have an original, powerful sound. Many bass players studied and still study his sound and bass lines.

Jaco Pastorius is one of the most important icons in the short history of electric bass. His life was brief and intense, and his debut solo album, *Jaco Pastorius*, is a sort of bible for electric bass players. He is known to use a strong bebop language, natural and artificial harmonics and unaccompanied melodies. He played with Weather Report, probably the most well known jazz-rock band on the planet; his original *Teen Town* and Josef Zawinul's *Birdland* are landmarks in bass history for the challenging lines Pastorius played. He popularized the Fender jazz Bass fretless and he had a big impact on all the bass player of his generation up to the present day. Marcus Miller is known for playing with Miles Davis in the latter part of the great trumpeter/composer's career. Miller is a

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[18] However the use of the thumb on a low stringed instrument called Ghimbri could be found in Gnawa (also known as Gnaoua), an ancestral traditional folk music from Morocco and Algeria (Hamel, 2008). The slap technique involves hitting the bass strings at the end of the fingerboard with the bony knob of the right hand thumb.

gifted multi-instrumentalist (he plays bass clarinet, piano and electric bass), producer and on electric bass is well known for his personal funk oriented slapping style. Victor Lamonte Wooten is probably, after Jaco Pastorius, one of the most significant musicians to develop electric bass technique. He came to prominence in the early nineties with Bela Fleck and The Flecktones. Wooten revolutionized the technical aspect of bass playing with his "double thump" approach, which utilized the right hand thumb in up and down strokes, like a guitar player alternating pick strokes with the plectrum (Schroeder, 2011) and an extensive use of tapping technique, playing bass lines with his left hand and melodies or chords with his right hand, a technique popularized by guitar player Stanley Jordan. In Wooten debut solo album *A Show of Hand* the listener may think that there are two different instruments being played, instead Wooten is the only player with no overdubbing. Steve Bailey, who's actually the chairman of the bass department at Berklee College of Music is another example of virtuosity on electric bass. He uses a six string fretless bass, playing with three right hand fingers and an extensive use of natural and artificial harmonics using a technique typically used by guitar players. Other important electric jazz-fusion oriented bassists are: Richard Bona, Anthony Jackson[19], Victor Bailey, Alain Caron, Will Lee, Gary Willis, Jimmy Haslip, Michael Manring, Mathew Garrison, Paul Jackson, Dominique di Piazza, Hadrien Ferraud and Dario Deidda. In the rock/pop field, we remember, among others: Paul McCartney (Beatles), Bill Wyman (Rolling Stones), John Entwistle (The Who) John Paul Jones (Led Zeppelin), Geddy Lee (Rush), Chris Squire (Yes), Bootsy Collins, Roger Glover (Deep Purple), Nathan East, Mark King (Level 42), Cliff Burton (Metallica), Flea (Red Hot Chili Peppers) and Les Claypool (Primus).

[19] The first six strings electric bass player.

## 1.4 Mastering electric bass and double bass

Some players are equally skilled on electric bass and double bass; some of them play each one like a distinct instrument and yet they are virtuoso players on both. Because of the different characteristics of the two instruments, today it's quite difficult to find musicians that can play both efficiently; this requires a lot of study and a great capacity to think in different ways. Let's consider the horizontal way of thinking on electric versus the vertical vision on the double bass: different left hand fingering[20], different note attack etc. These musicians are worldwide jazz bass players active today and they are equally renowned virtuosos on both instruments.

Stanley Clarke is probably the first electric bass player emerging as a band leader (Schroeder, 2011). His second album *Stanley Clarke* in 1974 was a landmark assuming the whole potential of both the instruments, and in 1976 his *School Days* opened instrumental music to new public developing and popularizing slap style technique. He was part of Return to Forever band, one of the most revered fusion bands in history. His recent recording and tour with the SMV project (features bass icons Marcus Miller and Victor Wooten) prove that he is still a top player after 40 years of a brilliant career.

Brian Bromberg was born 1960 in Tucson Arizona he started playing the drums and then he switched to double bass at the age fourteen. He played with a large number of jazz icons and he has is own solo career with more then fifteen releases on his name; he is popular for playing tapping technique on both electric bass and double bass, that is quite unusual due to the high action on the double bass and other kinds of advanced techniques that are the trademark of his own style.

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[20] Mostly electric bass players use left hand four-finger system, while double bassists prefer German/French or Italian left hand fingering.

Christian McBride plays also both electric and acoustic bass; he is renowned for his ability in bowing and plucking solos. He was mentored by Ray Brown; both of them worked extensively with fellow bassist John Clayton as a bass trio, touring around the world. McBride played with countless major artists in jazz and pop music. As a solo artist he published several records in his name.

Avishai Cohen is another bassist that is acclaimed for his innovative work that reflects his background. In his early career he was the bassist of the Chick Corea New Trio along with drummer Jeff Ballard. He uses both electric and double bass in his studio work and performances. He has a wide number of influences in his playing, from his Israeli roots, rock, funk and jazz. In recent years Cohen has worked toward establishing his own unique style and voice.

Finally I mention John Patitucci; his playing will be focused in chapter 6. He is a renowned virtuoso on both acoustic and electric bass. I choose to analyze John Patitucci as example of balance between tradition and modernity; in his playing could be found some characteristics of jazz tradition as bebop and more modern features as triad combining. Patitucci's balance between tradition and modernity is also evident in his technical approach on both electric and double bass.

# Chapter 2

## 2 Left Hand Fingering on Double Bass

### 2.1 A short introduction

In order to understand the differences between double bass and electric bass my purpose was to investigate some of the available techniques used to learn and play these two instruments; left hand fingering is one of them.

There are different items that discourage double bass players from playing electric bass and vice versa, one of them is the different use of the left hand fingering. Double bass players normally use a three finger left hand technique while the majority of electric bassists use a left hand fingering that remind the guitar's left hand technique (Figure 1); in fact both electric bass and guitar are fretted, and so it's quite easy to use one finger for each fret.

**Figure 1: left hand position on double bass using 1-2-4 left hand fingering and on the electric bass using one finger for each fret.**

As reported in chapter 1 the electric bass is an instrument that is a hybrid between guitar and double bass, created especially for guitar players who wanted to play bass with

the accuracy and intonation that only a fingerboard with frets could give to them. For this reason the left hand fingering used for the electric bass instrument is basically the same as that used on guitar[21]. The only difference between the two instruments is the length of the strings. The electric bass has a strings length of 80-90 cm while guitar strings are about 65-70 cm; that makes the space between the frets wider in the electric bass and that can be stressful for the left hand muscles.

To demonstrate this idea, in Figure 2 is shown a C major scale in one octave with fingering for a four-string electric bass:

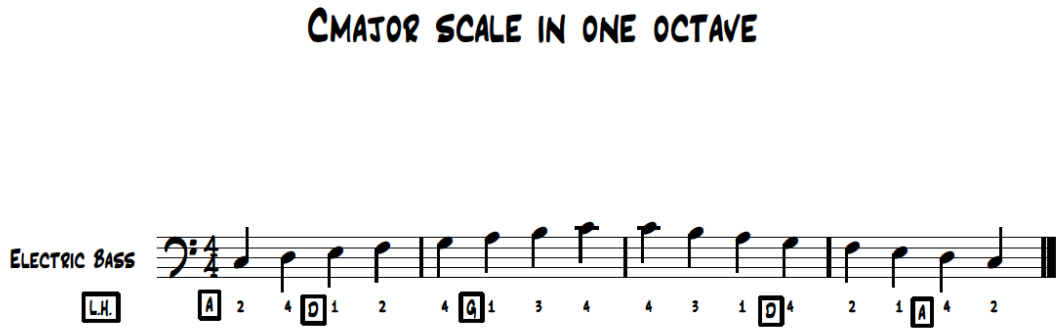


**Figure 2: standard C major scale in one octave with fingering for a four-string electric bass (author's transcription and adaptation[22]).**

With the double bass there are different issues that make the use of this specific technique, referred to here as the four fingers technique, difficult. One of these issues is related to the fact that the double bass doesn't have frets, so it's quite difficult to have a visual and geometrical perspective about notes' positions[23]. Another of this issues is

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21 This topic will be develop in chapter 5.

22 Adaptation is referred to the fact that I'm going to use my standardized glossary in order to allow the reader to compare the different systems using the same signs; each exercise is transcribed from the different methods and uniformed to the same rules that is possible to find in the glossary attachment.

23 A perspective that is present while playing the guitar or the electric bass.

related to the fact that a 3/4 size double bass[24] (that is normally used in jazz music), has a playing length of string (from the nut to the bridge) comprised between 104 and 108 cm (41 and 42,5 inches), so the space betwixt half tones, especially on the lowest part of the instrument, is quite large for a normal left hand wideness. This is one of the historical reasons why it is unusual to play with a four-finger technique on double bass.

In the course of the centuries, to avoid tuning and hand strength problems, different left-hand methods have been created.

## 2.2 Left-Hand Fingering on Double Bass, a Brief History: Problems and Solutions

As Brun (2000) reported, the earliest bassist used thick, uncovered sheep gut strings, with poor intonation so when the string was pressed on the fingerboard, it caused stretches and sharpened the pitch of the notes. The quality of the strings slowly improved, but in 1660 in Bologna "wound strings" were introduced. By 1870 wound strings were being used throughout Europe. In 1930, in France, Pierre Delescluse developed the first complete set of metal strings for double bass, so the instrument became more playable promoting an expanded technique. The double bass was now established as a major virtuoso instrument. During the first half of the 20$^{th}$ century, almost every double bass player used wounded gut strings with very high action that needed a great finger pressure to play a note.

This introduction is meant to emphasize the fact that left hand techniques in double bass history were consequential to the string improvement. There are different

[24] As reported in chapter 1 the double bass has no standard size so it is possible to find 4/4, 7/8, 3/4, 5/8, 2/4 size instruments.

techniques[25] for double bass fingering, and all of them have been developed to help the localization of the note and the intonation.

## 2.3 Brief History of Left Hand Fingering on Double Bass

In the early years double bass player used to wear a glove on the left hand to protect it due to the excessive thickness, tension and high action of the strings. The poor quality of the strings could even cause burns on the fingers during execution. Only few outstanding or rich performers could afford high quality and custom made gut strings. The high tension of strings and high action from the fingerboard required a strong wrist and great grip from all fingers to ensure perfect stopping. The majority of the double bass players were limited to play one note with the index finger and one with the other three in combination. This technique is called "fisticuffs": as an example we can imagine that the player puts his first finger on the E note (on the D string) and the 2nd, 3rd and 4th fingers rest on C (on the A string). This kind of fingering did not allow any kind of virtuosity at all.

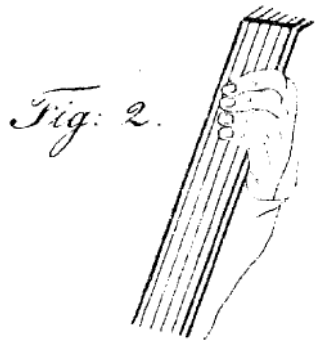


**Figure 3: fisticuffs picture, from F. Froehlich's *Contrabass-Schule* book (1830, p.96).**

[25] Fingering techniques that were explained by great double bass player and teacher in books, becoming then methods and/or schools of teaching as better explained ahead in this chapter.

To be more specific, the "fisticuff" has only two options: the open position played with the first finger or the closed position played with the fourth finger in combination with the second and third finger. The closed position was used for both half step and whole step departing from the first finger to play, as shown in Figure 4 A3, Bb3 and B3[26] (Borém, 2015).

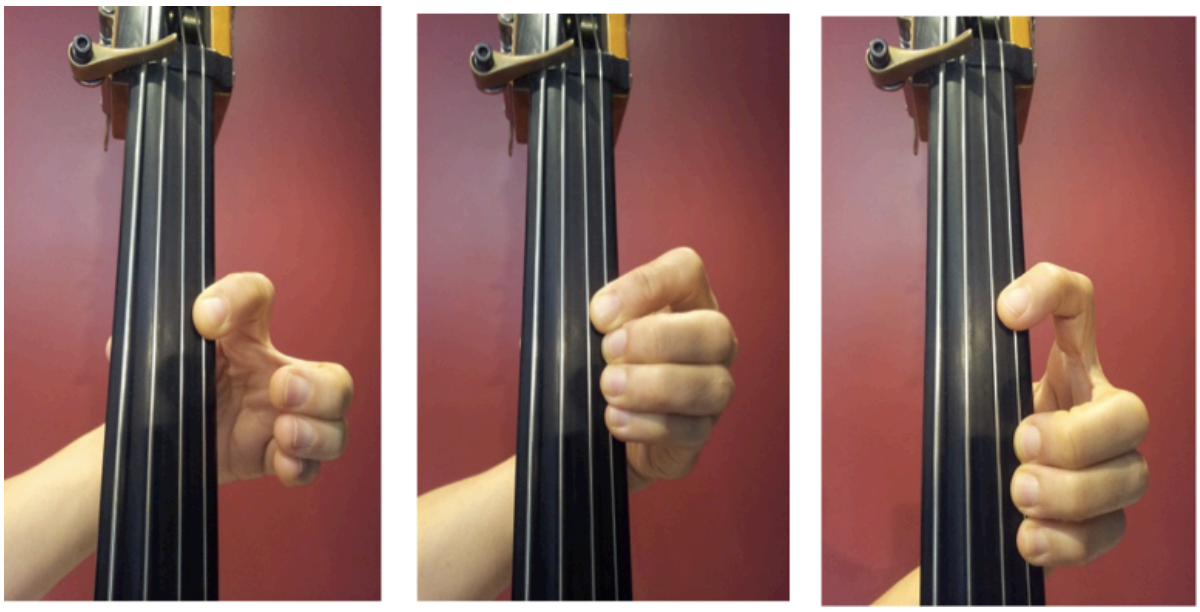

**Figure 4: "fisticuff" fingering, playing A3 using the first finger, Bb3 with the fourth finger (second minor position) and B3 with finger 4 (second major position) from *OJBR- The Online Journal of Bass Research Volume 5 April 2015*.**

The left hand fingering technique depends on many different factors. First of all, every country (Germany and Italy for example) has his own fingering preferences; then we have others considerations, such as the size of the instrument, the number of strings, the skills of the player, the style of the music played.

[26] Since the double bass is a transposing instrument and considering the central C of the piano as C4, the actual pitch when the double bass plays a (written) C4 is a C3. So from now on the notes played on double bass are reported as written.

It seems that the great double bass player and composer, Johannes Matthias Sperger, (1750-1812) used the 1-2-4 fingering technique[27] (index, middle and little finger) for a whole tone in low registers as from the fourth of the open string he used the four finger 1-2-3-4 technique. The Italian virtuoso Domenico Dragonetti (1763-1846) preferred what Wolf (2011) defines as the four-finger system[28] in all the extensions of the instrument, using also the thumb[29] in all the instrument extension. It seems that Dr. C. Nicolai taught Dragonetti´s fingering 1-2-3-4 as explained in Nicolai's article published in 1816 in the famous musical periodical *Allgemeine Musikalische Zeitung titled Spiel auf dem Contrabass*.

Long before that, Bartolomeo Bismantova suggested 1-2-3 fingering in his *Compendio Musicale* (1677) where we can find *regole per suonare il contrabbasso* (rules for playing the double bass). Here as shown in the figure below, the fourth finger is not used.

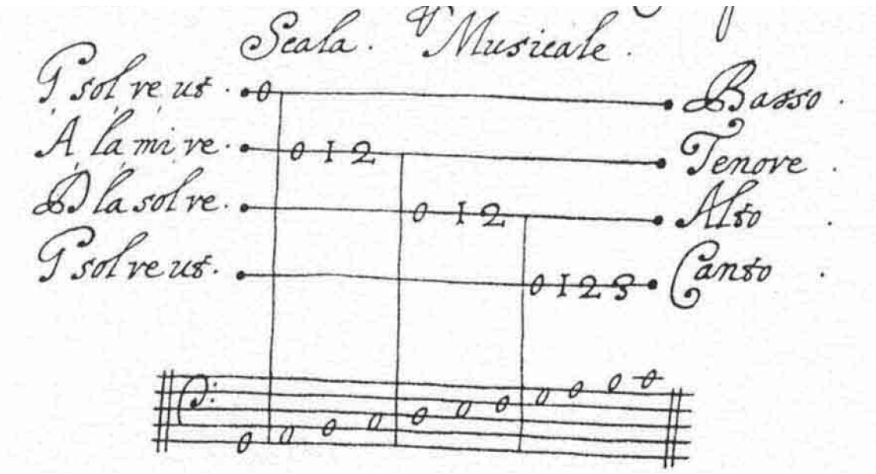


**Figure 5: C major scale starting from G in a four string double bass tuned G-A-D-G, from Bartolomeo Bismantova's *Compendio Musicale* (1677, p.3).**

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[27] Left hand fingers will be numbered as 1=index, 2=middle, 3=annular, 4 little finger.

[28] See chapter 2.5.4. p.65

[29] In lower positions than the traditional thumb register.

Michel Corrette suggested a variation of this fingering in his *Méthode pour apprendre à jouer de la Contrebasse* (1781). Notice that Bismantova suggested the use of index and middle finger for playing two notes with an half tone distance (1-2), closing the scale (B to C) with a passage from middle to annular (2-3) and Corrette used index and annular for the same distance (1-3) but from B to C uses middle to the little finger (2-4), then going on with a 1-3-4 fingering to play D-E-F; that reminds the four-finger system.

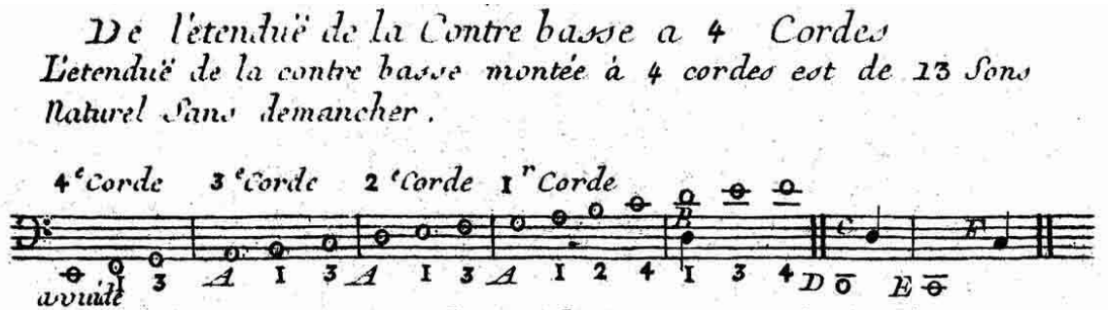


**Figure 6: C major scale starting from E in a four string double bass tuned E-A-D-G, From Michel Corrette's *Méthode pour apprendre à jouer de la Contrebasse* (1781, p.6).**

Wenzel Hause (1764-1874) in his three volumes *Contrabass-Schule* (1807) was the first one to set down a method that explained the use of 1-2-4 fingering omitting the third finger for two half-tones intervals. Friedrich Christoph Franke in his *Anleitung den Contrabass zu spielen* (1820) recommended the 1-2-3-4 system (or four-finger system).

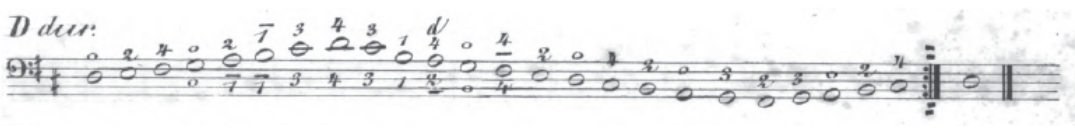


**Figure 7: one octave D major scale in a standard tuned four string double bass, Franke four-finger system from *Anleitung den Contrabass zu spielen* (1820, p.11).**

While in Germany the 1-2-4 fingering technique becomes more established, in Italy the 1-3-4 variant appeared. Bonifazio Asioli was one of the first to describe this system in his *Elementi per il contrabbasso con una nuova maniera di digitare* published in 1823 and the double bass virtuoso Giovanni Bottesini (1821-1889) chose this fingering in his *Metodo di Contrabbasso* (1869).

A few years later (1881), Franz Simandl published the *Neueste Methode des Kontrabass-Spiels* in two volumes, using the 1-2-4 system. In 1922 Isaia Billè (1874-1961) published the first of eight volumes of his *Nuovo metodo per contrabbasso a 4 e a 5 corde* that is still used in the Italian conservatoires.

The last two methods are the most used in these days. Billè's method is the evolution of Giovanni Bottesini and Italo Caimmi schools of teaching and is almost exclusively used in Italy and in few others countries were the Italian school is taught. As explained before Billè teaches the left hand technique that uses 1-3-4 fingering (index, annular and pinky) covering a tone for each position change.

The Simandl's method is currently used as a standard study of double bass technique and left hand fingering in the rest of the world and uses the 1-2-4 left hand fingering (index, middle and pinky) also covering a tone for each position change. Several methods demonstrate personal interpretation by eminent musicians and teachers, evolving from the Simandl technique. For example, the Ludwig Streichter's, the Montag Lajos', Eduard Nanny's, Jean Marc Rollez's methods in classical music.

However Nanny's books *Complete Method for the four and five stringed double bass* (1920) in two volumes needed further analysis, they are very important for several reasons: these books are still very used in France, there are additional positions face to Billè and Simandl books, fingering alterations after the $6^{th}$ position ($10^{th}$ degree) and

Nanny's pedagogical influence inspired some of the most important double bass players of the 20th century (as François Rabbath).

These are the most used and comfortable systems of execution on double bass in any register; the main difference has to do with the use of the 1-2-4 fingering in the Simandl (and Nanny) school and the 1-3-4 one in the Billè system. However the fact that only three notes could be played in each position, a whole tone, especially in fast passages, alerts us to the limits of these methods because of the constant changes of the hand position.

In the 21th century, other methods and school of teaching appeared; they are more concerned with the new challenges of the instrument. François Rabbath's pivot technique allows to play two tone intervals in the same position; some of these new techniques use the electric bass left hand technique[30], like the *Scandinavian double bass technique* (Jimmi Roger Pedersen), the Franke system (*Anleitung den Contrabass zu spielen*, 1820), the Michael Barry Wolf's *Principles of double bass technique* or the *New Dutch School* as great examples.

*The American School of Double Bass* and their teachers use hybrid techniques like the *Triangulation of Fingering Systems for Double Bass* (Thomas B. Gale) and Dr. Mark Morton's books, where the Simandl's method and the four-finger system coexist. In the same register, Eugene Levinson's *The School of agility* demonstrates up to sixteen different positions to play a two octaves scale using hybrid techniques that cover all the possibilities of the instrument.

## 2.4 Double Bass Methods: The Old Schools

The following discussion will introduce some of the most important aspects of these schools. Note that the glossary I'm going to use is standardized in order to allow the

[30] Also know as four-finger system (Wolf, 2011), extension fingerings (Morton, 1991) or open hand technique.

reader to compare the different methods using the same signs; this is why each exercise is transcribed from the different text and uniformed to the same rules that is possible to find in the glossary attachment. This part of the chapter is an extended revision of double bass left hand fingerings techniques literature that I consulted during my investigation.

### 2.4.1 The German School: The Simandl's Method

I'll start with the most common method of teaching in the world: the Simandl "New Method for String Bass."[31]

The method composed by Franz Simandl is compiled in two books: part 1, first published in 1881, teaches how to play on the lowest part of the fingerboard, and the second volume (edited by Waldo Lyman) offers a preparatory course for solo playing, working in the higher positions (thumb position). It is important to recall that Simandl's original first book presents eight positions, starting from the half position to the seventh position, plus four intermediate positions that are between the diatonic notes of the scale of C (second position) on the A string, for a total of twelve positions. However the book, that I own, is Stuart Sankey's revised edition that simplifies the system of numbering the positions and fingerings, calling each half tone shifting as a position. The Simandl's method uses three left hand fingers for each position (index, middle and little finger) and divides the first part of the fingerboard (till the thumb position) in twelve positions. However the first position is commonly called a half position, so the twelve positions will be from half position to the eleventh one. In order to give a visual idea about this fingering technique, Figure 8 show Simandl's half position.

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[31] Franz Simandl was born August 1, 1840 in Blatna, today part of the Czech Republic. He studied with Josef Hrabe at the Prague Conservatory from 1855 until 1861. He played in the Vienna Court Opera Orchestra, and he was first double bass in Bayreuth Orchestra. He taught at the Vienna Music Conservatory from 1869 to 1910. He is famous for his bass method and his compositions and transcriptions for string bass and piano. He owned a Maggini double bass and died in Vienna on the 13th December 1912.

**Figure 8: Simandl's half position.**

The position covers a whole tone using the first (index) finger to play Ab3, (or G#3), the second finger (middle) to play A3 and the fourth (little) finger to play Bb3 (A#3). Notice that, when the fourth finger is used, the third (annular) is used with the little finger to press the string and help the smallest finger with this task.

In Figure 9 is shown an F major scale, fingered using Symand's half position.

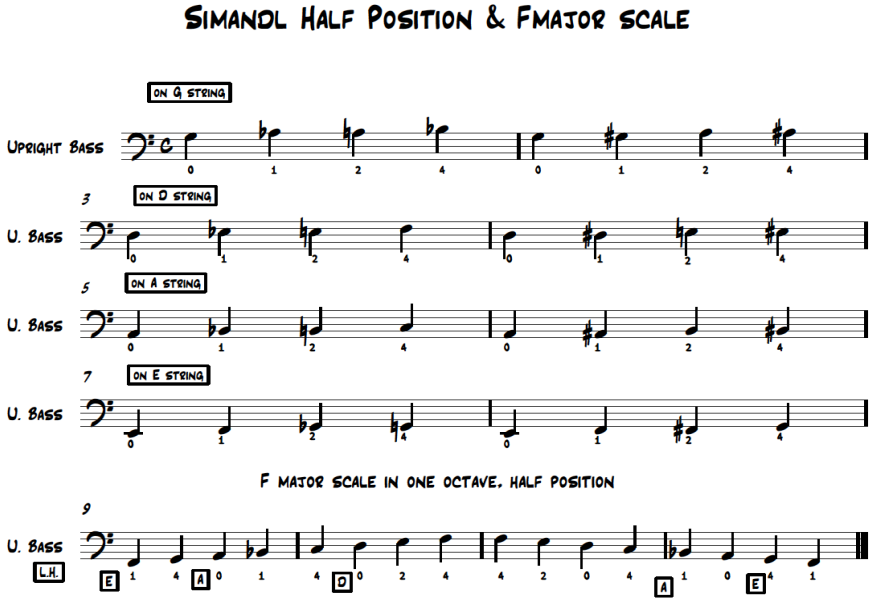


**Figure 9: Simandl's method (edition by Stuart Sankey), fingering for half position on each string and F major one octave scale fingering.**

The next position (first position) has the same hand shape but is just a half tone above the half position (Figure 10).

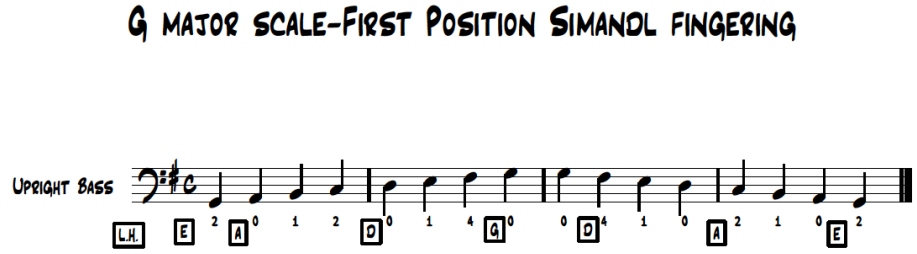


**Figure 10: Simandl's system (edition by Stuart Sankey), fingering for first position G major one octave scale.**

According to Simandl's method, the student acquires familiarity with a new position playing some studies using at first only this position. Then, in order to connect the last one learned with the previous ones, the pupil plays exercises that mix the oldest positions with the new one. In this way, the learning process is progressive, and the technical skills of the student constantly improve.

Each new position is a half tone above the one before; as an example, I took the eleventh position that is the last one before the player should start to use the thumb position (Figure 11).

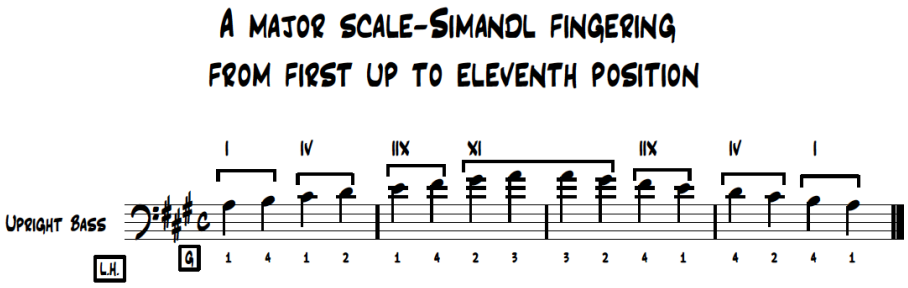


**Figure 11: Simandl's system (edition by Stuart Sankey), fingering from first to eleventh position: A major one-octave scale using only the G string.**

There are four position changes for this A major scale in one octave. The brackets show the names and the shift in a new position.

The second volume *New Method for string bass part II- The Thumb Position* is directed to players who want to explore the higher part of the instrument. Almost all the thumb position techniques share the same contents. The left hand slightly goes from the neck to the fingerboard while the left hand thumb assumes a horizontal position pressing the string between the first joint and the nail. This pressure could be light if we want to produce a harmonic sound (also called flageolet tones) or firm if we want to play a regular note.

The first finger (index) has to be placed slightly curved upon the string, so that the tip of the finger presses the string without touching the nail. The middle finger ($2^{nd}$) will press the string more with the middle part of the finger always placed upon the string but less curved in respect to the first finger. Finally the annular ($3^{rd}$) is the straightened one; in Simandl's system is not so used because it's shorter and weaker than the others; so it is rarely used independently because "power and quality of tone could not be obtained" (Simandl, 1984). He prefers the use of the second finger, being the longest and strongest, in the execution of big skips.

As written in the introduction of the book edited by Waldo Lyman: " In cultivating a technique for concert playing, the thumb position constitutes one of the most important features, for only by these means is it possible to raise the string bass to the rank of a concert instrument" (Simandl, 1984).

**Figure 12: Simandl's thumb position.**

As example, here is a two octaves Eb major scale using the thumb position according the Simandl's method.

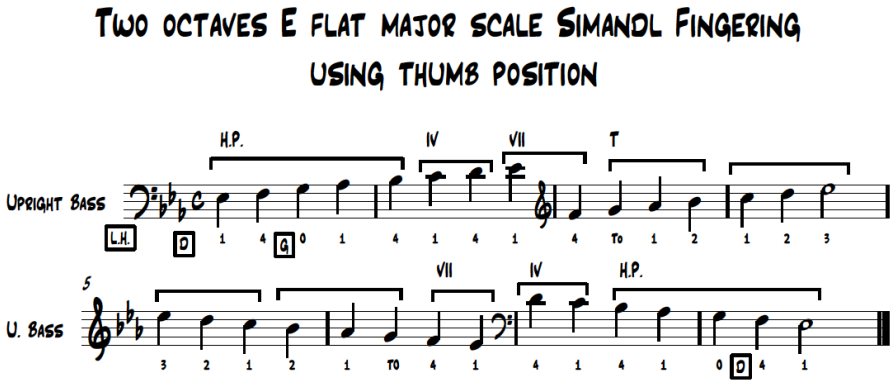


**Figure 13: Simandl's system (edition by Waldo Lyman), two octaves Eb major scale using the thumb position.**

Simandl numbered the positions up to the eleventh one, but he never mentioned additional ones after he reached the thumb position as shown in bar four where there is a change of left hand position but without numbers on the top. In my opinion this is one of the negative points about this method, the lack of clarity about thumb position.

### 2.4.2 The Italian School: the Billè's Method

The Billè's[32] method starts with an introduction about the need for the fifth string on the double bass and continues with discussion of the double bass's origin, the aim of the instrument, its construction, size, sonority, manner of holding the double bass, the bow, how to hold it, and conventional signs, tuning, the instructions relative to the left hand, rules for proper fingering, and the position of the left hand on the fingerboard.

I'll focus on the three last items. As previously said, Billè's method uses the first, third and annular fingers of the left hand in the lowest part of the fingerboard. This is known as Italian fingering, probably created by Giuseppe Andreoli (1769-1832), the author of a method for the three string bass with Luigi Anglois, in which they agreed

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[32] Isaia Billè was born December 22nd, 1874 in Fermo (Italy). As a child he lived in the orphanage of his city. He later attended a music school, first with Mº Scarfini and then with Mº Griffoni. Billè showed a great musicality, so the presidency of the *Congregazione della Carità* give him the possibility to attend the Fermo music school, then the *Liceo Musicale Rossini* in Pesaro where he studied with A. Mengoli double bass and C. Pedrotti harmony and counterpoint.

After graduating cum laude in 1894, Billè started his concert career, distinguished for his great technique and intelligent interpretation of the repertoire. He played in Portugal, Spain, France, United Kingdom and Belgium. He was also first double bassist in some of the most important orchestras in Italy (La Scala in Milan and l'Opera in Rome). In 1913 he preferred to teach at L. Cherubini Musical Institute to stay close to his family; then he taught at the prestigious Naples Conservatory S. Pietro a Maiella. In 1920-21 he toured in the U.S.A. with A. Toscanini, with whom he collaborated for several years. From 1923 on, he taught at the S. Cecilia Conservatory in Rome and was a member of the *Augusteum Orchestra*.

Billè was appointed as academic professor in S. Cecilia and other philharmonic academies; he was a pre-eminent teacher and composer, publishing his music for the prestigious G. Ricordi from Milan and U. Pizzi from Bologna. His teaching method, *Nuovo Metodo per Contrabbasso a 4 e 5 corde,* is divided this way: part one, four volumes (1922) and part two, three volumes (1934), and it was not published by Ricordi until 1957. He was also a musicologist, poet and writer. He died in Fermo on the 21st of February 1961 (Scalabrino, 1968).

about the use of the 1-3-4 fingering system[33]. According to Billè, there are some rules that have to be applied: whenever the scale reaches C, E, G on the first string (as could be applied to the other strings) whenever there are natural notes or with accidentals, the position has to be changed. In any ascending scale, the last half tone has always to be played by the 3rd and 4th fingers, and in the middle of the scale the half tone has to be played by the 1st and 3rd ones, except in the case of a string crossing. Interesting is what Billè said about the German and French fingering (1-2-4 fingering):

> The German and French fingering widely differs from ours, as they play the first half-tone with the index and middle fingers and the other with the remaining fingers. It is true that the isolated action of the little finger on the second half-tone is thus eliminated, but is also true that the hand loses this aesthetically, as the middle finger has to draw away from the index for the first half-tone, must make an elaborate effort, while with Italian fingering this is avoided and the hand is always kept even and lovely; for this reason our fingering is preferable (Billé, 1922).

This method has seven positions up to the "capotasto" (nut); after that, as with the Simandl's method, no more positions are counted; however there are twelve positions because there are seven plus five half-positions (including the first half position that is equal to the Simandl's system). The half positions between the main positions could be called differently according to the notes they are determined by; so they are called "advanced" or "backwards." As an example, A#3 played with the index finger on the G string will be called first advanced or upper position, while if the note is called Bb3 and played with the same first finger in the same G string, it will be called second backward or lower position. So the enharmonic name of the note determinates the name of the

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33 Andreoli was a double bass teacher at the *Regio Conservatorio di Milano* and first double bass player at the *Teatro La Scala*. He transcribed various violin concertos adapting them for the string bass (Crotti, 2013).

position.

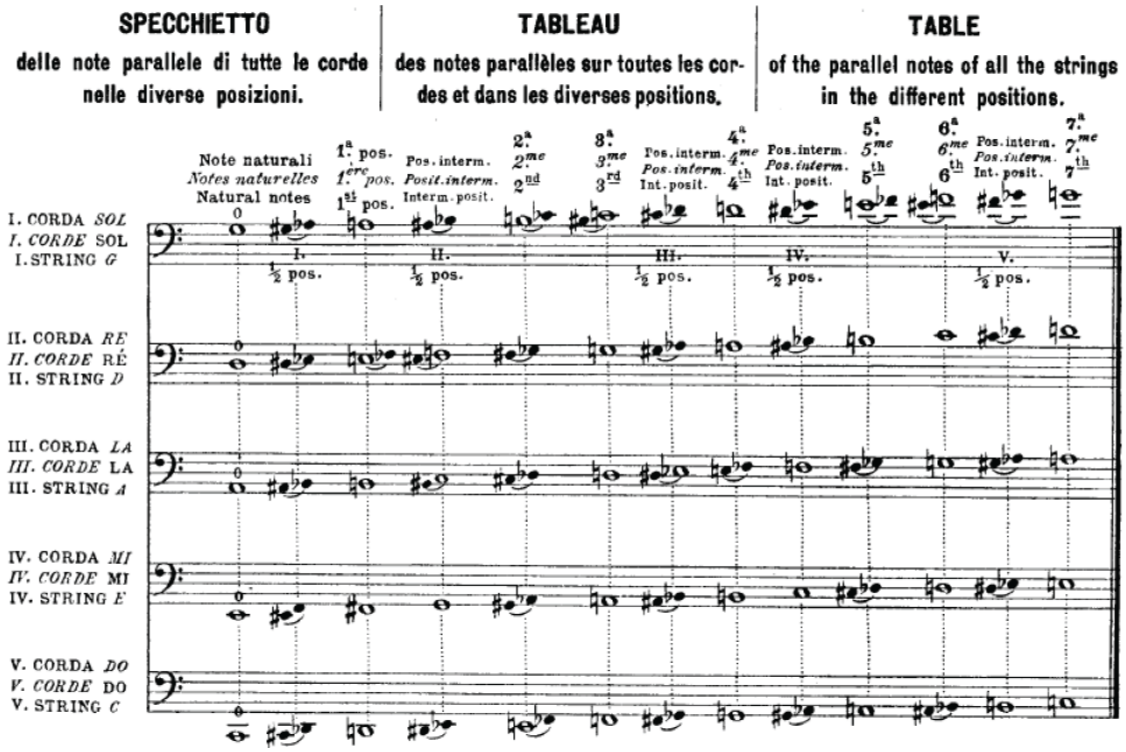


**Figure 14: diagram of Billè's positions from, *Nuovo Metodo per Contrabbasso a 4 e 5 corde vol. 1* (1922, p. XVI).**

In Figure 15 there is an example of half position using the Billè fingering; I used the same exercise as the figure 9 to compare the Billè and Simandl's methods.

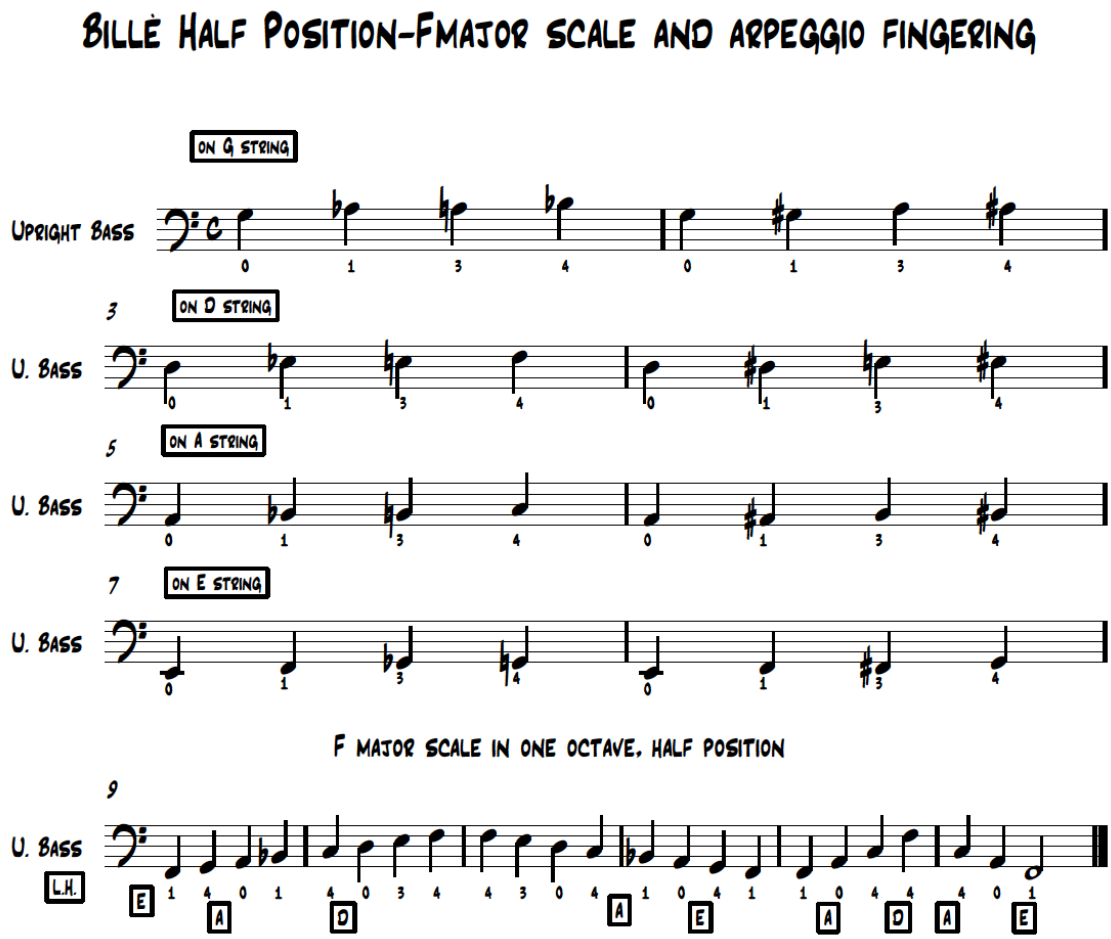


**Figure 15: Billè's fingering system for half position on each string and F major one octave scale and arpeggio fingering.**

After some exercises, Billè introduces the first position that is equal to the Simandl but using the 3rd finger in substitution of the 2nd as seen in Figure 16.

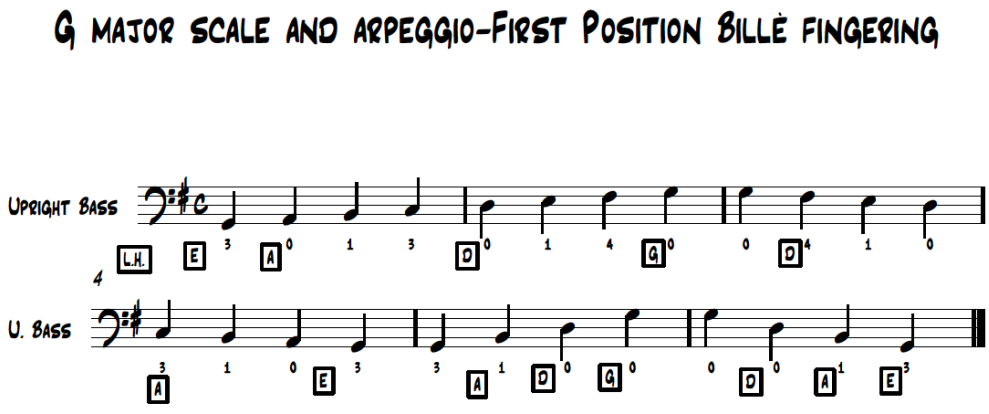


**Figure 16: Billè's fingering system for first position, G major one octave scale and arpeggio.**

As previously cited, Billè uses half positions; in this case the C major scale is played by using the II half position (Figure 17).

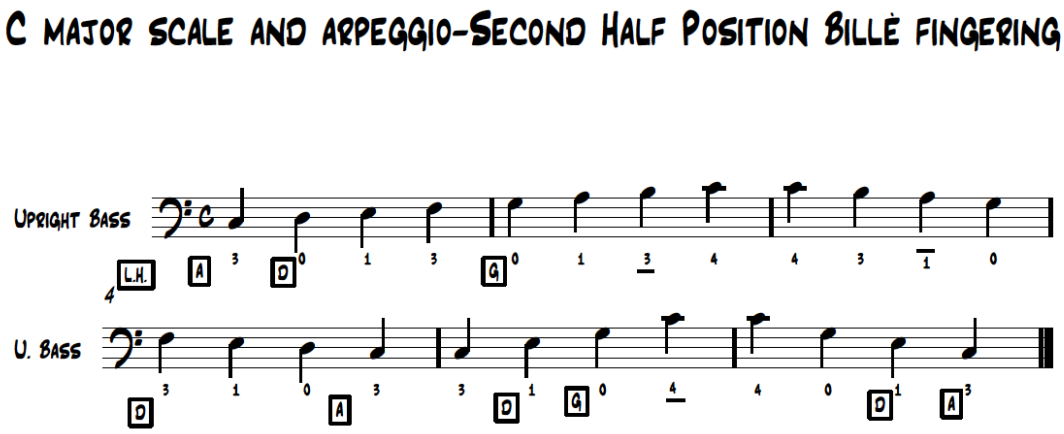


**Figure 17: Billè's fingering system for second half position, C major one octave scale and arpeggio.**

Notice that the dash under the finger number means that there is a shift in position forwards, as the dash above means a shift position backwards.

As I did for Simandl's method, Figure 18 shows how to play an A major scale in one octave on G-string passing from the first position to the seventh.

The numbers below are the main fingerings, as the ones above are alternate fingerings.

The brackets show the names and the shift in positions.

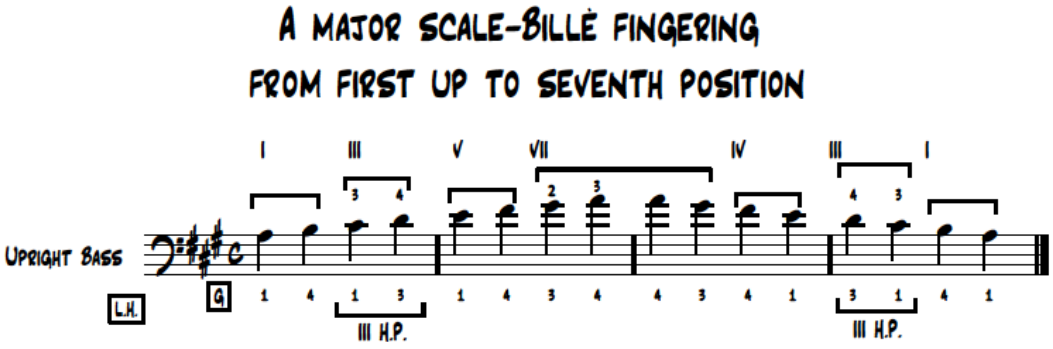


**Figure 18: Billè's fingering system from the first to the seventh position: A major one octave scale using only the G string.**

Billè's first volume finishes with the seventh position as Simandl's does (or the eleventh in the Stuart Sankey's edition).

### 2.4.3 The French School: Edouard Nanny's Method


**Figure 19: Edouard Nanny and his students at Paris Conservatory in 1922.**

The first volume of the *Complete Method for the four and five stringed double bass* is quite different from the others two methods analyzed earlier. There are just few pictures and indications regarding bowing and left hand posture. From a certain point of view, it looks like a practical manual with essential instructions.

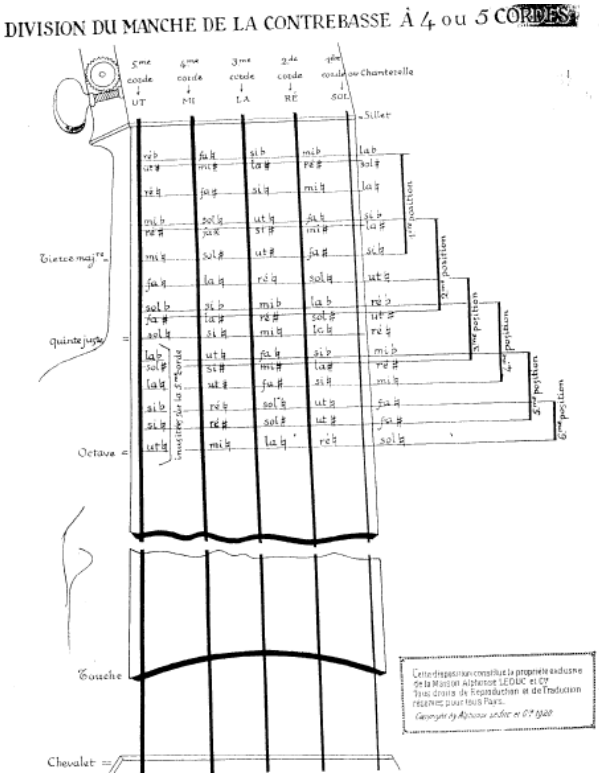


**Figure 20: Nanny's fingerboard position division for four or five strings double bass from *Complete Method for the four and five stringed double bass* (1920, p.2).**

Nanny [34]divided the fingerboard into eight positions, each one is subdivided into two degrees; so there are a total of fourteen positions, while in the Simandl and Billè's

[34] Edouard Nanny was born on March 24th, 1872 in Saint-Germain-en-Laye (France). He studied until 1892 at the Paris Conservatory with professor Verrimst. He played for several years with the *Société des Nouveaux-Concerts*, founded by Charles Lamoureux in 1881 and with the *Orchestre Colonne*, founded in 1873 by Édouard Colonne. In 1901 he founded with Henri Casadeus the *Société de concerts des Instruments anciens*, presided over by Camille Saint-Saëns. He was first double bassist with the *Orchestre du Theatre National de l'Opera-Comique*, *Société des Nouveaux-Concerts* (also known as *Concerts Lamoureux*) and at the *Société des Concerts du Conservatoire*. He taught at the Paris Conservatory from 1919 until 1939. Nanny died in Paris on October 12th, 1942. Nanny's *Complete Method for the four and five stringed double bass* in two volumes is a fundamental work for gaining knowledge of the instrument. Among others educational works, there are transcriptions of Kreutzer and Fiorillo studies (1921), 20 *Études de Virtuosité* (1921), 24 studies extracted from symphonic repertoire (1921) and 10 *Études Caprices* (1931). He wrote some important works for double bass, for example, the A major concerto, normally attributed to Domenico Dragonetti, the E minor concerto, *Berceuse*, *Airs Russes, Tarantelle*, and three caprices.

methods there are but twelve. This happens because the Nanny's method has additional positions after the string octave. Billè and Simandl stopped their positions on the A4 (on G string) while Nanny stopped on B4 (on G string). Nanny used the 1-2-4 fingering (as did Simandl) until the 6th position (9th degree) and then the 1-2-3 fingering from the 6th position (10th degree). One important indication is that the major second intervals (a whole step) are fingered in the first five positions using the 1st to the 4th finger. The space between these fingers is quite wide in the 1st position but tends to diminish until the 5th position. As discussed above, from the 6th position (10th degree) major seconds are fingered with the 1st and 3rd finger. For minor second intervals (half tones), the 1st and 2nd fingers until the 5th position, are used, and then from the 6th on the 1st and 2nd finger and/or the 2nd and 3rd finger should be used (Nanny, 1920). The major second constitutes a degree of the division of the neck, so because it is impossible to perform a position without displacing the hand an half tone, Nanny assumed that an entire position should occupy two degrees, as shown below (Figure 21).

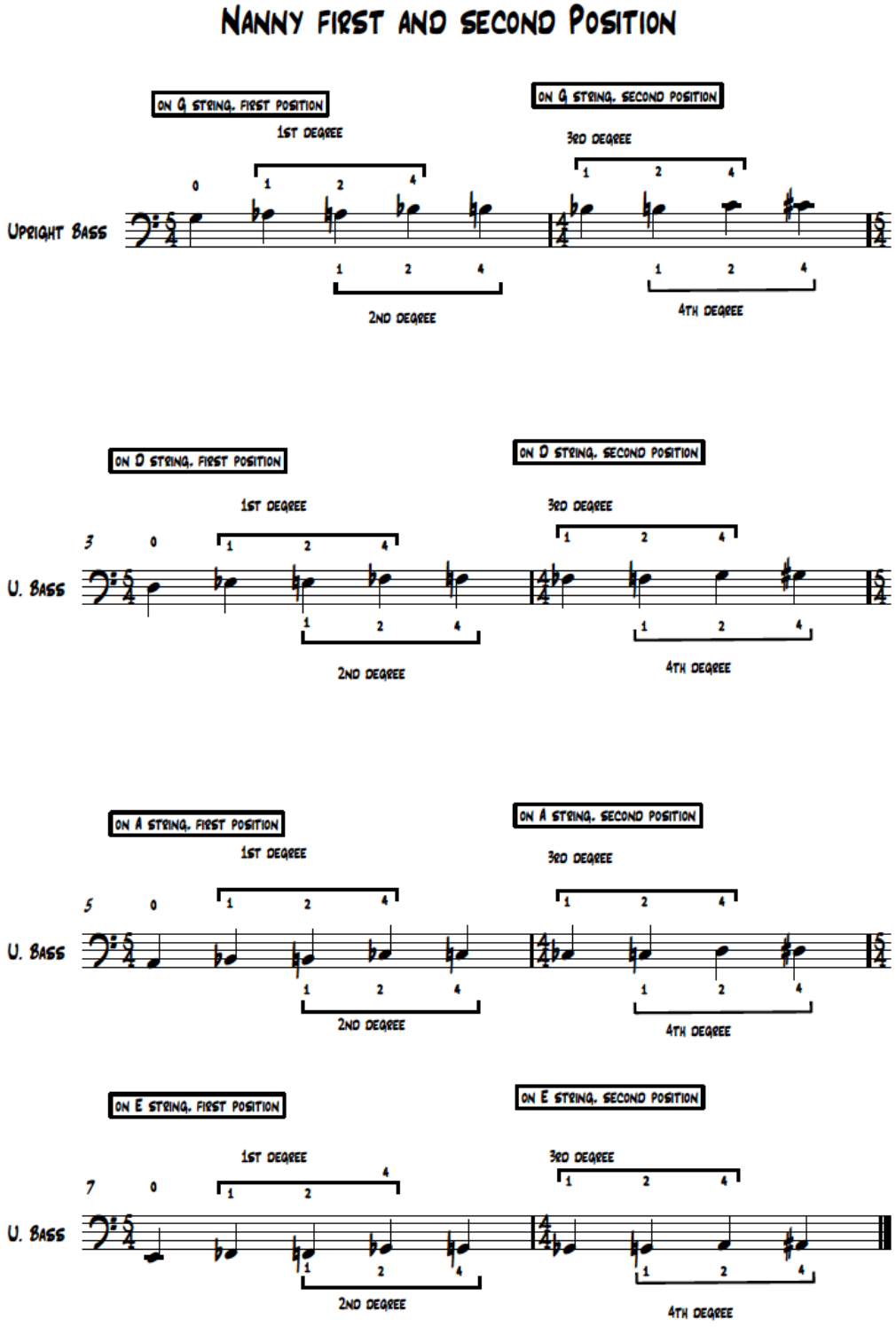


**Figure 21: Nanny's method, first and second position. Division of each position in two degrees on a four string bass.**

The use of this method allows the students to start from the very beginning to develop the sense of tonality. In first position there are already exercises in the key of C major, A

minor, F major, Bb major and E minor. This is a major innovation in respect to the Billè and Simandl's methods, because Nanny used the available notes in each single position (and degree) to create exercises in different keys.

An F major scale is shown as a comparison to the other two methods; the left hand fingering is the same as the German school.

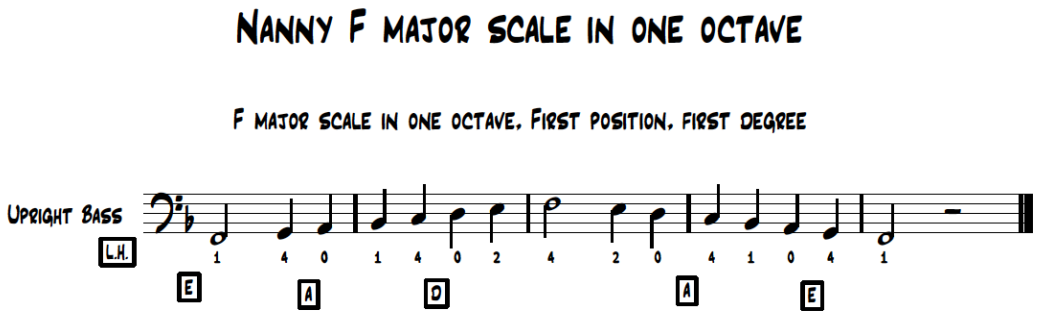


**Figure 22: F major scale as written in Nanny's method (p. 11), without bows or dynamics.**

Nanny then introduced the first position, second degree, with exercises in the keys of D major, G major, B minor, F# minor.

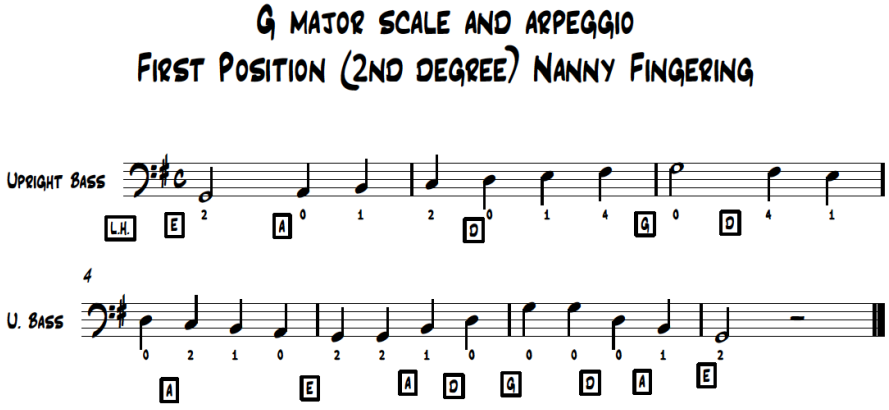


**Figure 23: G major scale in one octave as written in Nanny's method (p. 17) without bows or dynamics.**

As for the F major scale, the fingering is the same as in Simandl's method.

Nanny wrote some exercises using the first position (both first and second degree) in the keys of A major, E major, B major, F# and Gb major, Bb minor and Ab major. Therefore it is possible to conclude that in one position were already presented with a large number of major and minor keys.

As an example (Figure 24), I have transcribed an A major scale in one octave on one string (G string) plus arpeggio (on two strings), covering seven positions in accordance with Nanny's method.

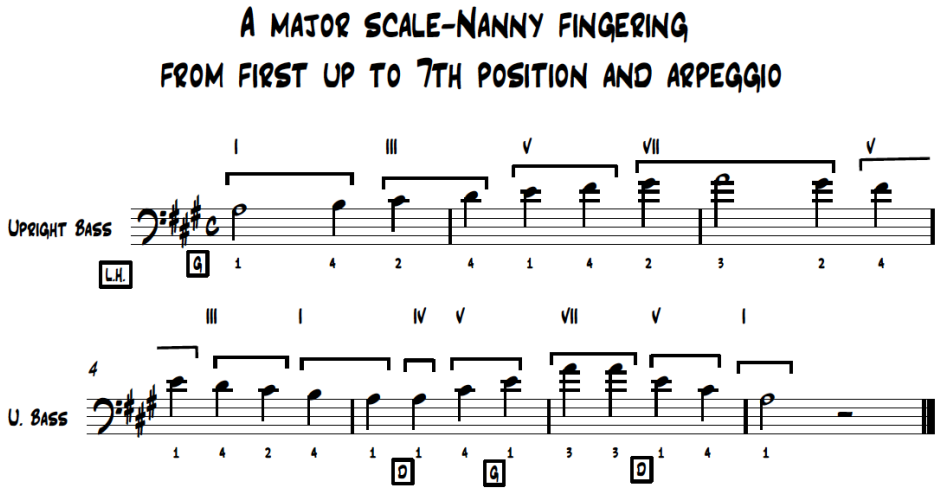


**Figure 24: A major scale in one octave on the G-string plus A major arpeggio in one octave on two strings.**

The last exercises written using this method are on the use of the thumb from the 7th position. According to these exercises, Nanny named these positions the 9th and 10th, although they do not appear in Figure 20.

In the first part of this chapter, using a common glossary, I explained the similarities and the main differences among these three schools and how these methods influenced generations of double bass players in the use of the left hand technique. I'm sure that analyzing the three systems' use of the bow, we will find some good points for further investigations, but I choose to only investigate the left hand fingering because, mainly in jazz, the bassist almost uses pizzicato and is quite unusual to use the bow playing the electric bass.

Simandl's, Billè's and Nanny's books describe quite old methods; however the modern double bassist needs more resources as the instrument's evolution demands. From now on I'll introduce newer methods, some of them are just an evolution of the old ones while others mix old and new techniques.

## 2.5 The New Schools

### 2.5.1 François Rabbath[35] and his Nouvelle Technique de La Contrabasse

In the three volumes of *Nouvelle Technique de La Contrebasse,* François Rabbath presents the double bass as a soloist instrument, showing a clear perception of the range of the instrument. He divided the whole fingerboard into six sections (or positions),

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[35] François Rabbath was born in Aleppo (Syria). He discovered the double bass at the age of thirteen. He moved with his family to Beirut (Lebanon), and there he found an old copy of Edouard Nanny's double bass method in a tailor shop and began to study this method. After several years playing and working in Beirut, he moved to Paris thinking to finally meet Nanny, whose book inspired his playing. Rabbath applied to the Paris Conservatory, and he discovered that Nanny had died in 1942. He prepared his entrance audition in just three days and was classified first among all the candidates. Despite this, after a brief period, he left the conservatory because he thought it was not useful for his learning.

While in Paris, he began to play with Jacques Brel, Charles Aznavour, Gilbert Becaud, Michel Legrand among others. In 1963 he made his first solo record album titled *Bass Ball*. From 1964 on he started to compose music for movies and the theater; at the same time he started to play solo concerts, first in France, then throughout Europe. His first concert in the United States was at Carnegie Hall in 1975.

In 1978 Rabbath met the American composer and double bassist Frank Proto. In 1980 the Cincinnati Symphony commissioned Proto to write a concerto especially for Rabbath. The Concerto No. 2 for Double Bass and Orchestra premiered in Cincinnati in 1981. Two years later the Houston Symphony commissioned Proto to compose *The Fantasy for Double Bass and Orchestra*, as tribute to Rabbath, which premiered in Houston in 1983. The Carmen Fantasy, their third partnership, was composed as a work for double bass and piano; Rabbath premiered the piece in Cincinnati in July of 1991, with Proto on piano. The composer orchestrated the Carmen Fantasy in spring of 1992. These three works have been recorded and are available on Cd (*Frank Proto: Works for Double Bass and Orchestra,* Red Mark 9204). They also released another concerto composed by Proto: *Four Scenes after Picasso* - Concerto No. 3 for Double Bass and Orchestra.

Rabbath has constantly recorded through the years, and it is possible to listen to this virtuoso on several Cd's such as: *Multi Bass '70* (Red Mark 9202), *Live Around the World* (Red Mark 9201) and *Carmen!* (Red Mark 9203) (Publishers, n.d.)

making the understanding of the extension of the fingerboard easy, leading the student to a clear comprehension of the instrument (Rabbath, 1977)[36].

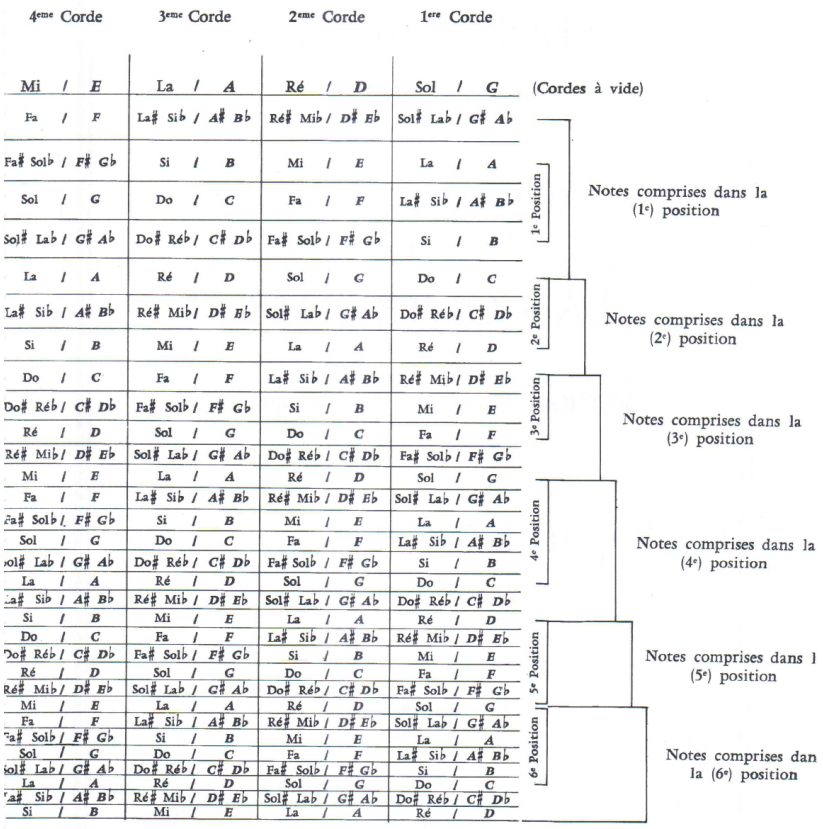


**Figure 25: fingerboard division in six positions from François Rabbath´s *Nouvelle Technique de la Contrebasse, Vol.2* (1980).**

Rabbath (1977) states that the traditional methods maintained a characteristic silence regarding the thumb position, which deprived the student of a good part of double bass

[36] François Rabbath is also a distinguished pedagogue; he wrote *Nouvelle Technique de La Contrebasse* in three volumes with Cd. In 2012 he wrote a forth volume that contains exercises, etudes, scales & arpeggios, orchestral passages, and pieces for double bass solo, plus a DVD that shows some of the revolutionary techniques that Rabbath uses.

He edited *The Art of the Bow* in 2005 and the *Art of the Left Hand* in 2012 both on DVD. *The Art of the Bow* employs multiple camera angles, biomechanics, and the "technology of motion capture". *The Art of The Left Hand* is a two-DVD set. The first DVD contains lessons, philosophy and several live performances. The second DVD contains three user-selectable video streams throughout the entire disc. This is a great revolutionary teaching tool for those who want to learn left hand technique directly from this master.

potentiality. This six-position division is based on the natural harmonics of the instrument. Some fingerings are presented, but Rabbath suggests that the player should choose the ones that best suite his or her own style. In the preface to his books, Rabbath explains part of his philosophy about studying and playing and gives some precious advice, also adding some pictures of how to hold the bass, the bow, hand positions, control of the bow, and pizzicato.

The first volume starts with open strings and simple bow techniques, as any other method, and then introduces the first position, first semitone.

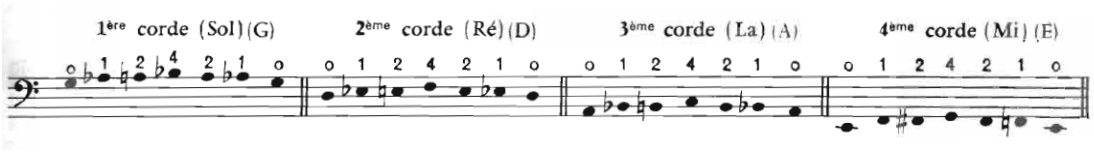


**Figure 26: first position, first semitone from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.1* (1977, p.3).**

As known, the first method Rabbath studied was Nanny's and in the same logical way the Syrian virtuoso wrote some exercises and studies in different keys using the available notes in that position (C major, F major, C minor, G minor, D minor, Bb major, Eb major, A minor). The left hand fingering is based on the French/German School, using the 1-2-4 technique.

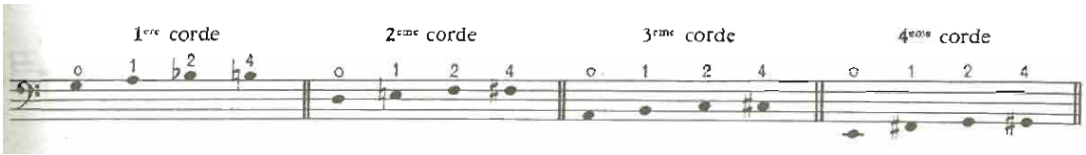


**Figure 27: first position, second semitone from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.1* (1977, p.19).**

Here Rabbath starts to introduce an innovative concept already used by other stringed instruments, like the violin but never applied to the double bass: the pivot.

In Figure 26 and 27 the left hand thumb stays in the same position.

This technique allows reaching an interval of minor third or even a major third using the thumb of the left hand as an anchor (pivot) as the palm of the hand moves, giving the possibility to make a wider movement compared to the whole tone allowed in the old schools' methods.

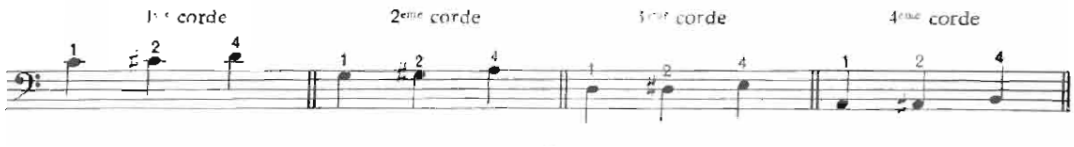


**Figure 28: second position from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.1* (1977, p.24).**

In the third position, Rabbath suggests playing the scales and exercises without moving the thumb that must be placed at the base of the neck. This position starts with the index finger on the fifth of the open string, in this case the E3 note on the A string (as pointed out before it corresponds to a harmonic node). As it is possible to see, the first fingering is very similar to the one octave fingering for electric bass (see Figure 1), as the second one uses a technique that is similar to the one used on the guitar, playing three notes for each string, something that Rabbath further explores in volumes two and three.

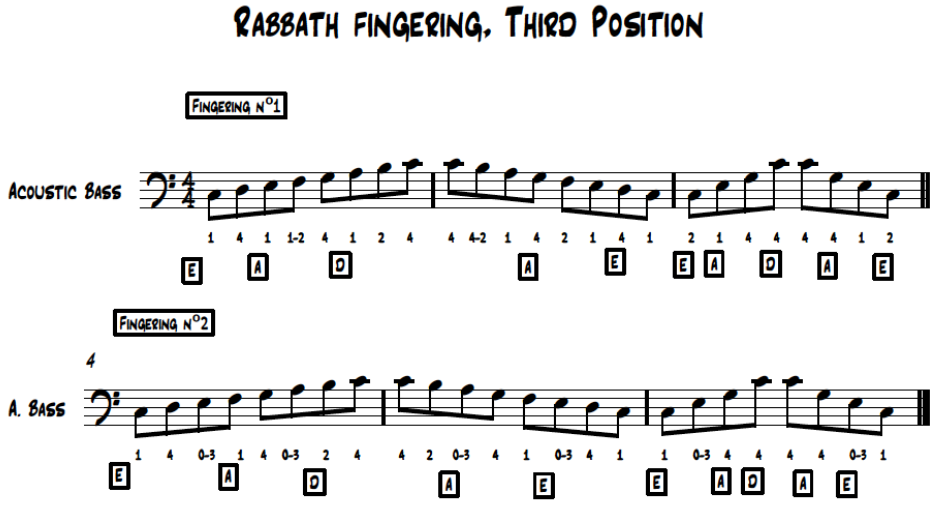


**Figure 29: third position, C major scale in one octave ascending and descending plus arpeggio from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.2* (author's transcription).**

The fourth position basically starts in the thumb position (octave with natural harmonics) as shown in the next example (Figure 30).

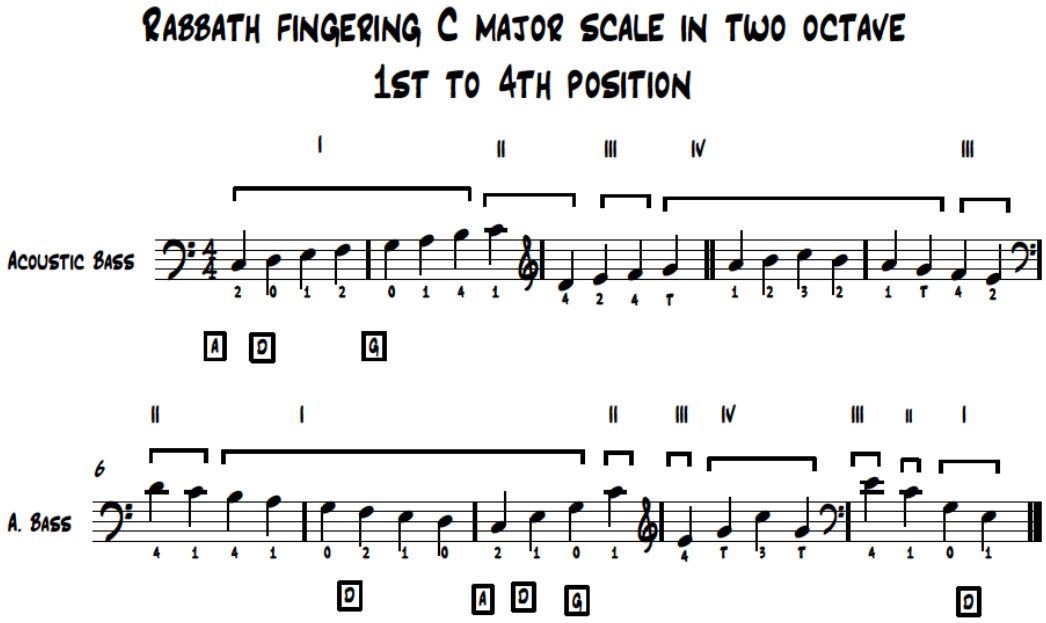


**Figure 30: two octave C major scale, starting in first position and ending in fourth position, ascending and descending plus two octaves arpeggio from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.2* (author's transcription).**

The fifth and sixth positions complete the whole range of the instrument. They start where the harmonic nodes are as shown before. Fifth position starts on the fifth of the open string (for example on G3 will be a D5) as sixth position begins in the octave of the open string (on G3 will be a G5).

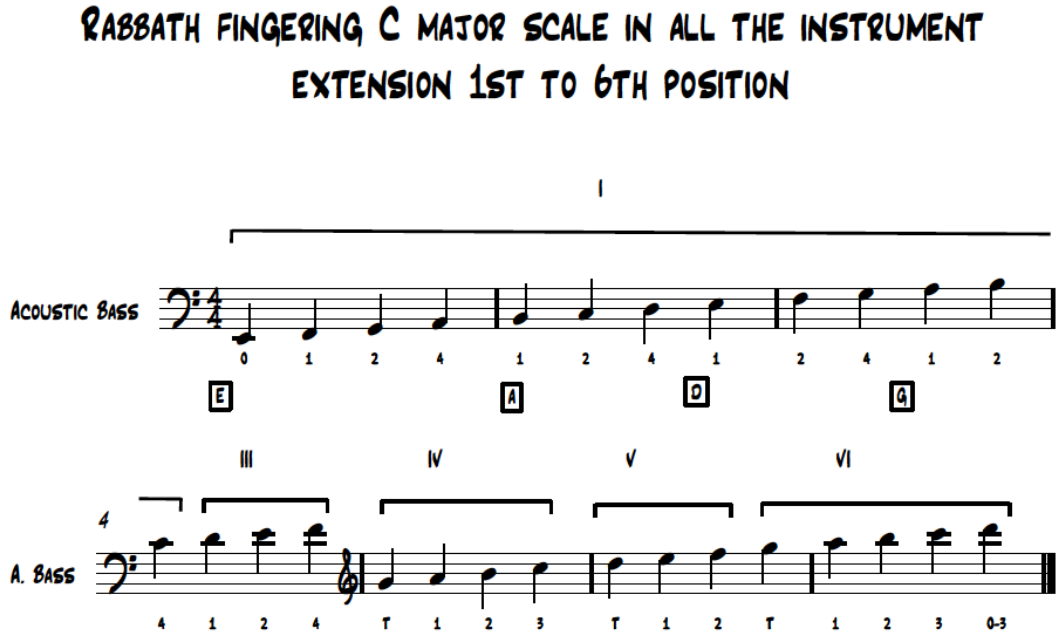


**Figure 31: C major scale using all the extensions of the instrument from first position to sixth position from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.3* (author's transcription).**

### 2.5.2 The "Crab Technique"

One of François Rabbath's most innovative techniques is the "Crab Technique," so called because the player's hand movements resemble a crab walking. Rabbath says that it's very important to never lift one finger off the strings without making sure the next finger is in the following position. In ascending passages, the last played note has to stay on its position until the rest of the hand moves toward the bridge, in order to close it up until the positioning of the next finger. In descending passages, the higher note played must push the hand towards the neck, making the hand open up until the positioning of the next finger. This technique is the equivalent of the pivot in thumb position and allows great security in the notes succession and perfect slurs with the bow (Rabbath, 1977).

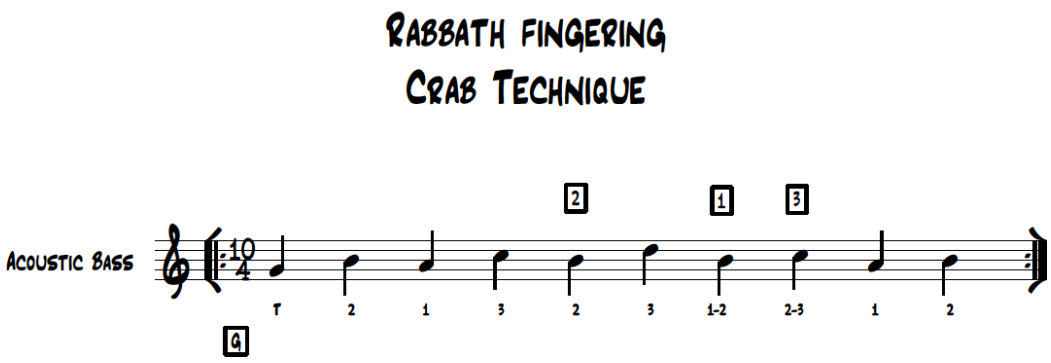


**Figure 32: Crab technique from François Rabbath's *Nouvelle Technique de la Contrebasse, Vol.3* (author's transcription).**

In Figure 32 it is possible to see that the meaning of the boxed numbers is that the finger shouldn't move before the next finger has been placed on its proper position.

In my opinion the *Nouvelle Technique de la Contrebasse* covers all the issues concerning the playing of the double bass, all the extensions of the instrument, creating challenging exercises and studies for the contemporary player. Every book has a Cd, and today we can find on the Internet several examples played by François Rabbath explaining the essence of his playing. His position system made possible the use of less shifting, while the pivot and crab techniques help us to play with better intonation and fluidity. At the beginning of this century, Rabbath learned that the future of teaching is based on video platform and his last two DVD releases show that he knows exactly what young students need.

### 2.5.3 The American School of Double Bass: Mark Morton[37], his books, concepts and ideas

Without any doubt Dr. Mark Morton is one of the most eminent educators in this field with several innovative publications under his name. I will start introducing his important book *Dr. Morton's Double Bass Technique: Concepts and Ideas* that is the backbone of his philosophy of playing and teaching, as I said, this is a conceptual book where Morton identifies potential problems and suggests solutions. Then he wrote four other books: *Dr. Morton's Primer Scale & Arpeggio fingerings for the Double Bass* that is, as the title remarks, an approach to scales and arpeggios for less experienced bassists. *Dr. Morton's Miraculous! Scale Fingerings for the Double* Bass and Dr. *Morton's Miraculous! Arpeggio Fingerings for the Double Bass* are workbooks that set on paper some of the concepts and ideas of the author regarding left hand fingering and bowing. *Dr. Morton's Torturous Exercises for the Double Bass* is a very demanding book, which covers all kind of bowing, vibrato, left hand dexterity, shifting exercises, string crossing and more. Finally his *Simandl-Plus Workbook* is a booklet on how to devise good and effective left hand fingering on double bass.

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[37] Mark Morton is Associate Professor of Double Bass at Texas Tech University. For twenty three years he was a member of the Columbus Symphony Orchestra (Ohio) being the principal double bassist for 14 years. Morton was the first prizewinner of the 1990 International Society of Bassists Solo Competition in New York, and he performed solo concerts in Europe, South America, Canada, and in the US. He has been a featured double bass soloist on radio broadcasts including NPR's *Performance Today*. His acclaimed CD, *Thresholds and Russian Rendezvous* has become a reference recording for standard double bass repertoire. He recorded a CD of double bass music written by Paul Ramsier.

Classical CD Reviews proclaimed him "a most artistic representative of the new generation developed in the last half century." Dr. Morton is also an accomplished pianist. His recently released *Bottesini Greatest Hits* (Albany Records) features Morton accompanying himself on piano.

#### *2.5.3.1 Double Bass Technique: Concepts and Ideas*

This book is divided in two main parts; the first is focused on double bass, body posture and the left hand, and part II is about the right hand. I will not analyze the second part of this document because, the right arm is the one that normally plays the bow (at least in classical double bass methods) and as my primary goal is about left hand technique, I will only focus on part I. However, I have to encourage the serious student or professional player of any kind of music to also read the second part of this book that is an exhaustive font of information about bow playing.

The first part of this book starts with Mark Morton's preface on the "state of the art" of the instrument, talking about the fact that despite the improvement of the level of playing during the last centuries, the double bass literature is behind the available books about the other string instruments (Morton, 1991). He points out that the whole double bass community has to find a way to assume a more standardize playing technique. This book is his contribution in this sense, based on several years of playing experience and research into the literature about double bass and string instruments.

Morton analyzes a technical problem discovering solutions instead of practicing over and over until learning new skills as the old school methods used to teach. In this book he uses his own specific glossary of terms; the reader is helped with figures to eliminate any possible doubt.

The first chapter talks about the instrument and posture, especially about sitting and standing up positions (stools, advantages and disadvantages of sitting and standing, movements, elbow position, upper body posture).

The second chapter starts defining how Morton divides the fingerboard into three registers: the "neck register" (between Simandl's half position through IV position), the

"crook of the neck register" (between V and VII Simandl's position) and the "thumb register." [38]

All of these registers have two postures of the hand; one for fast playing called "technical posture," and another for slow and lyrical playing called "lyrical postures" (so called because there is a different posture of the left hand for each finger). In "neck" and "crook of the neck" registers, these postures can be divided in "regular" (as Simandl's standard position) and "extension" fingering[39]. Morton does not apply the terms "regular" and "extension" to the thumb position. He remarks however that all these positions are not meant to be rigid, all the position changes should develop in an organic and natural way (Morton, 1991).

The explanation of all these registers is very understandable, suggesting the right angle of the forearm and hand, thumb placement for each string, finger placement for technical posture with "regular" (for the three registers), "extension" fingerings (only for "neck register" and for the "crook of the neck" register) and for the "lyrical postures" (for all the register).

Chapter III talks about fingerings and how to acquire the skill to develop efficient and creative ways to do that. Morton says that in the lower position the hand reaches just a whole tone in normal position or a minor third in extension fingering, so he associates his "regular" fingering system to the Simandl's system and the "extension" fingering to the Franke's system. Here he explains how the two systems coexist and how to use one or the other. Regular fingering should be used in lyrical playing and especially in the lower positions; extension should be used in fast playing, particularly in upper neck positions. In the "lyrical" style, the Simandl's system should be used as the shifting is played on the

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[38] Traditionally from the first octave harmonic not to be confused with "thumb position" that will refer the thumb on the fingerboard stopping the string (that could be used also in the lower part of the neck).

[39] Also known as four-finger or Franke's system.

same string, in order to produce a homogeneous tone. In the "technical" style in opposition to the "lyrical" shift should be avoided, utilizing string crossing, open strings and privileging fast and clear tones.

**Seventeen suggestions for left hand fingerings**

Let's think about the importance of planning and inventing good and effective fingerings. As these are general rules, the bassist has to decide which of these suggestions are the best options to serve specific musical purposes.

1) Play at least two notes for each position.
2) If possible arrange the fingering so the shift occurs in a strong beat[40].
3) Perform a shift for semitone on one string.
4) Perform a shift for semitone with the same finger.
5) Avoid using the same finger twice in a row when crossing strings in a legato passage.
6) Avoid opening the strings especially in lyrical playing because open string sounds very different than stopped strings.
7) Avoid playing two open strings in a row, as they will continue ringing.
8) Choose fingering that makes the left hand travel the shortest distance possible, as explained in Figure 33.

[40] However in case of a long series of running notes in a consistent rhythmic value, it will be better to shift on the rhythmically weak note. In case of a quarter note followed by a half note (the two notes included in the same triplet) or when playing an eighteenth dotted note and after a sixteenth note with no slurs, it is suggested to shift to the new position in the shorter note.

| Ascending Shifts | Descending Shifts |
|---|---|
| 1 to 4 | 4 to 1 |
| 1 to 3, 2 to 4 | 4 to 2, 3 to 1 |
| 1 to 2, 2 to 3, 3 to 4 | 4 to 3, 3 to 2, 2 to 1 |
| 1 to 1, 2 to 2, 3 to 3, 4 to 4 | 4 to 4, 3 to 3, 2 to 2, 1 to 1 |
| 2 to 1, 3 to 2, 4 to 3 | 3 to 4, 3 to 2, 2 to 1 |
| 3 to 1, 4 to 2 | 2 to 4, 1 to 3 |
| 4 to 1 | 1 to 4 |

These fingerings appear in descending order of efficiency - the top line being the most efficient shift, and the bottom line being the least efficient shift. All fingerings that appear on the same line are equally efficient.

**Figure 33: Order of efficiency for ascending and descending shift from Mark Morton's *Double Bass Technique: Concepts and Ideas* (1991, p. 61).**

9) It is better to play Simandl's fingering in position III (first finger playing C4 on G string) through IV (first finger playing D4 on G string) on lower strings than playing in half or first position with open strings.

10) Begin shifting as soon as the passage will allow in order to distribute the distance the hand must cover (Figure 34).

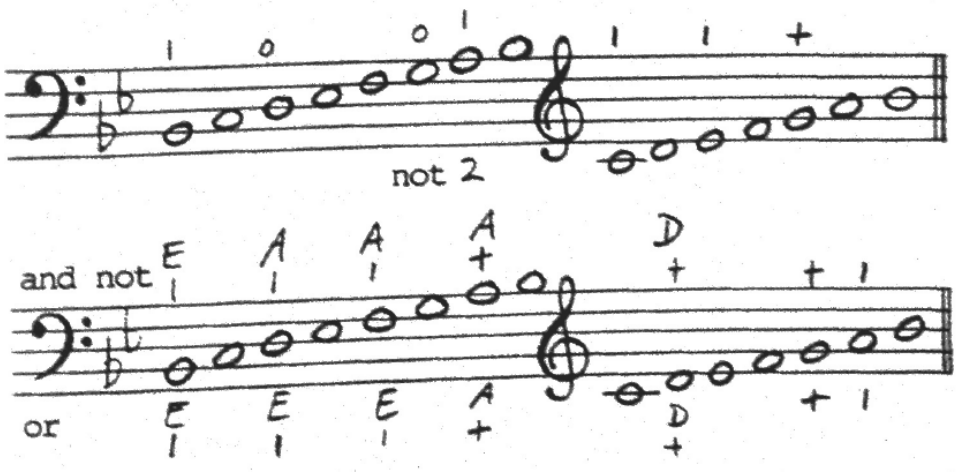


**Figure 34: shifting as soon as the passage will allow, from Mark Morton's *Double Bass Technique: Concepts and Ideas* (1991, p.61).**

11) Use the third finger rather than the fourth from Eb4 till F#4; using the third finger helps to move from "crook of the neck" position to "thumb" position.

**General rules for thumb register and position**

12) Avoid the use of the third finger above Eb5[41]

13) The best fingering in the thumb register is a semitone or whole tone between the thumb and the first finger and a semitone between the other fingers[42].

14) As the thumb can comfortably pull far away from the first finger, it is possible to do a flexible number of intervals available between these two fingers[43].

15) Avoid playing a whole tone between the first and second finger if there is a half tone between the thumb and the first finger or a whole tone between the second and third finger. Avoid, if at all possible, playing a whole tone between the second and third finger.

16) Use the thumb not only an octave above the open strings but also down until around a perfect fifth above the open strings. Avoid the use of this technique in lyrical passages.

17) Should avoid the use of the fourth finger above Eb4 because of its shortness and lack of strength.

These suggestions are the backbone of Mark Morton's concept about fingering. Morton affirms that frequent shifts on the instrument demand that the double bass player be efficient and always employ correct technique. The musician must be aware of these three phases of the shift.

**The Three Phases of Movement**

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41 The intervals begin to get closer, then the use of the first and the second finger is suggested; occasionally it is possible the use of the third finger and the thumb but only in chromatic passages.

42 Francesco Petracchi calls these positions chromatic and semichromatic (Petracchi, 1980).

43 It is also very useful to play a whole tone between thumb, first finger and second finger and a half tone between second finger and third as this configuration forms a major tetra chord (Francesco Petracchi in his *Simplified Higer Technique for Double Bass* call this configuration as diatonic).

1) Preparation
2) Movement
3) Follow-through or recovery

Abrupt movement has to be avoided, especially when completing the shifts, as a smooth recovery movement releases the kinetic energy at the end of the motion. All the movements initiate from the "core" of the player[44]. The right balance between activity by the upper arm and passivity of the forearm is the key for a smooth movement as in ascending shifts from the neck register. The movement starts (preparation) with a subtlety in the opposite position from the ascending shift, then the elbow leads the hand through the neck until that the same elbow passes slightly its final position, bouncing back up and placing the hand in the right place. Descending, shifting movements are the same but backwards. To shift in both directions, in the thumb position, the wrist assumes the role that the elbow assumes when playing in the neck register[45]. In the same way, the preparation movement in the opposite direction and the recovery movement are almost absent. Instead of that, the first movement is an abduction or adduction of the wrist in the direction of the shift and then, before the finger arrives at destination, the wrist stops launching it for the remaining portion of the shift. All these movements need a proper preparation because of the changes of hand and body posture. In ascending shifts from neck register to thumb register for example, the player has to lean forward, bending at the hips while keeping the spine straight (Morton, 1991). This will help bring the high position closer to the bassist's arms. In the same ascending shift, when arriving more or less around the crock of the neck register, it is important to prepare the shift by raising the

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[44] In case of a seated bassist the core is the pelvis (Morton, 1991).

[45] However all the movements are smaller because the distance between the tip of the finger and the wrist is less than from the tip of the finger to the elbow.

elbow and progressively change the position of the left hand thumb, sliding from the center of the neck to the side and finally on the string in a smooth and gentle movement. When descending all these movements, the technique must be performed backwards.

In classical music more than jazz or modern music, the "portamento" (a kind of slight glissando) is more audible because of the use of the bow. In order to minimize the "portamento" (that in pizzicato playing is less audible) Morton divides the shifts in "Funtional" and "Expressive." In jazz music the functional shift should be the primary shift (or at least the most used).

| Ascending Shifts | | | Descending Shifts | | |
|---|---|---|---|---|---|
| When shifting from | to, | shift with | When shifting from | to, | shift with |
| + | 1 | M*exc.# | + | 1 | M exc. |
| | 2 | + | | 2 | M |
| | 3 | + | | 3 | M |
| | 4 | + | | 4 | M |
| 1 | + | M exc. | 1 | + | M exc. |
| | 2 | 2 | | 2 | 2 |
| | 3 | 1 | | 3 | M |
| | 4 | 1 | | 4 | M |
| 2 | + | M | 2 | + | 2 |
| | 1 | 1 | | 1 | 1 |
| | 3 | 3 | | 3 | 3 |
| | 4 | 2 | | 4 | M |
| 3 | + | M | 3 | + | 3 |
| | 1 | M | | 1 | 3 |
| | 2 | 2 | | 2 | 2 |
| | 4 | 4 | | 4 | 4 |
| 4 | + | M | 4 | + | 4 |
| | 1 | M | | 1 | 4 |
| | 2 | M | | 2 | 4 |
| | 3 | 3 | | 3 | 3 |

* M = Change fingers in the middle of the shift.
\# exc. = an exception to the rules stated in the text.

**Figure 35: shift fingerings for hiding the "portamento", from Mark Morton's *Double Bass Technique: Concepts and Ideas* (1991, p.81).**

Morton finally recalls some unusual shifting methods as the "Pivot" shift that was already explained in François Rabbath's *Nouvelle Technique de La Contrebasse*, shifting of the thumb in advance of the hand, "hand expansion" and "contraction" that looks like something similar to Rabbath's "crab technique."

### *2.5.3.2 Dr. Morton's Primer Scale & Arpeggio fingerings for the Double Bass*

This first workbook is meant to be used for less experienced double bass players, and at the first sight it seems that Morton gives to the student other indications about fingering that the ones he defended in his *Concepts & Ideas,* especially about the use of open strings. There is a logical reason for that; the use of open strings for the less experienced bassist and student, is an important step toward the mastery of more practically applicable and musically appropriate scale and arpeggio fingerings (Morton, 2000). In my opinion this is a very good workbook for jazz double bass player, as open strings are widely used in this kind of music.

The book is organized in twelve keys in order from E to Eb: major scales, major arpeggios, natural minor, harmonic minor, melodic minor scales, minor arpeggios, dominant 7th arpeggios (built on the fifth degree of the major key they are related to) and chromatic scales. Morton suggests the use of the third finger instead of the fourth starting from a major six above the open string, as he indicates in his first book.

As example I transcribed a C major scale and C major arpeggio and a G dominant 7th arpeggio in two octaves (Figure 36 and 37).

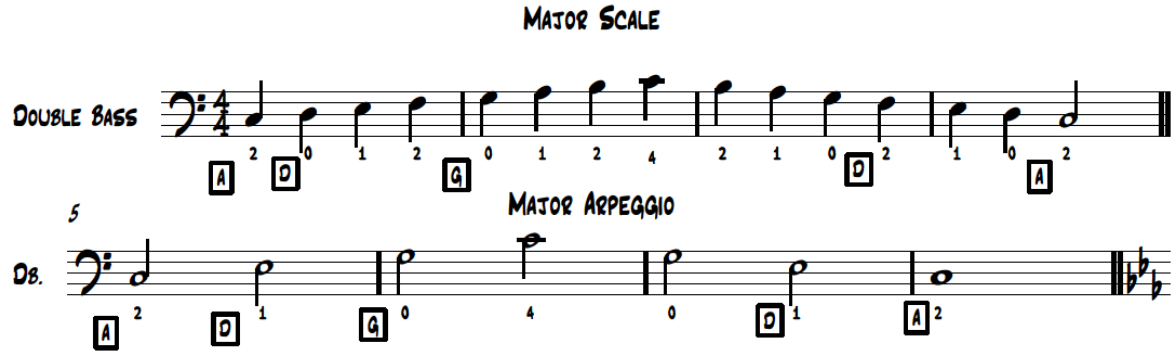



**Figure 36: C major scale in one octave and C major arpeggio from Mark Morton's *Primer Scale & Arpeggio fingerings for the Double Bass*, (author's transcription).**

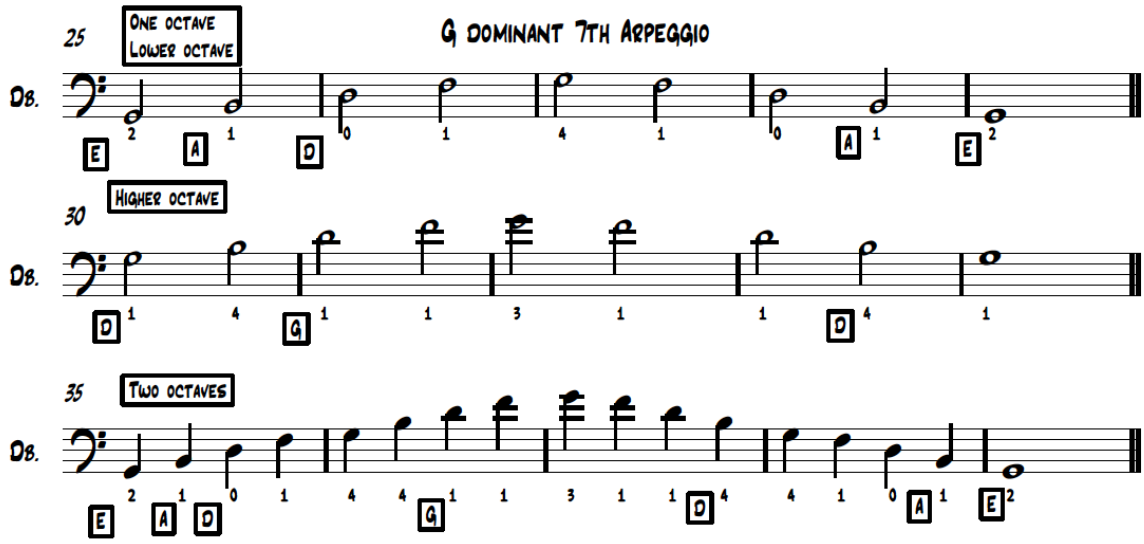



**Figure 37: G dominant scales and two octaves arpeggio from Mark Morton's *Primer Scale & Arpeggio fingerings for the Double Bass*, (author's transcription).**

#### *2.5.3.3 Dr. Morton's Miraculous! Scale Fingerings for the Double Bass and Dr. Morton's Miraculous! Arpeggio Fingerings for the Double Bass*

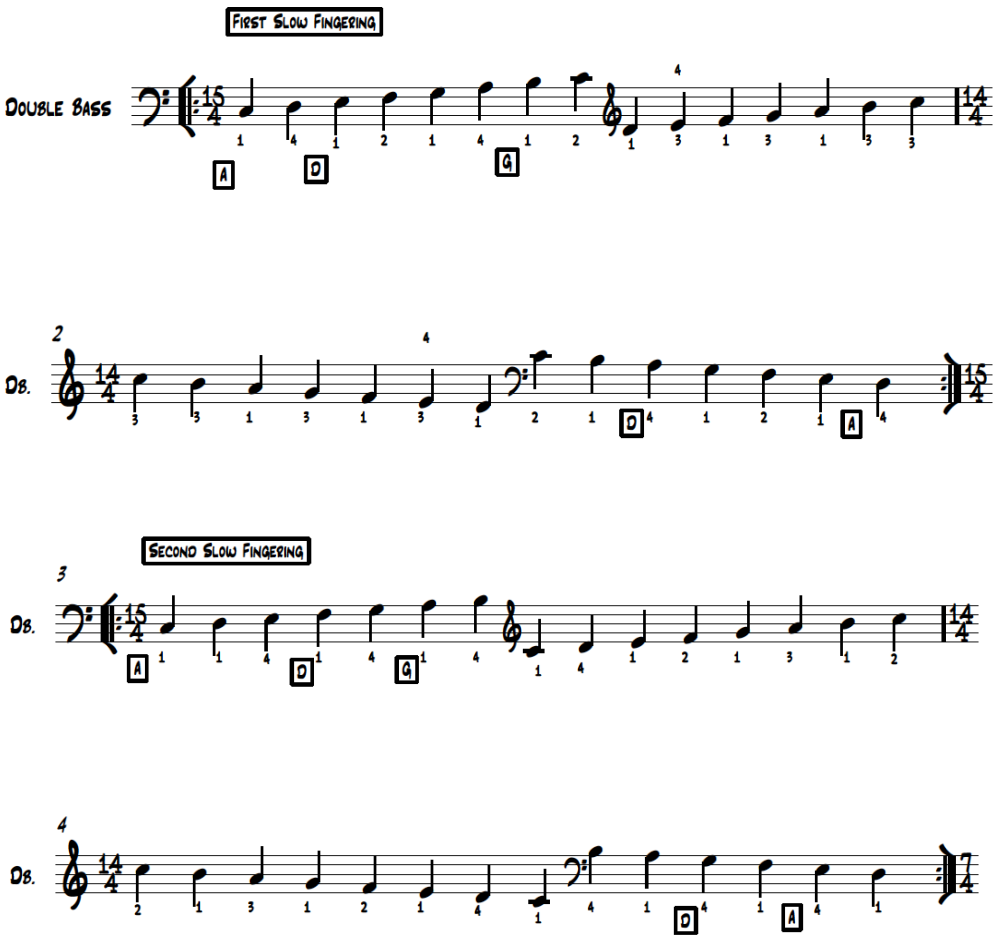
In these two books Dr. Mark Morton sets his ideas and concepts on paper explaining in a clear way how to efficiently finger scales and arpeggios as an effective method to practice technique, to develop intonation, solid tone, vibrato and left/right hand coordination. To produce a more fluid technique, Morton suggests playing scales up and down without pause on the tonic and/or without playing more than one note for each bow direction and for scale degree. On double bass it's almost impossible to invent the ideal scale fingering that fits for every musical situation. A set of different fingering for each scale should be practiced to eliminate variables as much possible in a performance situation. The scale-fingering book presents twelve key centers with 3 one-octave scales, 2 two octaves scales and 1 three octaves scale. Each of these scales has then three fingering possibilities up to a total of eighteen for each mode in each key, plus some occasional different fingering. The characteristics of each scale is the result of what Morton idealized in his *Concept & Ideas* book as it is possible to find two "slow

fingerings" and one "fast fingering" for each scale other than chromatic and pentatonic scales that have only one slow and fast fingering (regular and extension fingering)[46].

In the arpeggios fingering book the twelve keys are covered too and in each tonal center there are major, maj7 dominant 7, augmented, minor, minor maj7, minor 7, diminished, half diminished 7 and fully diminished 7 arpeggios.

Both books have a preface with suggested ways to practice, several rhythmic subdivisions, indication of slow or fast fingering and bowing suggestions.

In Figure 38 and 39 I transcribed one example for each book with slow and fast fingering.




[46] Slow or regular fingering is based on the Simandl's system and fast fingering on extension (or four-finger/Franke's system).

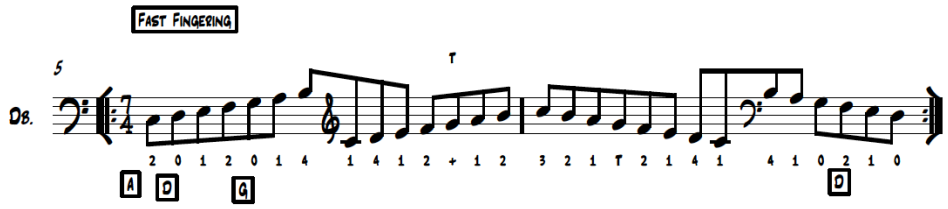



**Figure 38: two octaves C scales. Slow fingerings and fast fingerings from Mark Morton's *Miracolous! Scale fingerings for the Double Bass*, (author's transcription).**

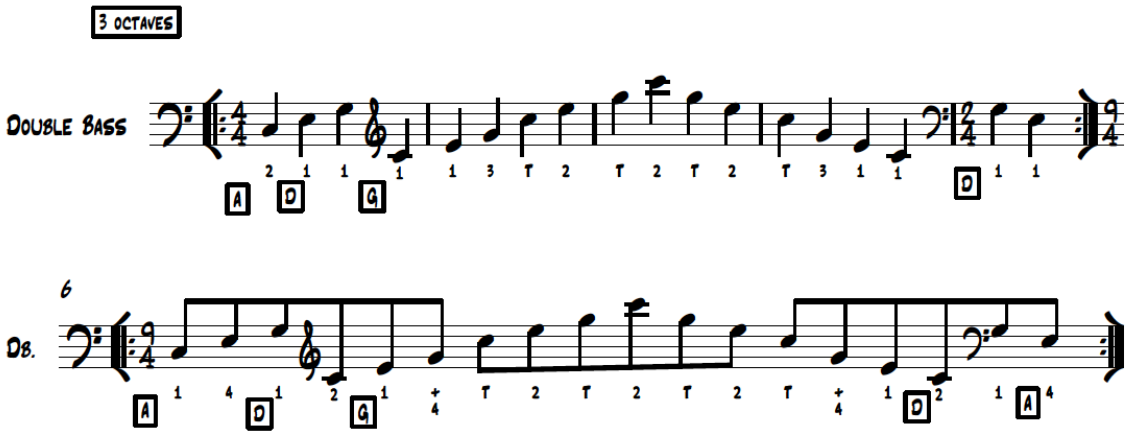



**Figure 39: three octaves C arpeggio. Slow fingering and fast fingering from Mark Morton's *Miracolous! Arpeggio fingerings for the Double Bass*, (author's transcription).**

To close with an analysis of Mark Morton's books, I briefly mention his Simandl-Plus® workbook.

In this workbook there are fifteen fingering strategies and eight notation suggestions. All these tips are meant to be tested using pencil and paper to write fingering for the musical excerpts without using the instrument; it is possible then applies the chosen fingerings and shifting on double bass. As with all the other workbooks, these tips and strategies are the direct consequence of Morton's first work, *Concepts and Ideas*.

### 2.5.4 Jimmi Roger Pedersen[47] and the Scandinavian Double Bass Technique – Left Hand Volumes I-II-II

Jimmi Roger Pedersen has written four books; three of them are about the fluid use of the left hand (*Left Hand I-II and III*), that I'm going to describe now and one is about the use of right hand three finger technique (*Right Hand I*), that will be analyzed in chapter 4.

Jimmi Roger Pedersen is a jazz player, but his books will be analyzed in this section because he approached the left hand technique as nobody else did in jazz methods books. He developed his own method based on his awareness of Niels-Henning Ørsted Pedersen's study. He claims that the only way to be prepared for any musical challenge, especially on stage, is to technically master the instrument, suggesting that the serious student has to approach others schools/methods too in order to achieve this goal.

The first booklet introduces the concept of primary and secondary shifting, which is crucial for the understanding of this method and gives the possibility to the reader to choose any finger to play any note any time. Pedersen's primarily target is to develop solo

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[47] Jimmi Roger Pedersen studied with the legendary double bass player Niels-Henning Ørsted Pedersen (NHØP) at the Rhythmic Music Conservatory in Copenhagen, Denmark. In his carrier he toured with artists such as Horace Parlan, Benny Bailey, Al Grey, and Lee Konitz. He recorded more than one hundred records including two bass solo albums. He was nominated as best solo instrumentalist in at the 2009 JPF Music Awards in Nashville. He is chairman of the Danish Bass Society, president of Basseurope (European Society of Bassists) and was the artistic director of the 2012 European bass convention, "Bass in Copenhagen." He has his own company (doublebass.dk), which mainly publishes his music and his methodology for the bass.

Over the years he developed a technique based on a fluid and mobile left hand playing with the four fingers technique and using a right hand 3 fingers pizzicato. All these devices are heritages of his teacher Niels-Henning Ørsted Pedersen, especially the ability to use his right hand in a type of "perpetual motion," where the basic subdivision of the improvisation (typically eighteenth notes) is continuously articulated in the right hand while the left hand either stays in position or shifts to a new position (Butterfield, 2008).

playing encouraging the utilization of the thumb in others places then the ordinary thumb position, using all four fingers of the left hand in the lower positions and utilizing the traditional Simandl fingering system in order to save energy.

He divides the neck into main position and thumb position. This allows the possibility to the player to use the thumb in lower positions then the octave of the open string. He asserts that the tone of the thumb doesn't have the same resonance as with the other left hand fingers, so it is a player's choice to decide what is the best fingering to achieve best musical results. When shifting, the change from main position to thumb position takes longer then other kinds of shifts (primary and secondary). In the ascending phrase, the passage from main to thumb position should be as late as possible. While in descending passages one must proceed in the opposite way. For best results, it is better to play the same passage in the same position. In thumb position, the fourth finger is not used as in many other methods/schools. Pedersen does not divide the fingerboard in regular schematic positions (as do Billè, Simandl and many other) so the learner has to know the fingerboard very well.

#### *2.5.4.1 Primary and secondary shifts*

Basically a secondary shift defines a "range," where the fingers of left hand move; a primary shift is a movement into a new "range." To better describe this statement, it is possible to say that a shift in an ascending phrase is primary, when using a finger with the same or lower number then the preceding one (ex. finger 1 to 1 or 4 to 1), and it's secondary if we use a finger with a higher number than the preceding one (ex. finger 1 to 2 or 2 to 4). In descending phrases a primary shift is the one that uses the same finger or a higher one than the preceding one (ex. finger 1 to 4 or 3 to 4), and there is a secondary shift when using a finger with a lower number than the preceding one (ex. 4 to 2 or 4 to 1). In Figure 40 there is a schematic overview of shifts, both in main and thumb position,

however the difference between primary and secondary shifts will come clear in the next musical examples.

SCHEMATIC OVERVIEW OF SHIFTS IN MAIN AND THUMB POSITION

| | Movement along | Movement across | Number of finger | Definition |
|---|---|---|---|---|
| SHIFT | Upward | None, up or down | Higher | Secondary |
| | | | Lower | Primary |
| | | | Same | Primary |
| | Downward | None, up or down | Higher | Primary |
| | | | Lower | Secondary |
| | | | Same | Primary |
| | None (in main position) | None, up or down | Higher | Primary |
| | | | Lower | Primary |
| | | | Same | Secondary* |
| | None (in thumb position) | None | Higher<br>Lower<br>Same | Primary<br>Primary<br>Secondary |
| | | Up | Higher<br>Lower<br>Same | Secondary<br>Primary<br>Primary** |
| | | Down | Higher<br>Lower<br>Same | Primary<br>Secondary<br>Primary** |

*) Secondary shifts presuppose that the same finger is able to press down multiple strings across – a so-called "Barre".
**) If the same T. finger - at no movement along and movement across - is able to press down multiple strings across, the shift will be secondary and not primary.

**Figure 40: schematic overview of shift in main and thumb position, from *Scandinavian Double Bass Technique – Left Hand I* (2009, p.10)**

In the first booklet, all the exercises are written in A major key because Pedersen states that it is useful to check the intonation using the open A string. Approximately 3/4 of the exercises of this first volume are about the G string leaving only the last exercises addressed to the use of both G and D string. The exercises start with first and second degree of the A major scale. He explains through practical examples the definition of the primary and secondary shift, increasing then the number of scale degrees until completing a one octave scale. The examples use several fingerings, different primary and secondary shifting and four rhythmical variations (Figure 41).

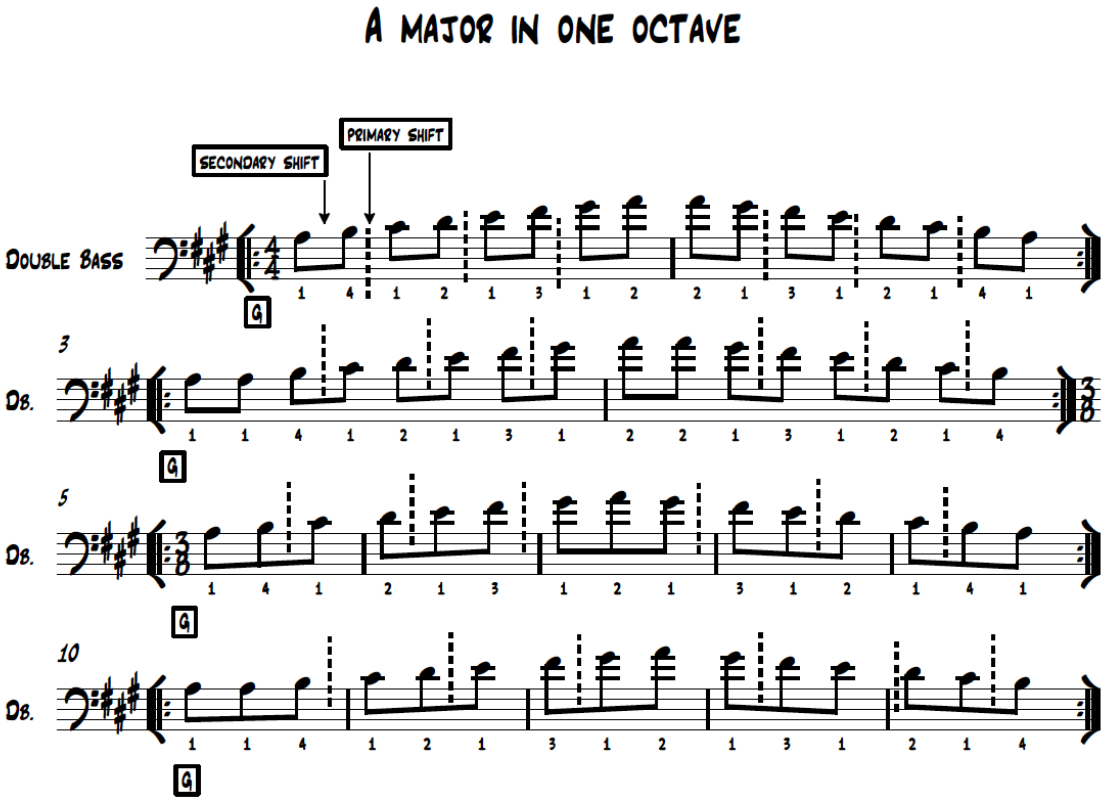


**Figure 41: A major scale in one octave with four rhythmical variations from *Scandinavian Double Bass Technique – Left Hand I* (author's transcription).**

The second booklet's exercises are more difficult including them in all the major keys. All the exercises use only the G string, but the whole process could be applied to the others strings too. All the fingerings start or finish with the first finger in main position and with the thumb in thumb position; in ascending progression the thumb moves as late as possible on the front side of the fingerboard while in the descending progression it will happen exactly the opposite. In some exercises the rhythm could also be displaced and in this way the accent will change by using 12/8 or 3/8 compound time. The progressions inside the exercises are movements in ascending or descending seconds with additional notes between the steps (second down, third up, third down, fourth up and down, then one second and one third up and down) and progression in the fifth adding the same notes as written above between the steps. To illustrate this concept, I transcribed the following

examples (Figure 42) showing the basic exercise and then its evolution adding notes between steps.

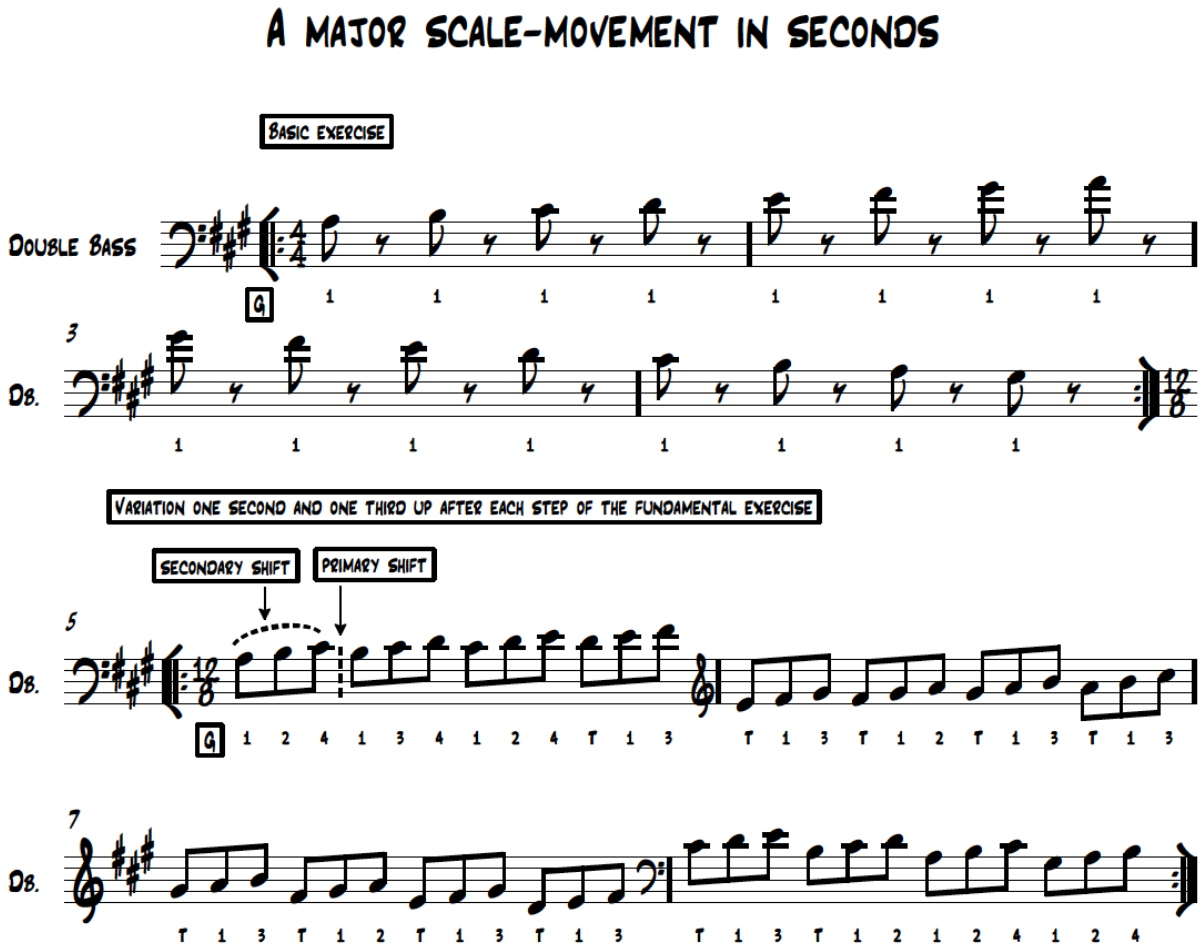


**Figure 42: A major scale in one octave, movements in seconds. Basic exercise and variation from *Scandinavian Double Bass Technique – Left Hand II* (author's transcription).**

Notice that in the variation of this exercise, the secondary shift in bar 5 is exactly equal at what François Rabbath and Mark Morton call a pivot shifting.

The third booklet continues the evolution of Left Hand I and II. As usual, the exercises develop around the A major scale in one octave and then in the twelve keys. The main difference now is that this time Pedersen uses the G and D string, applying the same progressions and rhythmic variations as in book two but in both strings, as I explain in Figure 43.

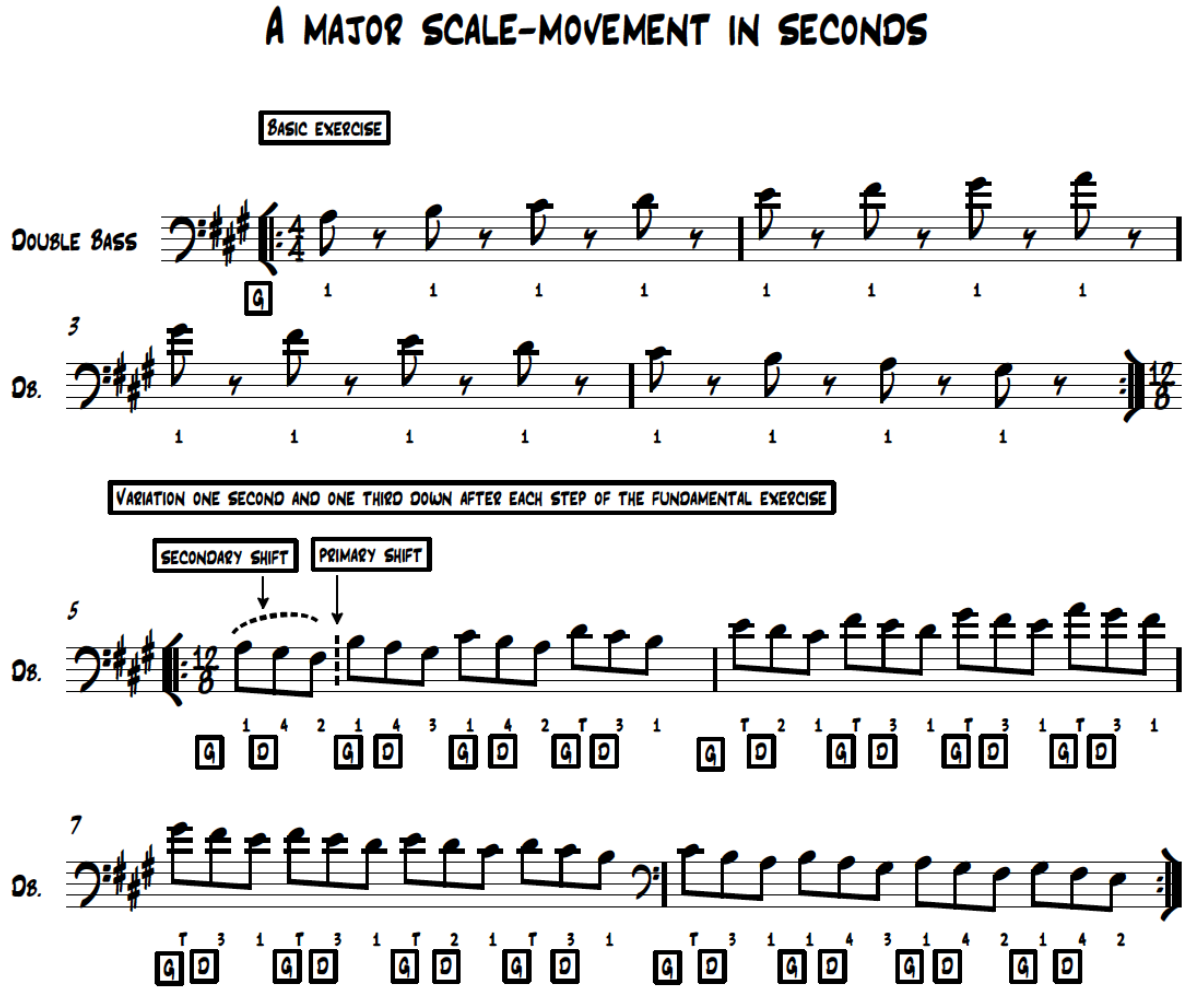


**Figure 43: A major scale in one octave, movement in seconds. Basic exercise and variation from *Scandinavian Double Bass Technique – Left Hand III* (author's transcription).**

Some considerations have to be made regarding these three booklets. They develop the extended use of the four fingers technique and thumb in other points of the fingerboard than the thumb position. The method is progressively starting with an A major scale in one octave and then spreading the concepts to all the others key. In my opinion, sometimes the concepts are not so clear, so the reader has to carefully play the exercises in order to understand the meaning of some of the definitions used by Pedersen. I hope that the author will develop his concept by writing more booklets about minor

scales too. However, for the experienced player it is possible to apply these ideas to other scales and modes. These booklets are downloadable from Pedersen's site in digital format[48].

### 2.5.5 Michael Barry Wolf: Principles of Double Bass Technique

The *Principles of Double Bass Technique,* by Michael Barry Wolf (2011), starts with an interesting question, "If I want to produce this sound and can't what should I do?" and the answer fills 241 pages in which he explains how to acquire all the elements that help the double bass player to achieve his artistic needs. As in Mark Morton's *Concepts and Ideas,* this book starts with a comprehensive analysis of the body (posture, motions and muscles) and the double bass, integrating the two components for an excellent sound production. I will focus on three chapters of this book: fingering, shifting, scales and modes.

#### *2.5.5.1 Fingering*

Wolf argues that everybody, no matter hand or instrument size, can play double bass using the four-finger system[49]; this can be done basically using a "general hand position" that should be used in both lower register and thumb position and an alternative hand position that is useful if the fourth finger is used as a quick passage.

The general hand position is the result of a compromise among several possibilities and is thought to help the fourth finger balance the strength difference between fingers. This makes the extensions easier, as the opening between the first and the second finger is effortless compared to the third and the fourth. As can be seen in Figure 44 (starting from the left), the general left hand position and posture are the same in terms of finger

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48 http://www.doublebass.dk/?Teaching:Publications

49 (Wolf, 2011)

directions (first finger in low position and in thumb position and forth finger in low position and third in thumb position) and relaxed posture, in low register as in thumb position.

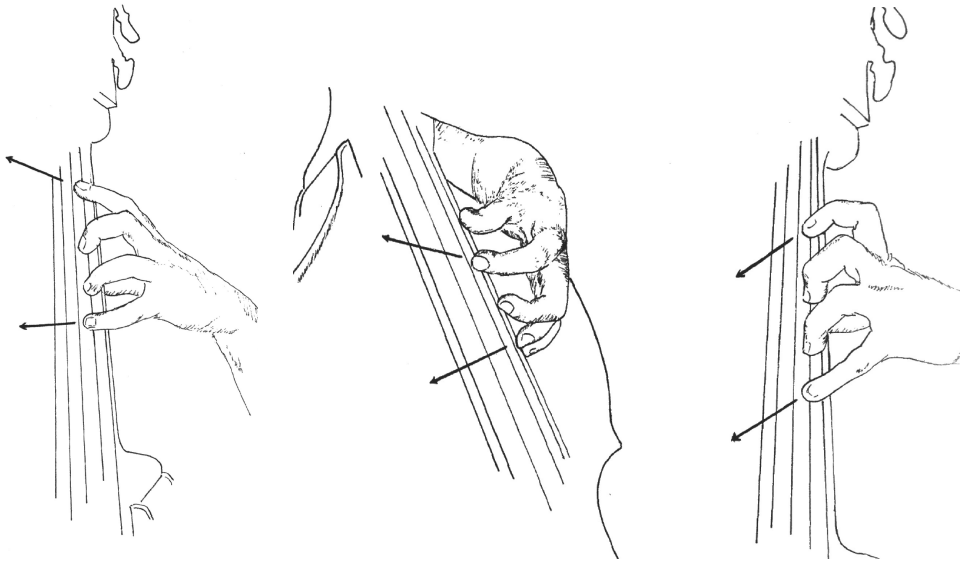

**Figure 44: General hand position in low position, in thumb position and alternative hand position from *Principles of Double Bass Technique* (Wolf, 2011, p.101-102)**

Wolf suggests that when using the four fingers it is not necessary to strongly press the string if not playing a note at that moment[50].

According to Wolf the four-finger system has great advantages; for example when playing a minor third without any problem or a major scale in one octave in the same position (as on the electric bass). This is a contrast to Simandl's method. Additionally the average time of each of the four fingers playing is reduced from 33% to 25%. However when approaching this technique, it could be possible for the first time that the knuckles

[50] As when playing B on the G string with finger 4, fingers 1, 2 and 3 should be gently supported on the same string and not firmly press as taught in others methods; maintaining however the fingers near the string in order to be ready to use them at any time.

of left hand fingers collapse while playing, so Wolf developed some easy exercises that will improve and eventually eliminate this tendency[51].

#### *2.5.5.2 Thumb position*

Wolf asserts that the common use of the thumb as an "extension tool" is misconceived[52]. He claims that it is much easier to have a few numbers of hand positions in order to play the most common diatonic intervals. He divides these common positions in chromatic, whole tone, and tetrachordal[53]. Chromatic, as in the lower position, is the one in which all the fingers are divided by half steps; practically the T-1-2-3 fingering in thumb position is the same as 1-2-3-4 position in lower register. A whole tone covers an interval of the major third and has a tone between the thumb and first finger and between the first and the third, or alternatively, among the thumb, the second and third finger. This position in the lower register would be an extension and should be played on two strings. Tetrachordal includes all the positions in which the thumb and third finger distance is a perfect fourth, called major, minor, diminished, and augmented positions. In the thumb position, the tetrachord is played on one string; in the lower position this could not be done.

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51 There are several of these exercises; one of them is to grab the left hand palm with the right hand, resting the fourth finger on the right thumb until the second joint is at a 90º angle. Then begin to bend and straighten the first joint very slowly while being completely relaxed. Progressively exert more pressure with the left hand fingertips on the end of right hand thumb and repeat this exercise for all the four left hand fingers. This example is one of Wolf's silent exercises; exercises that could be done without the bass but that have a direct relationship to technical and postural improvements. This is another example of the fact that nowadays the players are aware about the importance of physical and mental fitness as a necessity for musical improvement.

52 In opposition to what Morton defends in his first book.

53 These are the same finger configurations, but with different names, that Petracchi uses in his 1980 book *Simplified higher technique for double bass*.

As in other systems and methods, Wolf explains the meaning of extensions, contraction, replacement, trills, plus how to finger the fourth (bridging, parallel fingering and pinching), how to use the thumb in lower positions, play harmonics (naturals and artificial) and how to choose fingering. However what is important for the understanding of his "tetrachordal fingering" is the definition of extension, contraction and replacement, concepts also presented in François Rabbath and Mark Morton's literature. There is an extension when two adjacent fingers are separated by a whole tone; generally extensions are played in between the first and the second fingers. Wolf defines a contraction when an interval smaller than the expected one is played between two fingers. Replacement is when the same note is played but at a certain point there is a switch of fingers.

To choose the right fingering is the goal of every player, and in order to do that, it is important to reflect on these issues: a shift and a bow change should happen at the same time; a shift should follow staccato notes or precede accents. However is not always good to combine them with string crossing; avoid shifting from a weak beat to another weak beat; shifts on strong beats are strongly recommended. The shifts need be chosen conform to a style of music, key or mode, rhythm and harmonic motion, tempo and sound. Reflecting on tempo, there are some left hand fingerings that are not useful for fast tempos, especially when dealing with bebop tunes or some very quick orchestral passages. In order to prevent this problem, it is suggested that the musician should practice a piece at the real tempo to discover the proper fingering that suites the challenge. Sound is also important; simply stated, the player should chose the fingering that sounds best no matter correct technique.

However all these Wolf's recommendations make more sense when applied to a classical music environment because the accents in jazz performance are normally on the weak beat (two and four beats or on the up beat in a mainstream jazz setting) and the use

of the bow is welcomed but not necessary. Continuing in this order of ideas, the chapter on shifting in Michael Wolf's book is strongly concerned with the use of the bow. I'm not going to analyze this deeply but instead present the general idea he identifies; two kinds of shifts, the short one and the long one. Both of them are motions derived from vibrato; a vibrato-like extension of the fingers combined with a twisting of the lower arm (in Morton's book called forearm) is called a "short" shift. The ones called "long" shifts are the consequences of upper arm movement. The short shift is only in neighboring positions, as the long one could be of any size, but it's important to smoothly create the shifts with the right motion (Wolf, 2011).

#### *2.5.5.3 Scales and Modes: tetrachords fingerings*

This is the key chapter of Wolf's book because I found lots of similarity between his fingering and the "standard" electric bass fingering. In Wolf's book, scales are represented as tetrachord series (four consecutive notes) and the most common are: major, minor, locrian, augmented and diminished.

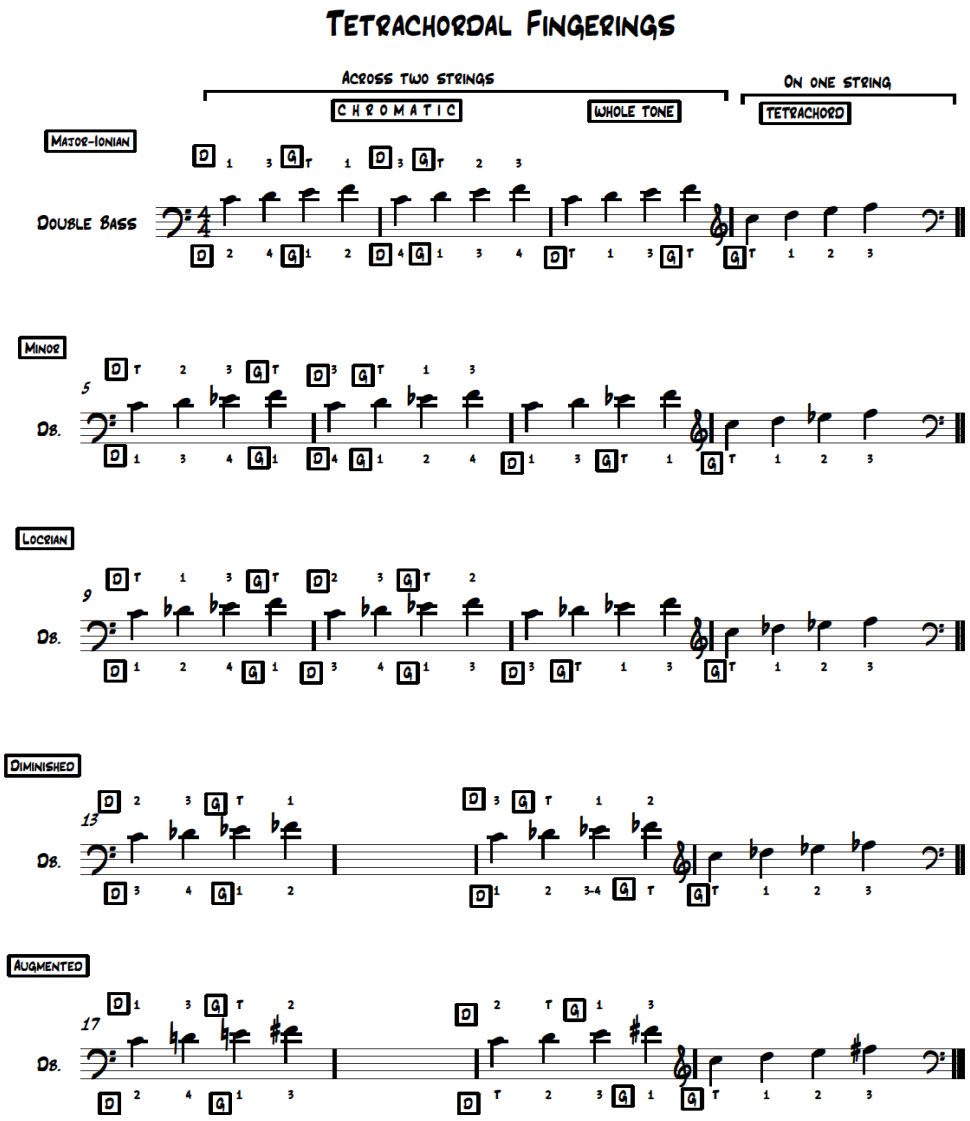


**Figure 45: Tetrachord Fingerings from *Principles of Double Bass Technique* (author's transcription).**

All these fingerings enable playing any scale and mode through combinations of tetrachords. It is possible to replace string crossings with shifts; in this way, using the same fingering can be played the same scale/mode on one, two or three strings.

Here there are some examples of modal fingerings in the lower position using chromatic tetrachord combinations (Figure 46).

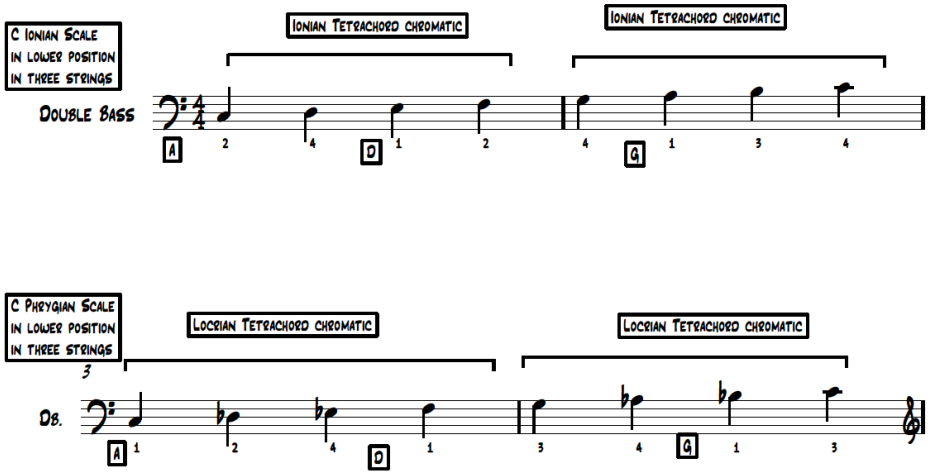


**Figure 46: Tetrachord application to modal fingering in the lower position, from *Principles of Double Bass Technique* (author's transcription).**

The same could be applied to the thumb position by substituting the 1, 2, 3, 4 fingers used in the lower position by T, 1, 2, 3 in thumb position (Figure 47).

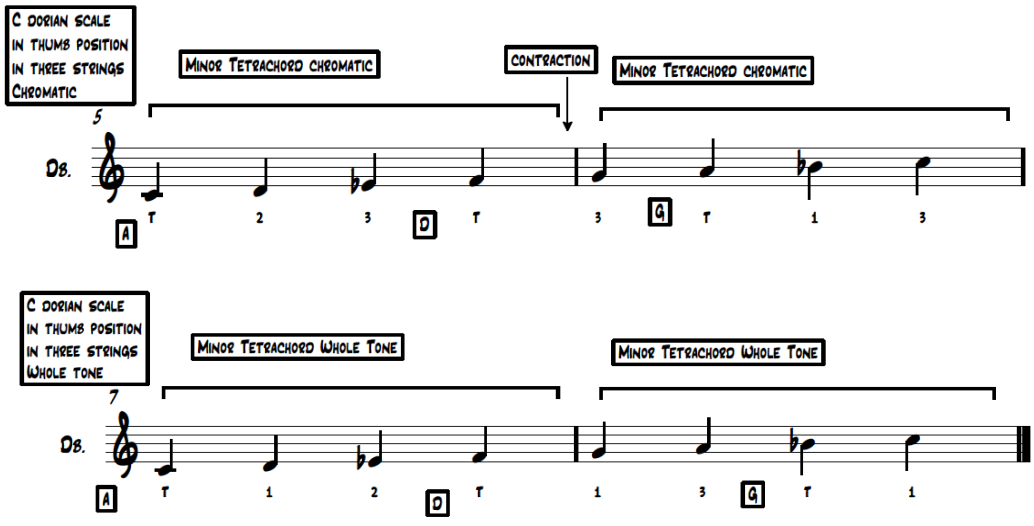


**Figure 47: Tetrachord application to modal fingering in the thumb position, chromatic combination and whole tone combination from *Principles of Double Bass Technique* (author's transcription).**

In the thumb position the tetrachord can be played by one string. In this way, one has the chance to produce a one octave scale using just two strings, but as the double bass is tuned in fourth (and not in fifths as are all the other stringed instruments) a "transition position" is needed that allows to "adjust" the position when proceeding to the string crossing shift (Figure 48).

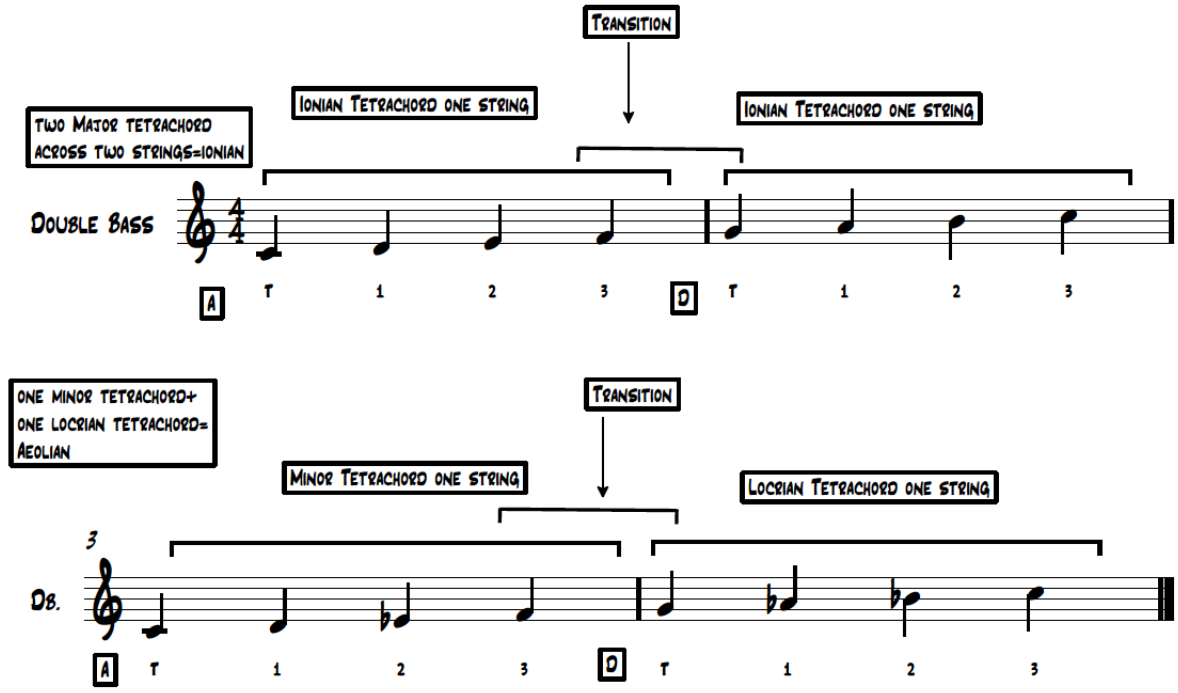


**Figure 48: Tetrachord fingering across two strings with transition positions from *Principles of Double Bass Technique* (author's transcription).**

In the case of the major scale, two major tetrachords are played; as soon as the first three notes of the first tetrachord (C, D, E) are played, the thumb moves up a whole tone (on D) and the first finger a half tone (Eb) creating a chromatic position with the thumb on the second note of the scale (D thumb, Eb first finger, E second finger) as the third finger reaches the fourth note (F), the thumb moves to the next string (reaching the G note aver D string), ready to start a new major tetrachord.

The second example is one minor tetrachord plus a locrian tetrachord (a natural minor or aeolian scale), so when playing Eb with the second finger, the thumb moves one whole

tone ahead, and the first finger goes from D to Eb as soon as the third finger plays F. Then the thumb is ready to hit the G on the D string and then play the rest of the locrian tetrachord.

Almost at the end of this method, the Wolf adapts some of the exercises for the three fingers technique (Simandl) suggesting specific shifting to avoid shifts to and from the same finger such 1-1-4 (contrasting with Morton's system). He states that utilizing shifts, as 1-2-shift-4 or 1-shift-2-4, the left thumb could be left in the same spot, as the hand freely pivots between two positions (Wolf, 2011).

In my opinion *Principles of Double Bass Technique* is without any doubt helpful to understand the method link the double bass and the electric bass. The left hand positions, because of the modal fingerings in the lower positions, use the same standard modal left hand fingering on electric bass.

### 2.5.6 Others methods

During my research I found other interesting texts that I will briefly analyze. The first one is Eugene Levinson's book *The School of Agility: A Technical Method of the Scale System for String Bass*[54].

Levinson's book is his own adaptation of Carl Flesh' principles which encouraged the violin player to explore all the extensions of their instruments while playing scales and arpeggios. Levison's idea is to develop fingering to improve rhythm, intonation and agility, privileging string crossing in fast passages.

In this book are included twenty four major and minor scales and their arpeggios, and it begins from the lowest sound on double bass E then working chromatically upwards.

[54] Mr. Levinson was born in Kiev (former U.S.S.R.), and after his studies became a successful bassist in Leningrad Chamber Orchestra and Leningrad Philharmonic. In 1977 he moved to the U.S. and continued his brilliant career as a virtuoso player and teacher.

There are a wide variety of fingerings; the objective of each is to facilitate the shaping of musical phrases by creating smooth transitions from one position to another or during string crossing (Levinson, 2002).

At the beginning of this book there are basic rhythmic and bowing patterns that have to be applied to all the exercises as a daily study, then the symbols table that he uses in his own fingerings notation. Only as one example in E major, he presents sixteen ways to finger a three octave scale, four for E harmonic minor, twelve for E melodic minor, sixteen for E natural minor and seven arpeggios starting from E in three octaves (Em, E, C#m/E, A/C#, Am/C, E diminished and E7). In some of these fingerings he uses all the four fingers playing, sometimes three notes for string, but the big difference compared to the Franke's system is that a whole tone can be played only between the first and the third finger, and this never happens between the second and the fourth finger (Lago, 2010).

In ***Kontrabass-Studien volume I Akkord-Studien*** and *volume II* ***Instruktive Tonleiter-und Akkordstudien,*** Edward Madensky's approach to arpeggios and scales is very interesting especially when one is aware of the historical period in which these two books were written. There is little information about this double bass player, teacher and composer, but by the time these *kontrabass studien* were published, they were considered as fundamental to the literature on the double bass. Today few double bass players know about this method, perhaps because the use of the left hand fourth finger in thumb position instead of the third one, or because is quite difficult to access to these two volumes, especially the first one.

The first volume is about arpeggios: major, minor, diminished chords and augmented triads and inversions; arpeggios of dominant seventh, half diminished, diminished chords (major with major $7^{th}$ chord is not analyzed). All the exercises are divided into triads and four note chords, "small" analysis where the triads and inversions

are played in this order; root position, 1st inversion, 2nd inversion and the four notes chords are played by root position, 1st inversion, 2nd inversion and 3rd inversion. The fingerings follow the standard German school with some modifications; in first book the progression of the exercises is chromatic, ascending from low E to Eb (as Levison's book). The arpeggios maximum high note is Bb4 (the first Bb in thumb position). Madensky does not discuss the use of the thumb at all in the first book and instead of using the third finger in thumb position he defends the use of the fourth finger.

To understand Madesky's personal approach to left hand fingering it is necessary to read his second book where he states that in his experience the passage from regular to thumb position using the thumb doesn't help to create a clear change of position, while the use of the 4th finger of the left hand in thumb position (as in regular low position) will make this passage easier and smoother. The thumb (in thumb position) is allowed when the notes to be played lie within the span of one hand (Madensky, 1941).

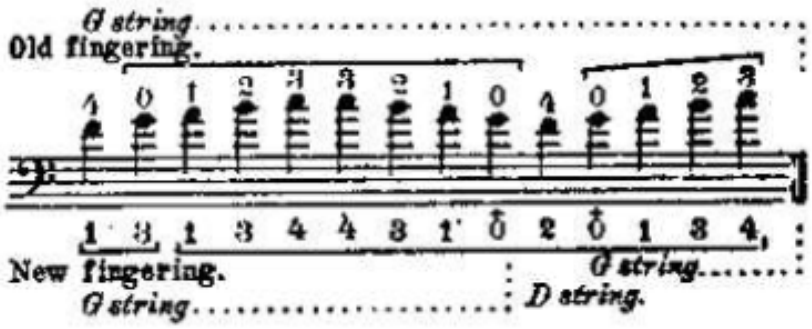


**Figure 49: Madensky "new fingering" using the 4th finger in thumb position and thumb use from *Kontrabass-Studien II: Instruktive Tonleiter- und Akkordstudien* (1941, p.3).**

The second book starts with scales from the key of C chromatically ascending till B. Every exercise shows major, harmonic and melodic minor scales, major and minor triads arpeggio and inversions, dominant seventh arpeggios related to the key center, G7 in the C major key and Bdim7 (G7b9 without root) chord for C minor, all in two octaves.

At the end of the book, the dominant seventh chord and diminished arpeggios in three octaves are found.

***Simplified higher technique for double bass*** is today a standard textbook on studies for the thumb position. Francesco Petracchi is worldwide acclaimed virtuoso double bassist, composer, director and educator. In his book Petracchi's explanation of positions is clear and the difficulty of the exercises is progressive and conceived as daily exercises.

Petracchi classifies three basic thumb positions: chromatic, semi-chromatic and diatonic. Chromatic comprise a minor third between the thumb and 3rd finger (every finger distance is a half tone as Michael Wolf's chromatic position). In the semi-chromatic position, the distance between the thumb and 3rd finger is a major third (as Wolf's whole tone). The diatonic position is defined by the distance between the thumb and the 3rd finger that is a perfect fourth (Wolf's tetrachordal). To these basic positions some "extensions" positions must be added (Figure 50).

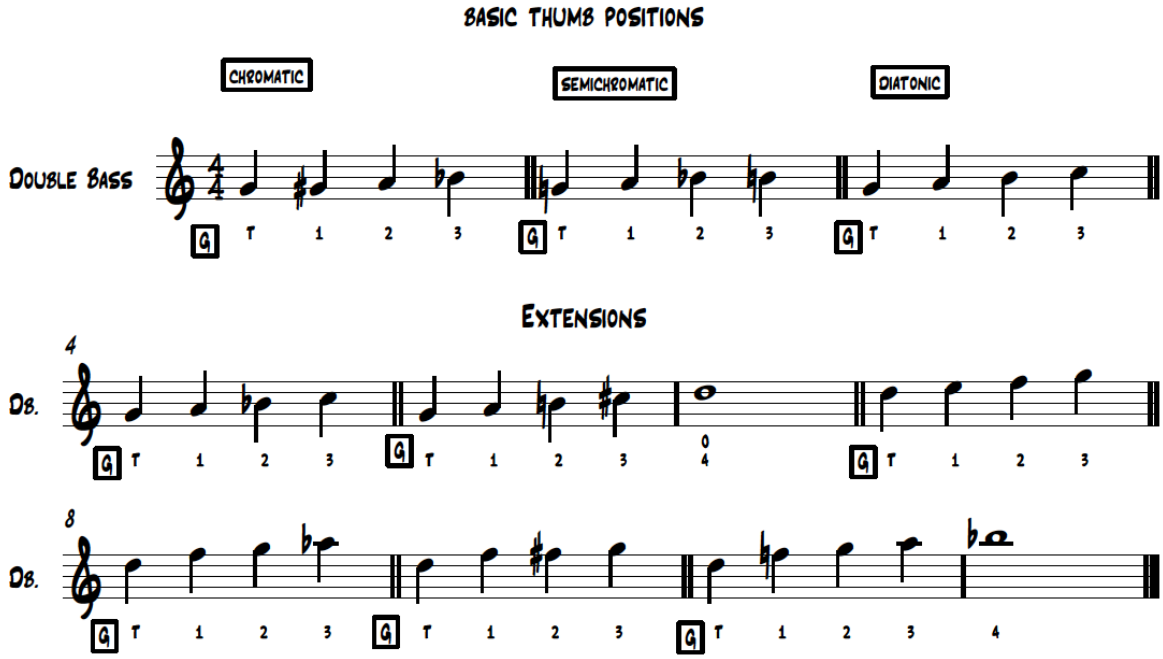


**Figure 50:** ***Simplified higher technique*****, fingering system (author's transcription).**

Petracchi developed exercises to create smooth transitions during the thumb position changes. The first one is about the major and minor natural scales, with an ascending progression in third (1st to 3rd scale step, 2nd to 4th scale step etc.). There are in both the major and natural minor scales, seven positions: four chromatic and three semi-chromatic. To obtain a good legato, the thumb anticipates the next position by moving a tone in advance when the interval is a major third, or a semitone if the interval in a minor third (Petracchi, 1980). Then the other exercises that progressively introduce more challenges to help master the thumb position with diatonic scales in all keys, fifth, octaves, third and fifth, mobility, hand flexibility, hand agility, legato, dominant seventh chords, arpeggios and harmonics, fourths, orchestral excerpts and advanced studies.

In his prefatory note, George Vance introduces his ***Vade Mecum for the double bass*** as an handbook that he uses, after years of teaching experience, to prepare students for *Nouvelle Technique de la Contrebasse* by François Rabbath (Vance, 2000). So all the scales, fingerings, position divisions, pivot movement exercises, 4th position exercises (basically the thumb position), left hand exercises etc. are based on the Rabbath method. This manual is very clear and easy to understand with exercises that progressively help the transition from Simandl's to Rabbath's school. From this point of view, the *Vade Mecum* is a great book for intermediate classical students or experienced jazz players who want to be introduced to the Rabbath way of playing.

***Advanced Technique for Strings: Techniques and Style Studies for String Orchestra - Essential Elements Method - Double Bass*** is a small manual that is part of a larger collection for all stringed instruments. This guidebook is divided into four main sections: scales and arpeggios, shifting studies, rhythm and bowing studies and musical styles (in the classical music field). It is a book that uses the Simandl division of the neck and fingering with 3 octaves scales and 3 added notes at the beginning of the scale and at

the end, creating a 24 note system that according to the authors can make the scale more versatile for using different bowings accommodating slurring patterns of 2, 3, 4, 6, 8, 12 and 24 notes (Allen, Gillespie, & Hayes, 2000).

# Chapter 3

# 3 Left Hand Fingering for Double Bass: Jazz Methods

## 3.1 Literature Review: introduction

As seen in the historical literature of the double bass, left hand fingerings, schools and methods, appeared long before jazz music. Many jazz methods are a sort of adaptation to jazz studies of older or more recent classical left hand systems[55]. The large majority of these books utilize the Symandl fingering method, however due to their specific application to various matters of great importance for this study, I analyzed some of them. I structured this chapter differently from the previous one[56], connecting the different books when a specific technical item was approached; when possible I compared the way different authors covered the same issue. However in some cases, I focus on one entire text because of its well-structured organization and deep approach to technical issues.

I analyzed *The Evolving Bassist* (Rufus Reid), *Jazz Bass Compendium* (Sigi Busch), *Comprehensive Bass Method for Jazz Players* in two volumes (Hein Van de Geyn), *Melodic Playing in the Thumb Position* (Michael Moore), Ron Carter´s *Comprehensive Bass Method*, Ray Brown's *Bass Method*, the *Intonation Plus* by Lew

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[55] In this chapter I will only discuss left hand fingering; jazz methods are the only ones that speak about right hand fingerings (right hand pizzicato in orchestral environment is quite different than jazz pizzicato); this issue will be treated largely in chapter 4.

[56] In chapter 2 the different methods were approached individually.

Berryman, *The Jazz Bass Book* (John Goldsby) and *The Improvisor's Bass Method* by Chuck Sher[57].

## 3.2 The Books

All the methods here analyzed agree about the fact that in a jazz mainstream situation the bassist should be able to build solid bass lines and improvisation phrases that are strictly related to the melody, chord progression or key center and that respect the song form. The serious study of arpeggios and scales increase exponentially the bass player knowledge of the fingerboard. Arpeggios in one or two octaves with inversions and scales in thirds, fourths, fifths, sixths, sevenths and octaves are the basics for a jazz player to practice every day. Ray Brown in his *Bass Method: Essential Scales, Patterns and Exercises* includes only few exercises with fingerings; forcing the student to think when practicing, finding his/her own way (Brown, 1999). As reported before, this is a common practice in almost all the jazz methods, to give some guidelines and then leave the student to think on his or her own about solutions.

[57] This book has the particularity that is written for both electric and double bass players.

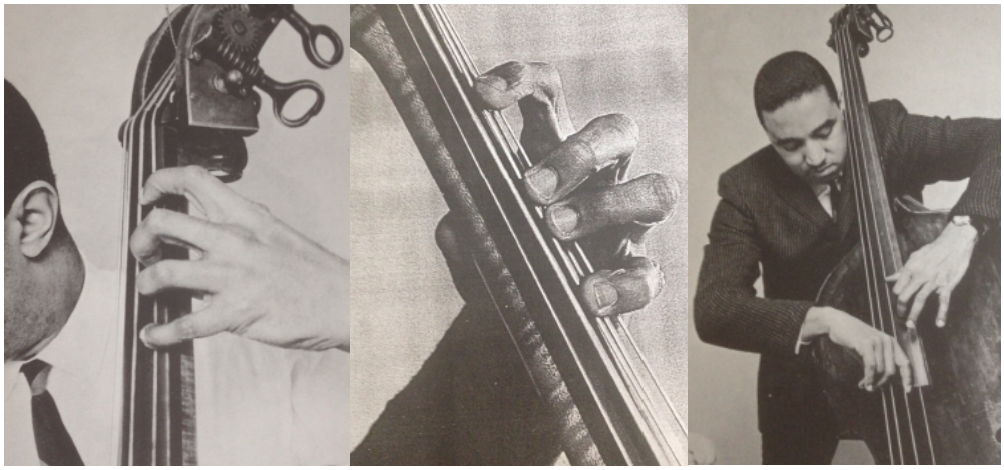

**Figure 51: Ray Brown's left hand position (left), Ron Carter's left hand position (center), Ray Brown's upper thumb position (right), from *Ray Brown's Bass Method* (1999, p.9-10) and *Ron Carter Comprehensive Bass Method* (1977, p. 5).**

In both Ray Brown's and Ron Carter's methods nothing is specifically written about the left hand fingering and the position of the left arm while shifting. However it is possible to have an idea about left hand posture and shifting by looking at some of the pictures inside the books (Figure 51).

It is interesting to compare how Ron Carter and Ray Brown approach the one octave scale on three strings (Figure 52); Ray Brown sometimes uses what he calls "extension scales" which is also known as the Franke system or four-finger system[58], while Ron Carter calls it a "horizontal technique" which seems more similar to François Rabbath's left hand technique[59].

[58] See chapter 2.

[59] Idem.

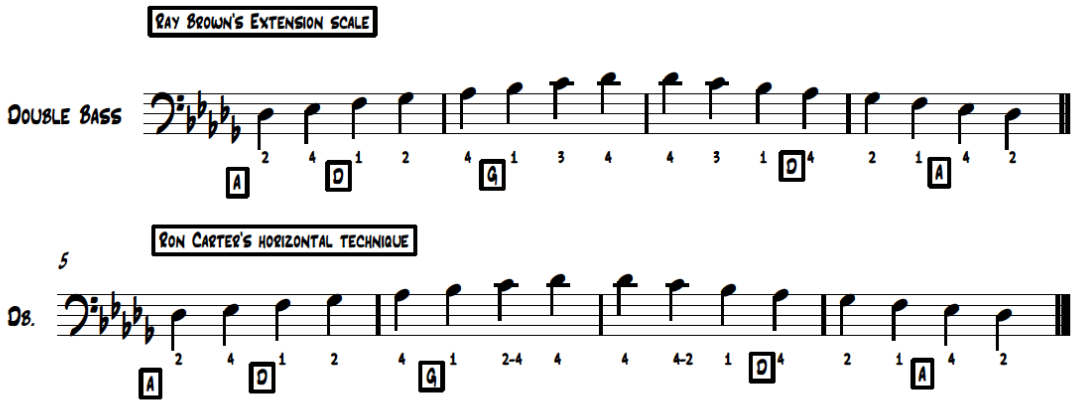


**Figure 52: Comparison between Ray Brown and Ron Carter fingering (author's transcription).**

**Figure 53: Ray Brown's position of the left hand for extension scales and exercises from *Ray Brown's Bass Method* (1999, p. 106).**

Mr. Brown begins to use the extension fingering from Db[60] as shown in Figure 53, which is the intermediate position between the second and the first position laid down in Simandl's system.

[60] Ray Brown uses a four-finger technique starting from Db because the distance between half tones become shorter, this is his personal choice while others players continue to use Simandl's fingering in that same range.

The majority of the jazz methods do not assume any standard division of the fingerboard; it is a fact that in John Goldby's book few instructions will be found on left hand fingering or positions, because in his words, this is only basic information and suggestions that invite the student to invent, transcribe and write his or her own exercises (Goldsby, 2002). Despite that, *The Jazz Bass Book – Technique and Tradition* is a valuable source of historical and other technical information that every serious jazz bass player should acquire.

During my investigation I found two methods that use the standard Symandl's system division, *Intonation Plus* and Ron Carter's *Comprehensive Bass Method*. Carter's book approaches technical issues as Simandl or Billè's books would do; as in these methods he demonstrates with pictures how to hold the bow (German and French), providing bow exercises and studies for each of the six positions covered (the seventh Simandl position is not treated in this book). Scales in one or two octaves are only included at the end of the text. The range of these scales arrives till the harmonic G on the G-string, so there is no mention of thumb positions.

Lew Berryman compares the three fingering systems by Symandl, Billè and Franke assuming the first one as his favorite because it's superior in terms of intonation, performance and control. Fingerings for symmetrical, pentatonic and blues scales are well explained in Berryman's method. After completing the seven positions (Figure 54) in the lower part of the neck, he defines two "ranges" in thumb position, the regular one and the higher thumb position that starts with the use of the second finger on the D5 (G-string). About the left hand position and posture, Berryman says that in lower positions the thumb is placed in the middle of the back of the neck, halfway between the 1$^{st}$ and 2$^{nd}$ finger. The index finger is used to locate positions and the thumb provides the fulcrum for pressing the string to the fingerboard. He assumes that if the 4$^{th}$ finger of the left hand

plays a note, the other three fingers have to help press the string too[61]. The elbow position has to be held high enough so the wrist is almost straight, while the fingers perpendicularly fall to the string. Berryman stresses the fact that the posture has to be relaxed and unforced. As the fourth position approximates the shoulder begins to pivot as the elbow descends with the forearm and hand leaving the fingers perpendicular to the strings. The thumb rests in the crook of the neck; the fingers of the left hand are now in contact because notes are close together. In the sixth position the 4th finger is replaced by the 3rd, and as the thumb is placed on the side of the neck, the shoulder begins to move forward toward the neck of the bass. In thumb position it's possible to play an interval of fourth on one string[62]. Hand posture is as well essential as in lower positions, but the muscles of the forearm are more active due to the loss of stability previously provided by the thumb when it was in the back of the neck. Berryman observes that main obstacle encountered by new students for thumb position is that they have the tendency to play flat notes when ascending and sharp when descending.

61 The same technique defended in Simandl's method.

62 Wolf calls it tetrachord.

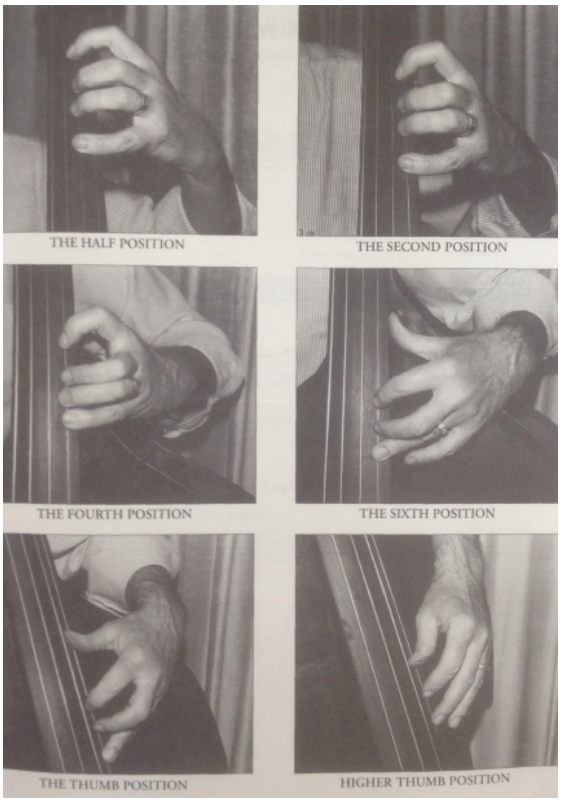


**Figure 54: Lew Berryman's left hand positions from *Intonation Plus-A Comprehensive Method for the Jazz Double Bass Player* (1997, p.11).**

### 3.2.1 Comprehensive Bass Method for Jazz Players

Now I will introduce a highly organized double bass method, a book that cover in an exhaustive form most of the topics related to jazz double bass playing. The *Comprehensive Bass Method for Jazz Players* written by Hein Van de Geyn[63] is without doubt one of the most complete books about the jazz double bass.

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[63] Hein Van de Geyn is a master jazz double bass player, with an outstanding career as a performer and teacher. He played with jazz legends such as John Abercrombie, Larry Schneider, Tony Bennett, Larry Vuckovich, Philip Catherine, Chet Baker, Dee Dee Bridgewater, Enrico Pierannunzi and Toots Thielemans. In 1990 he made the first album under his own name with Lee Konitz. In 1994 he created his group Baseline with John Abercrombie and Joe LaBarbera and co-founded the jazz label Challenge Records. In 1996 he became the head of the bass section in the jazz department of the Royal Conservatory in The Hague. During a sabbatical period spent in South Africa, he started writing his *Comprehensive Bass Method,* an extensive text in two volumes on double bass playing that was published in 2007. From 2008 to 2010, Hein Van de Geyn was the artistic manager of the Rotterdam Jazz Academy, then he decided

This method does for jazz double bass practice what Morton's or Wolf's books do for modern classical double bass pedagogy. Van de Geyn wrote this book based on his jazz double bass philosophy, which was built from his experience as a student, player and teacher[64].

The first book provides the "core" of Van de Geyn's way of thinking about music through the double bass; he covers 153 subjects and develops 182 exercises. Volume one is divided into two parts: part one, the subjects, and part two, the exercises. In the subjects part, he explains what he thinks it's best to work on to improve double bass playing: how and what to practice, the body (posture) and mind (awareness and consciousness of what and why practice), theory, comping, soloing and "around the music" topics (strings, basses and amplification). The second part is completely devoted to exercises that have the goal to develop a strong and versatile double bassist, showing many aspects of playing in order to expand the vocabulary and musical horizons. This part is meant to give ideas, ideas that the evolving player should develop him/herself, finding one's fingerings, transposing the exercises in all keys and finding one's logic, how to play an active role in the creative process. The basic goals and methods are explained through short examples as in a compact guide for jazz double bassists (Van de Geyn, 2007).

Book two develops the exercises of the second part of book one; everything is clearly spelled out: whole exercises in all keys with specific given fingerings. This can be used as a quick resource, in the way that we can open it and start right away to play an exercise without having to think about fingerings or keys. In one way this is the opposite

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to stop his career as a performing bassist and moved with his family to South Africa to run a guest house, dedicating his life to writing and education. He now teaches at the University of Cape Town.

64 He was the first graduating student from the Jazz department of the Rotterdam conservatory, and as a sideman he learned a lot about the music business and jazz history and its many idioms. He played with great jazz musicians both in Europe and the U.S. where he lived for three years.

of what Van de Geyn provides in his first volume, but it's another way to help players who have different needs to go beyond their limits.

*Comprehensive Bass Method* utilizes the three fingers German/French School. This is the fingering system Van de Geyn uses, and in his opinion, that provides a compact and centered hand; this system is highly organized and is one of the central tenets in Van de Geyn playing philosophy.

The first goal for a good left hand posture is to assume a hand position as natural as possible; imagine the position assumed when squeezing a tennis ball. This is the right way to accustom the left hand to play for long time without stress and build up muscle strength. The left hand thumb at this stage is in a relaxed posture and set to point toward the center of the hand, giving support to the other fingers. The ideal position of the left arm is a straight line from the elbow to the medial joint of the fingers. Remember, the thumb doesn't have the function to support the double bass because the instrument has to find its balance between both hands and the body. These same concepts are expressed in others books but are especially pointed out in Rufus Reid's, Michael Wolf's and Mark Morton's methods. The natural left hand position is the one that has a distance of a whole tone between 1$^{st}$ and 4$^{th}$ finger; the 2$^{nd}$ finger has to remain a little higher (toward the nut of the fingerboard) then the halfway point on an imaginary line between the 1$^{st}$ and 4$^{th}$ finger, a bit higher than its natural tendency. The 3$^{rd}$ finger will stay against the 2$^{nd}$ but will move with the 4$^{th}$. Fingers have to remain on the string and will be lifted away only when necessary. An objective to aim at is when all the fingers equally approach the fingerboard bent in an arched way. Imagine a line inside the left hand and opposite the knuckles, parallel to the side of the neck and very close to the side of the fingerboard. When playing the lower strings, this imaginary line helps to have the fingers bend around

the center of the hand, perhaps one of the most difficult tasks to achieve for novice players.

**Figure 55: finger approach to lower string bent and arched from *Comprehensive Bass Method for Jazz Players* by Hein Van de Geyn (2007, p.40-41).**

The posture of left hand, forearm and wrist remain almost the same in the lower and thumb positions, when the left hand extends upwards the upper arm lift up providing the access to the thumb position. The wrist has to stay flat with all the tendons relaxed, swinging the arm outwards when playing the lower strings.

Van de Geyn names the position on the fingerboard from the 1st to 12th, dividing them into two parts, the neck positions from 1st to 7th and the side positions from 8th to 12th. Some of these positions have special names because they have a specific meanings: the 7th position is the "curve position," the 8th position is the "even side position," the 9th position is the "odd side position," the 10th position is the "even high side position," the 11th is the "odd high side position," and the12th is called the "octave position." The thumb positions are named the same as the lower positions, and the 3rd finger only replaces the 4th.

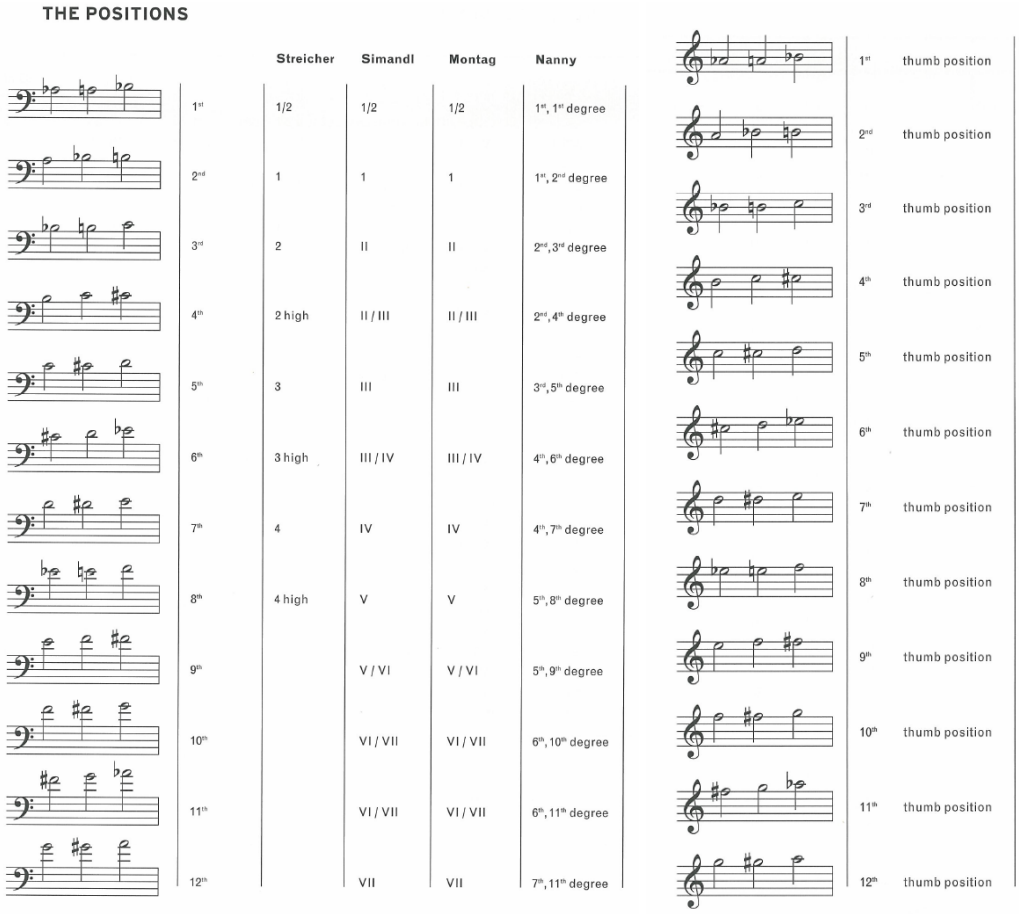


**Figure 56: table of comparative positions in different methods from *Comprehensive Bass Method for Jazz Players* by Hein Van de Geyn (2007, p.306-307).**

Van de Geyn offers a very interesting and valuable comparison among some of the most common double bass methods/schools (Figure 56).

Some points of reference on the fingerboard have to be recalled: the nut (at the top of the fingerboard), the shoulder of the bass and the point where the neck starts to curve into the block at the top of the double bass body, called the curve position. When approaching the curve position, the thumb will start to stay behind, keeping the same

position as much as possible until resting alongside the neck. This creates a smooth transition between the side position and the thumb position (Figure 57)[65].

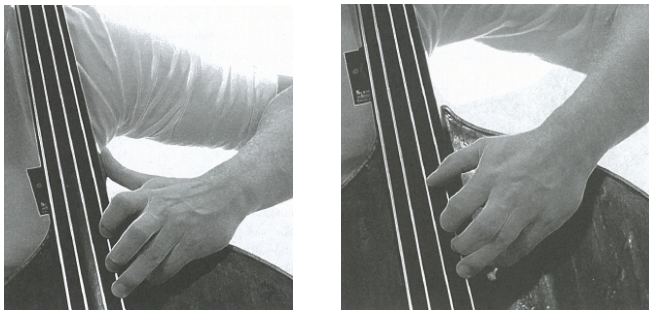

**Figure 57: transition between the side position and thumb position from *Comprehensive Bass Method for Jazz Players* by Hein Van de Geyn (2007, p.59).**

For the thumb position, Van de Geyn uses Petracchi's approach: the "close" position, also known as chromatic position, open or semi-chromatic positions, and the diatonic one that Van de Geyn uses only in exceptional cases. The semi-chromatic position is a reference point because it's a relaxed position, and the hand shape is more natural. In the thumb position the angle between the fingers (thumb, 1st and 2nd) and the neck has to be around to 90º to give to the 3rd finger room for move. The 1st and 3rd fingers will have the tendency to collapse, and that's inevitable due to the stretching of the muscles and tendons, but having conscience of the problem will help avoid it. A good way to correct these postures errors is to use a mirror. The left thumb should be quite straight and the string pushed down with the middle of the distal phalanx. The progression of positions using the thumb is equal, as the ones in the lower position, but the finger that indicates the position is the 1st finger. As an example one can say that in the 1st and 2nd thumb position the thumb stays on the same note (the G octave on G string) as the 1st finger will play Ab (or G#) in first position and A in second position. There are two body

65 Look at the upper arm position in Figure 57 and compare it to Michael Moore's elbow/upper arm position in Figure 67.

positions suitable for playing in the thumb position: just bend over the instrument to reach this area of the fingerboard or step back with one foot so the double bass tips backwards on the shoulder.

Now talking about general rules about left hand fingering, a few of Hein Van de Geyn's rules are: avoid the 4th finger to the 4th finger shifting and fingerings that suggests a stretching outside one position; open strings can be used at any point. The 3rd finger is used on and after the open string octave, and thumb lowest position is on the open string octave or a half step above. Van de Geyn is a strong defender of a very logical left hand efficiency because a jazz double bass player has to be able to change positions and fingerings at any time and in any place. In Van de Geyn opinion, a main difference between written "classical" music and jazz is that with written music, specific fingerings can be chosen along with shifts that satisfy specific situations, counting on several parameters such as, dynamics and vibrato among others. In jazz a deeply organized fingering is needed, yet non-specific, in order to build up flexibility and security. An improvising double bassist doesn't have to think about fingering especially in live settings. Van de Geyn does not use the four fingers technique even in the middle region of the neck (as Morton does), because different fingerings in different places on the fingerboard could lead to confusion.

One of the biggest differences between "classical" and jazz double bassist is the use of open string. In pizzicato playing[66], open strings do not sound very different from other string pressed notes. The use of open strings makes string crossing easier (compared to bow playing) as well as affording the player valuable time to shift positions when playing arpeggios.

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66 Mostly used by jazz double bass player.

As example, I suggest one of the most useful exercises within Van de Geyn's method, the "Card 10," so called because it refers to an old card system that Van de Geyn formulated to notate all his exercises. The goal is to play all triads and 7th chords. These chords could have open strings as chord tones. Starting to play the chord on the lowest part possible of the instrument, continue playing until reaching an open string (in case of two open strings present inside the chord, only the last one counts); the next note of the chord will be played on the string below the open one. Continue to play the chord arpeggio until reaching the harmonic G on the G string as an upper limit. This method allows playing all these chords smoothly, reaching notes in places otherwise unexplored.

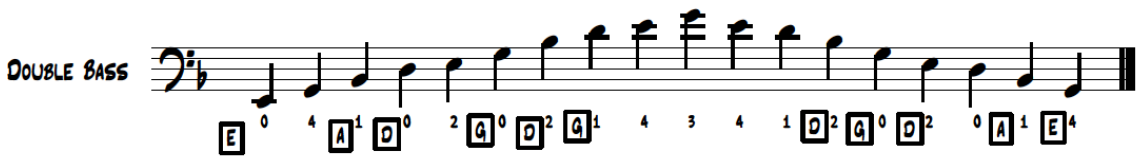


**Figure 58: card 10 exercise with traditional fingering and string notation (author's transcription).**

| | C | C# | D | Eb | E | F | F# | G | Ab | A | Bb | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ma | g-4 | | d-4 | g-1 | | a-2 | | g-4 | | a-4 | d-2 | |
| Δ | g-2 | | d-4 | g-2 | | a-2 | | g-4 | g-1 | a-4 | d-2 | |
| 7 | g-1 | | d-4 | g-4 | d-2 | a-4 | | g-4 | | g-1 | d-4 | a-2 |
| 7b5 | | g-1 | d-1 | g-2 | d-2 | a-2 | | g-1 | d-1 | g-2 | d-2 | a-2 |
| mi | g-4 | | d-2 | | g-1 | | a-4 | g-2 | | a-2 | | d-4 |
| miΔ | g-2 | | d-4 | d-1 | g-2 | | a-4 | g-2 | g-1 | a-4 | a-4 | d-4 |
| mi7 | g-1 | | d-2 | | g-4 | | a-4 | g-2 | | g-1 | | d-4 |
| ø | | g-1 | d-4 | a-1 | g-2 | | a-2 | g-1 | d-1 | g-1 | | d-2 |
| o | a-4 | g-1 | d-4 | a-4 | g-1 | d-4 | a-4 | g-1 | d-4 | a-4 | g-1 | d-4 |
| #5 | | a-4 | d-4 | g-2 | | a-4 | d-4 | g-2 | | a-4 | d-4 | g-2 |

**Figure 59: card 10 original grid, from *Comprehensive Bass Method for Jazz Players* by Hein Van de Geyn (2007, p.246).**

All the arpeggios could be easily notated using this grid, where the letters represent the open string and the numbers the fingers to be used to play the note after the open string. Notice that this note has to be played on the string below the open one.

To close this review about Van de Geyn method I will talk briefly about his thought related on playing sitting or standing. In Van de Geyn opinion playing standing is better because it allows moving around and feels more dynamically the instrument. However he suggests to experiment both in a liberal and flexible approach.

### 3.2.2 The Evolving Bassist & Jazz Bass Compendium

*The Evolving Bassist* by Rufus Reid is a double bass method that has been used by generations of jazz double bass players since its first publication in 1974. Reid (2000) said: “Unlike most traditional bass methods books, I have chosen not to use specific hand positions to learn the notes and their locations on the fingerboard. If you play

chromatically up and down the fingerboard, you eventually play all the notes present on the bass."

One of the most remarkable technical issues approached by Reid about the left hand is the "claw." Reid developed specific exercises to approach what he calls the "transition area." That is the area between the low part of the fingerboard and the thumb position. All postural recommendations written in the text in order to approach this transition area are about the position of the elbow[67] and the "claw."

The "claw" defines the left hand position when playing and its capacity to keep the right posture without letting fingers and knuckles to collapse. It is important then to keep in mind the right left hand position (Figure 60).

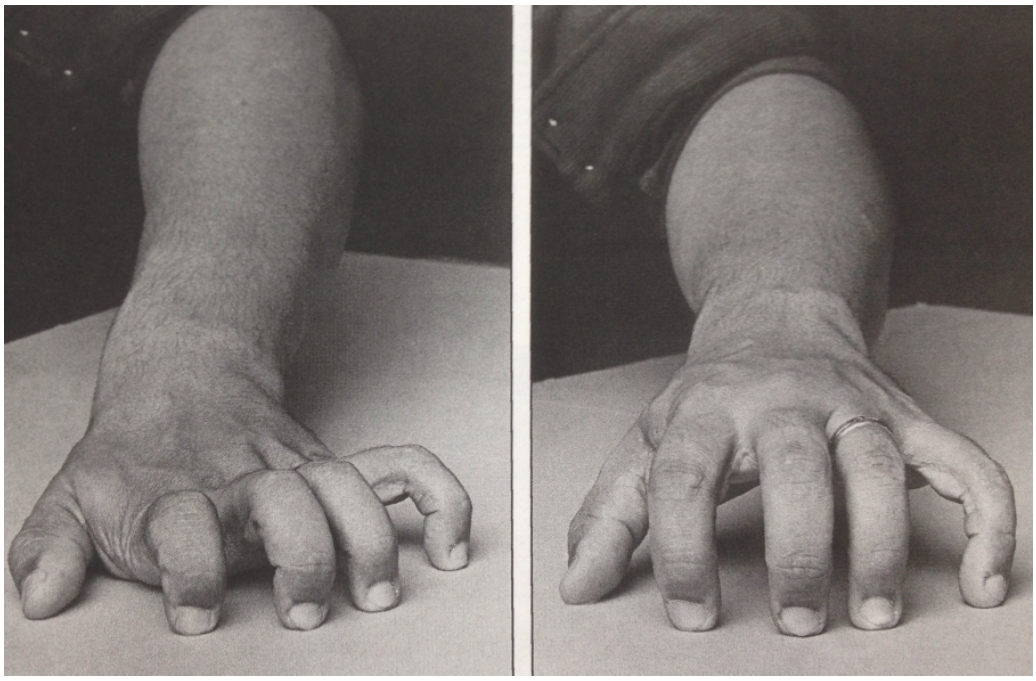

**Figure 60: collapsed claw (left) and correct claw position (right) from *The Evolving Bassist* (2000, p.39) by Rufus Reid.**

Reid emphasizes that the use of the left hand thumb in low position stabilizes the instrument and smoothly guides the hand through the transition zone to the thumb

[67] However all the concepts about left hand movements presented in Reid's method were already been analyzed in chapter 2 and/or in the present chapter.

position. Reid is aware of the importance of this movement from low position to thumb position and creates some exercises to promote this shift. Reid considers double bass playing as an endurance race where the player/athlete has to prepare himself to run; in order to do that he has to work out, be fit and ready to all the musical challenging.

Talking about playing posture Rufus Reid uses an innovative double bass endpin, the "François Rabbath's endpin" [68].

The bent endpin was developed by *luthier* Horst Grünert for François Rabbath, with the purpose to change the center of gravity of the double bass so that standing double bass players will feel less weight on their thumbs supporting the neck, forcing the player to stand erect. Since the bass has a more comfortable angle, the player naturally applies the weight of both arms, in a relaxed manner rather than with muscular pressure, and the sound of the instrument is more efficiently projected using this angle.

**Figure 61: Rufus Reid using the Rabbath's endpin.**

Sigi Busch's *Jazz Bass Compendium* is a large manual meant for students who have already acquired basic skills in music theory and on instrumental technique. In his preface, Busch deputes competences for a solid left hand technique to classically trained

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[68] The use of this device is not described in Reid's *The Evolving Bassist* book but I was introduced to it during a Rufus Reid's masterclass in 2003. Rufus Reid had lessons with François Rabbath (Espeland, 2014).

teachers, so the book strictly focuses on jazz playing matters. In his exposition about this method, there is scant information about left hand movement, mechanisms and body postures, but there are various exercises about intonation, and some of them suggest the use of "drones." Drones are pedal points that can be used to improve intonation. The drone exercises could be used to promote shifting in one string. For example, is very useful to pluck the D string while playing a G major scale on the G string at the same time.

Articulation is an important topic that very few books treat; Busch wrote some preparatory exercises about articulation, using pull-off and hammer-on and some simple shifting exercises.

All jazz bass methods involve attention to the construction of jazz bass lines or bass lines from other musical styles, including afro-Cuban, Latin, and others. However it is rare to see in these books written fingerings for walking bass lines. In Figure 62 it is possible to find one of the rare examples of written fingerings about walking bass lines.

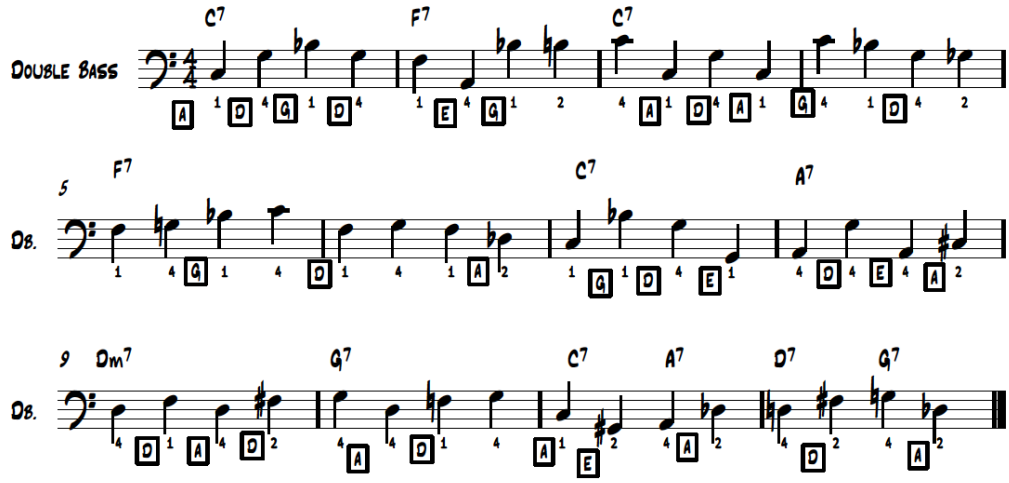


**Figure 62: blues bass line in a single position with left hand fingering, from *Jazz bass Compendium* (1995, p.63) by Sigi Busch (author's transcription).**

### 3.2.3 Double Stops

A common topic discussed in various books is the use of "double stops," a technique where the bassist plays the root and the tenth (major or minor) at the same time. In his *Melodic Playing in the Thumb Position* (1998), Michael Moore shows how to play the 10th in the lower and upper positions (major and/or minor) and then "triple stops" by playing 10th (major and/or minor) plus 7th (major and/or minor). Ray Brown covers this topic extensively in his *Bass Method* adding to the major and minor 10th fifths, sixths and minor sevenths. Some of this information can also be found in Rufus Reid's book where he wrote fingerings for tenth exercises and in Van de Geyn method. Every player has a slightly different way to finger double stops as shown in Figure 63, but notice that Michael Moore plays with his left hand 4th finger supported by the 3rd and the 2nd by the 1st in both major and major tenths in low (exactly in the same way as Van de Geyn does) and thumb position as does Rufus Reid. Unfortunately I could not find Rufus Reid's hand position for minor tenths, but comparing Ray Brown to Michael Moore it is possible to see that Brown doesn't support the 4th finger with the 3rd when playing a major tenth and when playing minor tenths he uses the 3rd finger instead the 4th.

**Figure 63: double stops major and minor tenths played by Ray Brown (first line, first two on the left), major and minor tenths in lower and in thumb position by Michael Moore (first line, 3rd, 4th 5th and 6th picture from the**

**left), major tenths in lower and thumb position played by Rufus Reid (second line, first two pictures from the left) and major and minor tenth played by Hein Van de Geyn (second line, 3rd and 4th picture from the left).**

### 3.2.4 The Improvisor's Bass Method

A good book that can be helpful for the electric bass players as well as double bassists would be the *Improvisor's Bass Method* by Chuck Sher. It presents both instruments' fingerings along with some basic pictures that illustrate the physical aspects of playing. In the foreword, Sher suggests that less advanced players go through some traditional double bass methods such as Simandl's, in order to learn basic fingering and position foundations. The few lines about the left hand fingering do not offer any new information about left hand posture. The interesting thing about this method is his graphic division of the fingerboard into horizontal scales positions and vertical scales positions with fingerboard charts that are useful to less experienced players.

The fingerboard is divided into five positions (Figure 64) in a way that the bassist can play notes that belong to a certain key center horizontally across the four strings. In this way the hand position has the same geometric configuration (sometimes with minor adjustments) and can be used in any key center (Figure 65).

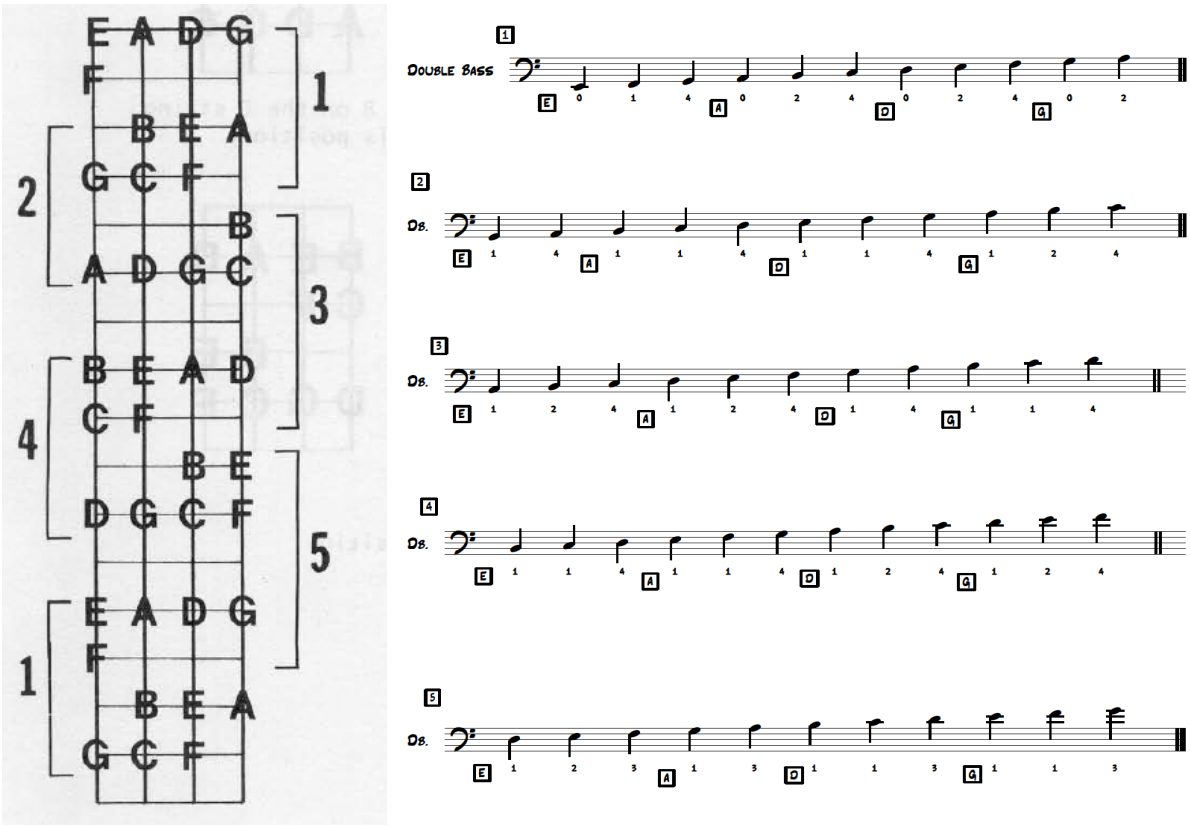


**Figure 64: horizontal scale positions fingerboard chart (1979, p.31) and left hand fingering in Cmajor/Aminor from *Improvisor's Bass Method* by Chuck Sher (author's transcription).**

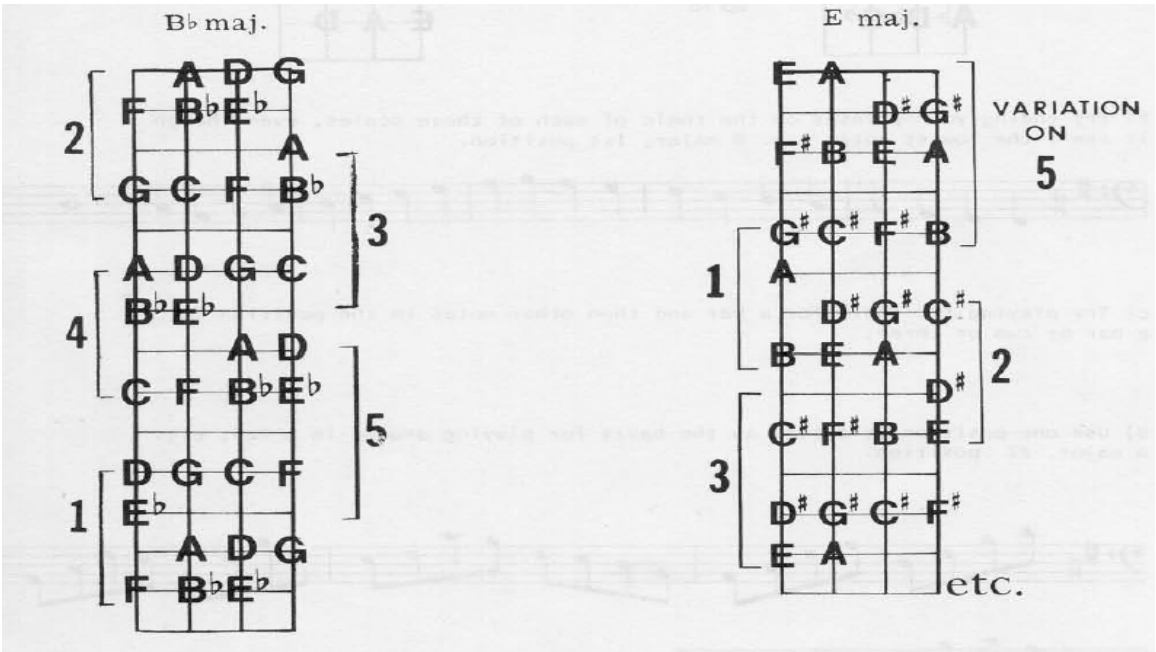


**Figure 65: horizontal scale positions in Bb major and E major from *Improvisor's Bass Method* by Chuck Sher (1979, p.32).**

After the 5th position, the first position occurs again. It is clear that in doing that the student works on all the modes of the key center: in the 1st position, the Phrygian, Lydian, Mixolydian, Aeolian modes can be found. The same can be said about the 2nd position, Mixolydian, Aeolian, Locrian and Ionian (Major) modes are played and so on. In thumb position this horizontal method could be applied too; unfortunately there are no specific developments regarding this technique in the book. However there are some exercises at the end of the book about the use of the thumb position on double bass; explain how to use the thumb position, and showing how to finger some of the most used scales (Figure 66).

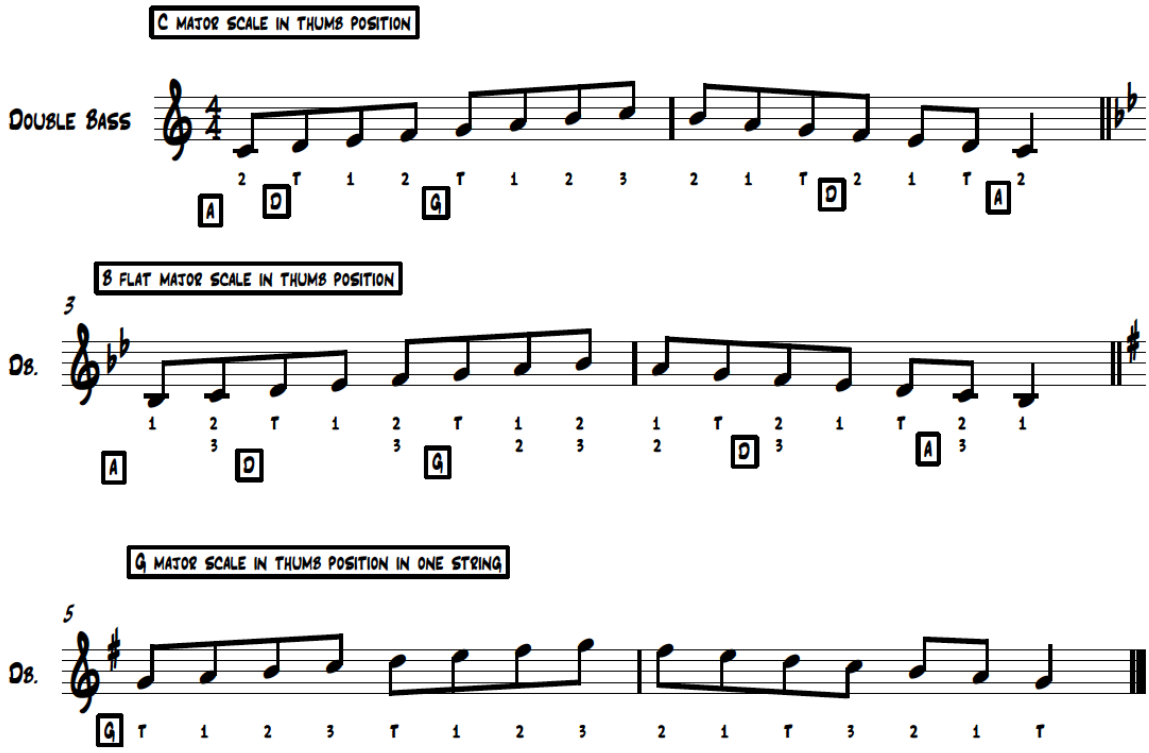


**Figure 66: scales in thumb position, from *Improvisor's Bass Method* by Chuck Sher (author's transcription).**

### 3.2.5 Thumb position: Melodic Playing in The Thumb Position

Finally, in his *Melodic Playing in the Thumb Position*, Michael Moore developed a system that permits double bass players to explore the thumb position as a soloist range; however this is a method for quite experienced players with a solid harmonic and

technical background. The system divides the thumb position in A, Bb, B, C, Db, D and Eb (and enharmonic) positions.

**Figure 67: left hand in thumb position (left) and left harm in thumb position (right) from *Melodic Playing in the Thumb Position* (1998, p.10).**

Notice how the fingers are arched and not collapsing at all, and the left upper arm is elevated without touching the left shoulder of the double bass (Figure 67).

The B position is the first and central one, and it works as follows: left hand has to be in the thumb position with the thumb on G harmonic on G-string; the target note is the B natural above the G harmonic and will be played by the second finger; the first finger will be pressing the A note (between the thumb and the second finger) and the third finger play C. This is Petracchi's diatonic position, but the difference here is that the target, or in other words the note that defines all the positions, is the one played by the second finger. This position uses the notes of the G major scale and will be used to play the C Lydian, A Dorian, D Mixolydian and F# Locrian.

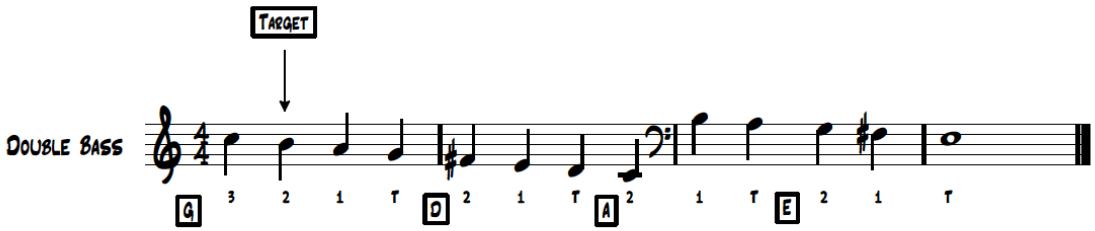


**Figure 68: B position from Melodic Playing in the Thumb Position: A Method for the String Bass (author's transcription).**

The scale shown here has a horizontal shape through the four strings. Being familiar with all the positions allows the bassist to improvise, using the second finger to target different modes related to the major scale. Targeting the major 7th of the chord makes available notes from Lydian mode; targeting the 3rd of a major 7th chord makes available notes from the Ionian mode; targeting the 2nd of a minor 7th chord makes available notes from Dorian mode, targeting the 6th of a dominant 7th chord makes available notes from Mixolydian, and targeting the 4th of a half diminished chord makes available notes from Locrian. As an example, in the II-V-I progression in Ab the target will be C, in II-V-I in F the target will be A and so on. The same principles could be applied to harmonic minor scales where the B position will be related to A harmonic minor scale, then to diminished scales, melodic minor scales and pentatonic only applying little variations.

### 3.2.6 Reflections about left hand technique for jazz double bass

After the analyses of these books I realize that the majority of the jazz methods presupposes a familiarity with some of the old schools left hand techniques. To be more precise, all of them use a French/German 1-2-4 fingering technique, with some rare exceptions as the "extensions" used by Ray Brown. As already seen in chapter 2, mostly

all the authors use a different glossary of terms and symbols to define similar or even the same concept or technique. This fact generate some confusion and this is why I decided to use and adapt all the examples to my own glossary and set of symbols. Most of the methods similar words to describe left hand movements in both low and thumb positions. However in my opinion, there are some of them that are more organized than others, focusing on specific topics and offering exercises to solve problems. Van de Geyn books are well structured covering exhaustively a large part of jazz double playing items. I found also in Michael Moore's *Melodic Playing in the Thumb Position*, a very handy workbook. Researching in a practical way a very unexplored field as jazz improvisation only and exclusively using the thumb position. Yet every book have something that other text omitted but all of them agree in one point, the player should be ready and free to make his own fingerings, choosing the ones that fit better in that particular moment and musical context. As a jazz bass player, I assume that bass lines and improvisation are processes primarily built in our brain, so as fast as the brain processes all the information, that's how fast the bassist can create solos and bass lines; after all it is all about training and "fitness."

# Chapter 4

# 4 Pizzicato Right Hand Technique for Double Bass

"Remember that when you play the first thing people hear is your sound. Your sound is determined by your choice of equipment, your right hand attack, and the sustain you give the notes with your left hand" (Goldsby, 2002).

## 4.1 Right Hand Pizzicato in "Classical" Literature

In traditional "classical" literature pizzicato right hand technique is a quite neglected topic. I found some general indications in Simandl's method where he suggests that: "A considerable amount of facility in pizzicato can be achieved by learning to play alternately with the first and second finger of the right hand during rapid passages."(Simandl & Sankey, 1968). Simandl introduces another technique the "slap pizzicato", also known as the Bartok pizzicato. This technique indicates the sound of the string allowed to rebound against the fingerboard with a percussive snapping sound.

In his *The Contemporary Contrabass* Bertram Turetzky gives more information about right hand pizzicato. However he talks about the jazz pizzicato tradition naming the work of Jimmy Blanton, Oscar Pettiford, Charles Mingus, Scott LaFaro, Richard Davis, Gary Peackock and Ray Brown. Turetzky asserts that jazz pizzicato technique reenergized the standard "classical" tradition. He refers that jazz players preferred the slightly angled one-finger style, using the thumb often under the fingerboard acting as a fulcrum (Turetzky, 1974). Turetzky talks about two fingers or finger-over-finger style. Other "generator" of pizzicato technique could be the thumb. Turetzky uses the thumb as a plectrum, generating a dark, guitar like sound; for this reason this technique is also known as "guitar pizzicato". Turetzky also suggests the use of thumb pizzicato in passages where

arco and pizzicato playing are requested; the reason is that when switching from arco to pizzicato and vice-versa using the thumb only two movements are needed, while switching from pizzicato to arco (and vice-versa) using a finger style takes three movements.

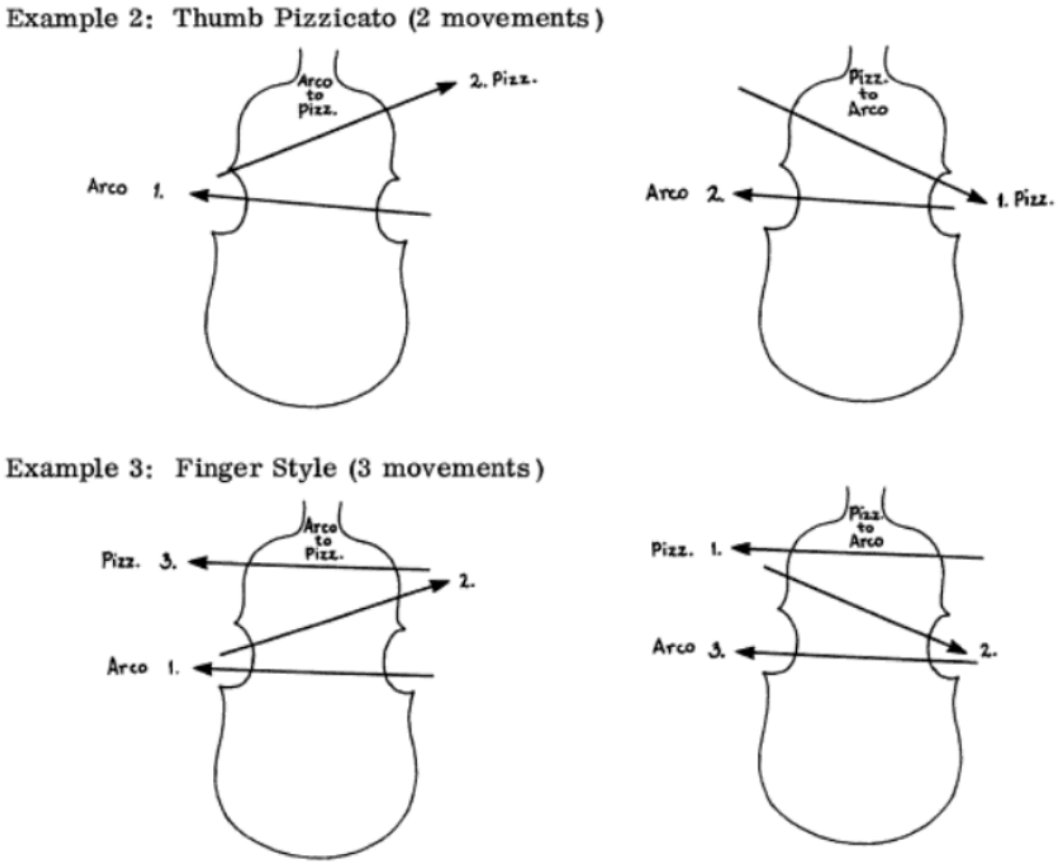


**Figure 69:Bertram Turetzky's right hand pizzicato style using thumb and fingerstyle from *The Contemporary Contrabass* (1974, p.4).**

## 4.2 Right Hand Pizzicato in Jazz Literature

The importance of right hand technique on the double bass in modern music is evident from the very beginning of jazz history. During the swing era, bassists used to play with gut strings and unamplified. Double bassist normally played quarter notes along with the rhythm guitar and the bass drum; it was difficult for bassist to be heard properly. Some of these players, such as Wellman Braud, Milt Hinton, and Bob Haggart started to "slap" the gut strings on the fingerboard in order to create a percussive effect, pulling the

string away on the 1st and 3rd beat letting them pop back and finally slap with the right hand against the fingerboard on the 2nd and 4th beat.

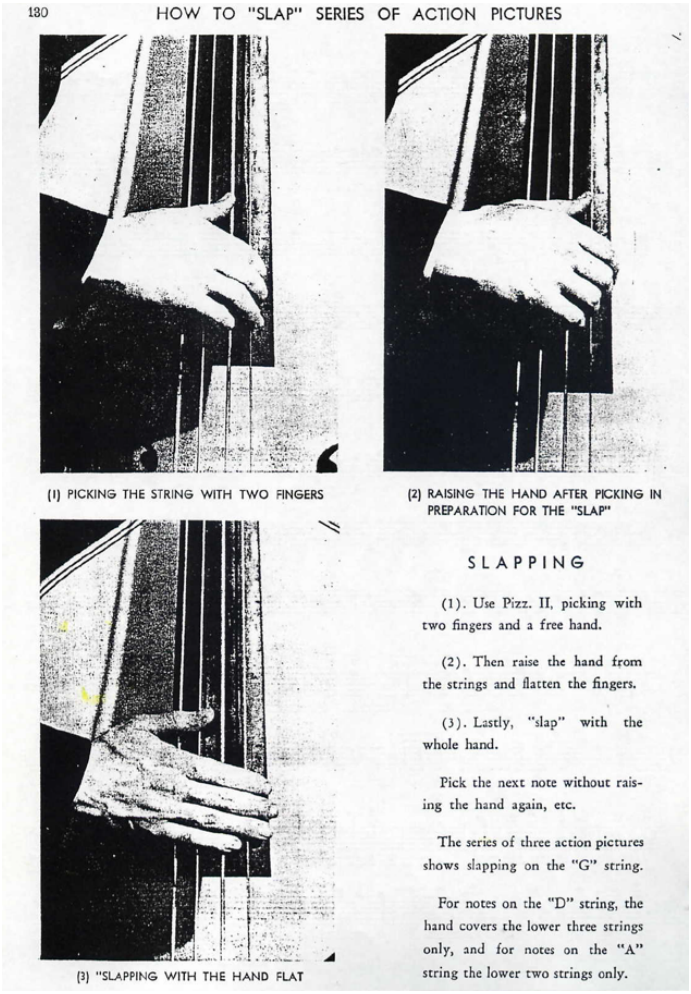


**Figure 70: slap technique from *Bass Method - A School of Modern Rhythmic Bass Playing* by Bob Haggart (1969, p.69).**

The right hand technique developed slowly over the years, and this evolution was accompanied by technical/instrumental improvements or/and musical changes. After the "Swing Era," the number of band members was drastically reduced due World War 2. As a result, the great big bands were divided into smaller combos; the recent emergence of "Bebop" afforded bass players more responsibility, as they played faster tempos for more extended periods, keeping the pulse steady. Bebop also required more demanding solos. The guitar and the bass drum stopped to play quarter notes with the bass, distributing between themselves other functions that had previously been the province of the full

orchestra. During that period, the bass player used just the index finger or that finger plus the middle finger of the right hand together to keep the fast quarter note pulse going. At the end of the '50s some players, such as Scott LaFaro, Charlie Haden, or Ron Carter started to use two right hand fingerings, alternating between the index and middle fingers. In the same period, jazz double bass player started to use steel strings on their basses, and that helped the evolution of right hand technique. The introduction of microphones, pickups and amplifiers gave to jazz double bassists the possibility to reduce string action boosting the development of this technique to another level. The three fingers right hand technique, used by legendary Danish bass player Niels-Henning Ørsted Pedersen is one of these examples.

In traditional jazz method books, the right hand technique is a bit underrated comparatively to left hand technique; normally this topic is approached with some pictures that give a basic idea about it.

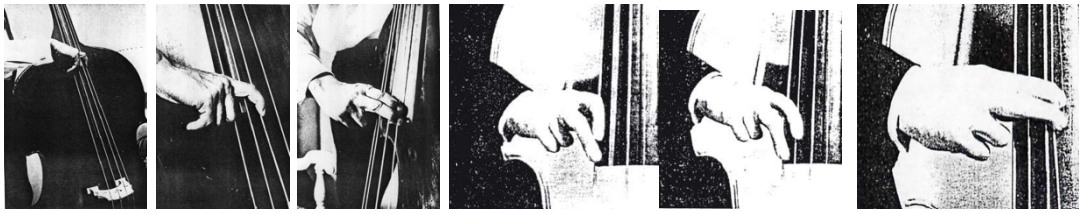

**Figure 71: Ray Brown (1999, p.6-7-8) (first three pictures on from the left) and Bob Haggart's (1969, p.68) (first three from the right) right hand.**

In Figure 71, the first three pictures (from the first to the third on the left) represent Ray Brown's right hand position for soft pizzicato or ballad playing (first from the left), then the right hand position for a good jazz sound (second from the left, using only the index finger) and finally with two fingers together for heavy jazz playing without forgetting the right hand thumb against the fingerboard (third from the left). The others three pictures (from the right to the left) represent Bob Haggart's way of playing with the right hand. The two fingers picking (first from the right) is for loud and fast playing,

bending the 3rd and 4th fingers and the thumb into the palm. Notice that, using Haggart (1969) words: "the thumb doesn't need to be braced on the edge of the fingerboard; however some players prefer to do that, at least when playing the lower two strings". The two resting pictures (second and third from the right) show the right hand picking for quite passages, used by plucking the strings with the index only. The index finger plays the A string, while the middle finger rests on the E string. As soon the index finger plucks the A string, it will rest on the E string too (third picture from the right).

There are some concepts that are common to all the jazz methods. For example in playing walking bass lines, the general idea is to think of the right arm movement as a pendulum. About the use of right hand fingers, it is possible to play using just the index finger, with both index and middle fingers together, alternating index and middle or just using the middle finger of the right hand. It is important when attempting to develop a good sound, that the player makes contact between fingers and strings. In Rufus Reid (2000) opinion, this can be done by using the larges amount of meat possible, than pulling the open string back until feeling the tension; at this point the player should leave the string rattle down the finger by pulling the arm and the finger(s) at the same time. The movement and use of the entire arm is crucial to the creation of a good sound.

Another common parameter is the posture of the right hand that has to hang down in a relaxed manner, while the thumb has to be placed at the side of the fingerboard (Haggart as seen avoid that). In his *Comprehensive Bass Method for Jazz Players* Van de Gein suggest pulling the 3rd and 4th finger away (as Haggart does) from the 1st and 2nd finger in order to avoid the unnecessary ballast these two fingers can cause to the right hand movement. The arm should swing from the shoulder, with the joints of the 1st and 2nd fingers bent and the back of the hand tilted slightly upwards. The right hand creates

the "pulse," as the left hand is responsible for the length, sustaining, and "color" of the notes (Van de Geyn, 2007).

The position where the right hand hits the string is important too because it's directly responsible for the tone of the note. When playing with the right hand at the end of the string (toward the bridge), the tone will be more defined, less resonant but definitively with stronger attack. Plucking the middle of the string, will create a darker sound, one that is smoother and with less attack. Almost all the jazz methods agree that for walking bass lines, it's better to use just one finger (which could be the index or the middle finger) or the index and middle fingers used together as one "big finger"[69]. The reason for this has to do with the fact that the movement comes from the whole right arm, as related before, starting from the shoulder to the fingers. That's the principal reason why is better to play walking bass lines with one finger. As the tempo became faster, the whole arm movement became smaller because the wrist and finger muscles become more active. The use of two fingers in walking bass lines (depending how fast the tempo is) could compromise the whole right arm movement. However when soloing or when walking at very fast tempo, the use of alternate two finger right hand technique is the best solution. The sound that two different fingers produce could be an issue; as the index and middle fingers have different lengths, it's necessary to concentrate on the sound they produce. This focused labor leads to calluses on both fingers that promote evenness and sound balance. A good idea while practicing is to vary the use of the fingers; trying then to produce even sounds using the index finger alone, then the middle finger alone, and finally alternates the fingering. When the right hand finger position angle is modified, different sounds result; quickness in execution also contributes to the resultant sound. There are several right hand position possibilities. Some methods point to two main

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[69] Big finger is my definition of playing with index and middle finger together.

positions; others describe three or even more. In Figure 72 I will synthetize all these concepts by reducing the positions to three (as Van de Geyn suggests).

**Figure 72: three main right hand positions (author's pictures).**

The first picture on the left shows a typical walking bass line played by the right hand, with the two fingers used as a big giant finger plucking the strings. The fingers and the strings are almost parallel. The second picture shows a fast walking or solo right hand using alternately the index and middle fingers; the angle between the fingers and the strings is around 45º. Finally the last image shows the hand position for fast soloing or for playing passages at an angle of almost 90º between the fingers and the strings. The main consideration regarding these different positions is that as the angle changes (from parallel to 90º), the sound change too because of the quantity of flesh that hits the string. The larger the area that plucks the strings determines the depth and heft of the sound; as the angle increases, and the fastness of the fingers improve, the sound became tinier. Experimenting with different angles and finger combinations can give an idea of the width of the sounds that are possible to create with the right hand. It is important to remember that when playing in thumb position, the left and the right hands get closer. As this happens, the sound becomes thin because of the decreasing of string length. To minimize this potential issue, the suggestion is to move the right hand progressively

toward the bridge, as the left hand goes in the same direction, trying to maintain the distance between the two hands.

I will now introduce some exercises extracted from different methods to improve the right hand dexterity. The first one is an example from Ron Carter's book *Building Jazz Bass Lines,* and practicing it will help one's capacity to improve playing at fast tempo (Figure 73). This exercise has to be done quite slowly at the beginning in order to obtain a good sound, and then increase the tempo while still focusing on a good sound production. The exercise has to be done using "stationary fingers" (Carter's definition of using both the index and middle right hand fingers together) and then alternating index and middle finger and vice-versa. It is important that after playing the notes on the G string, the right hand goes immediately to the D string creating an affect as a bow could create; that's the reason why there is a slur between the notes played on two different strings[70].

[70] Note that I slightly modified the symbols that are normally used in this dissertation when speaking about the left hand fingering. Because of the frequent string crossing in this exercise, I identified the finger (or open string), and right after that, I identified the string. For example, the 2D will mean the 2nd finger left hand on the D string. The indication for the right hand fingering is on the top of the notes, and "I" means the indicator and the "M" the middle finger.

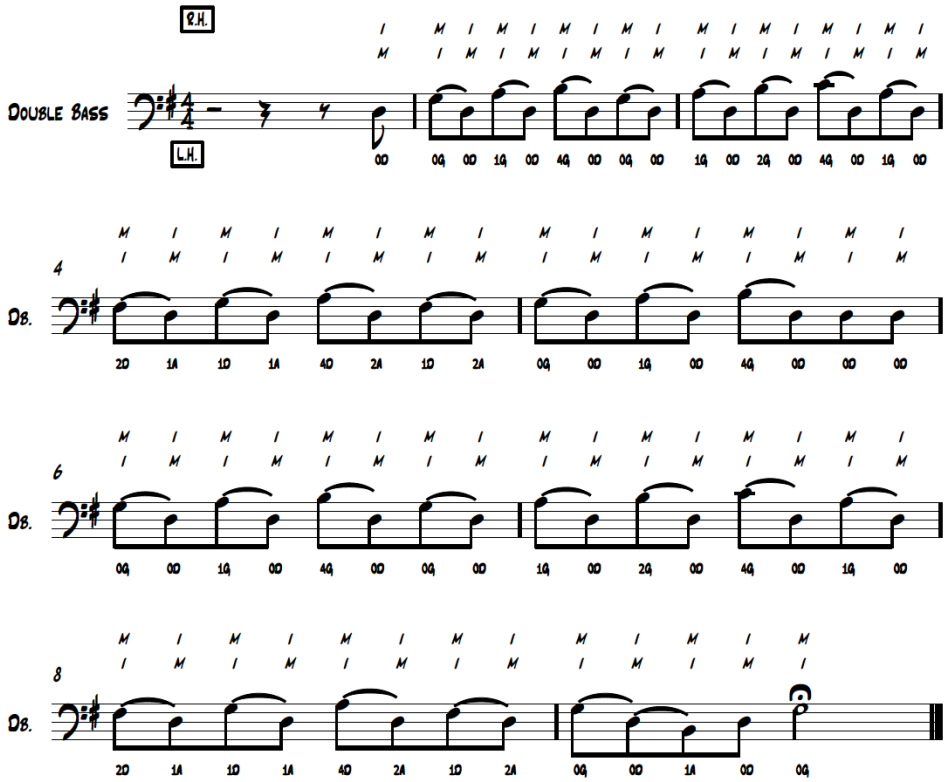


**Figure 73: Ron Carter's exercise for develop right hand dexterity at fast tempos from *Building Jazz Bass Lines* (author's transcription).**

The exercise has to be done also with the use of the stationary fingers (both index and middle together), keeping the hand as close as possible to the string in order to facilitate the execution at fast tempo; the same has to be done when alternating the fingers (Carter, 1998).

Raking[71] is a technique that permits to the player to move from one string to an adjacent one (this could be a jump of more then one string) using the same right hand finger. This is a very popular technique used in jazz, where the player can use real notes in these jumps or ghost notes[72]. The function of the exercise in Figure 74 is to alternate the index and middle right hand fingers until making an adjacent string crossing; when

[71] Also known as drops (Brown, 1999) or falls down (Pedersen, 2009).

[72] Also known as dead notes.

this happens, it is possible to "rake" with the same finger used on the last note before the string crossing.

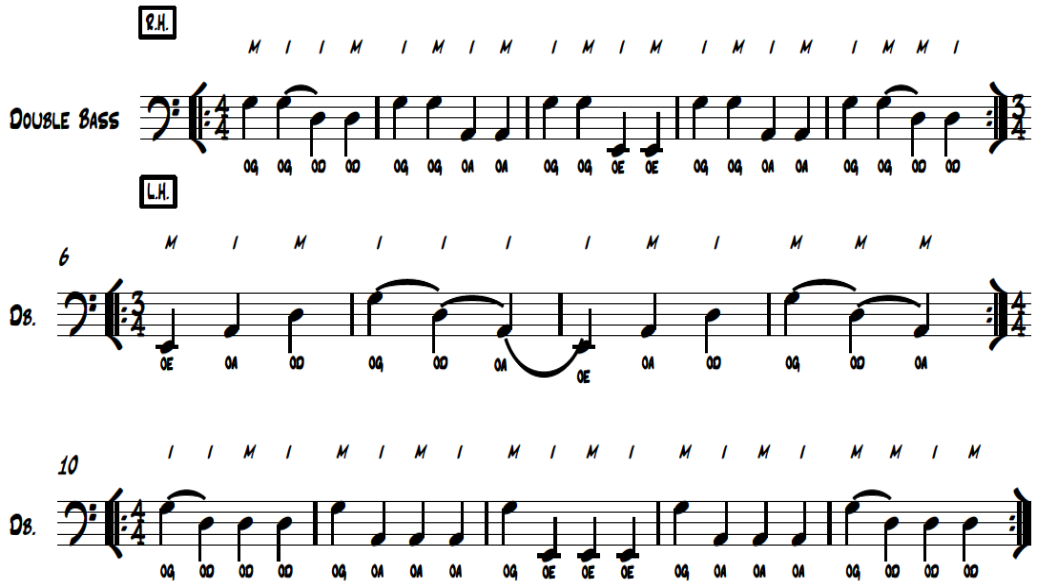


**Figure 74: extended raking right hand exercises from *Comprehensive Bass Method for Jazz Players* by Hein Van de Geyn (author's transcription).**

Another common right-hand technique is the one where the thumb and/or more of the other right hand fingers play chords or tenths[73] on the instrument. In his book *The Evolving Bassist*, Rufus Reid suggests that the thumb plays the roots and the ring finger plays the tenths; Van de Geyn suggests the use of the thumb and the middle finger instead; Michael Moore suggests the use of the thumb and index or middle fingers. Three note chords could be used when playing various combinations with the thumb, the index and middle fingers or the thumb, index and ring fingers or eventually the index, middle and ring fingers (Figure 75).

[73] Left hand fingering technique to play tenths/double stops was explained in chapter 3.2.3.

**Figure 75: right hand fingering playing tenths and chords: from the left to the right, tenths played using thumb for roots and index for tenths; using ring finger for roots and index for tenths; sevenths chords using thumb for roots, index for thirds and middle for sevenths, finally using ring finger for roots, middle for thirds and index for sevenths (author's pictures).**

So far, excluding tenths or playing chords, the majority of jazz double bass methods, only the possibility of playing with one or two right hand fingers have been explored. I will now introduce the three-finger technique applied to double bass. More about this technique will be explored when analyzing the electric bass right hand technique. There are two texts to analyze when speaking about this technique: Sigi Bush's *Jazz Bass Compendium* and Jimmi Roger Pedersen's *Scandinavian Double Bass Technique – Right Hand I*. Both of them recall the great Niels-Henning Ørsted Pedersen's efficient application of the three-finger technique. The first book is a compendium about many jazz double bass related topics. Therefore, the exercises related to this specific topic are few, yet it is possible to gain an idea about the potential of this technique. The second is an exercise booklet focused only on the right hand three-finger technique that exercise after exercise becomes more demanding with its highly organized system of fingering. The application of the three-finger technique could be wide in the case of difficult string crossings, playing lines by octaves (between no adjacent strings) or playing fast triplets. In reality, once the right hand is trained in the use of this technique, it will be possible

apply that to every musical situation. Of course every word said before about right hand sound production is valid, as it's a fact that in walking bass situations, the use of one finger could be the best choice. The specific sonority that the right arm, the shoulder, the wrist and finger motions produce is the reason why the one finger technique is still so used. Niels-Henning Ørsted Pedersen used his three finger skills mainly on his solos. He knew exactly where and when to utilize different right hand techniques in order to serve musical, aesthetic and stylistic purposes. Sigi Busch suggests inventing our own three finger exercises to promote fingers independence. He also promotes a sequence of ring finger, middle finger, index finger and the middle and ring fingers again (called "rolling"); in my opinion this kind of fingering causes the middle finger to be unnecessarily overused and could generate some confusion in terms of system organization. However it is beneficial to try different ways of fingering and then try to organize them efficiently.

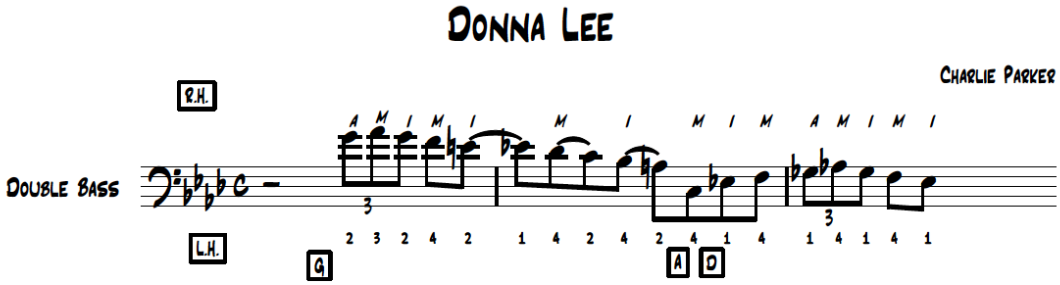


**Figure 76: excerpt of Donna Lee using right hand three finger technique from *Jazz bass Compendium* by Sigi Busch (author's transcription).**

As seen in the example in Figure 76, the utilization of the ring finger is limited to executing the triplet notes.

Jimmi Roger Pedersen almost uses the progression A-M-I (ring finger, middle finger, and index finger), giving to his method a systematic approach. The first exercise he wrote utilizes open strings; he then adds some basic left hand movement which helps

promote left/right hand coordination. The rules about sound production are the same as with a normal two-finger technique. Plucking the string near the end of the fingerboard produces a clearer tone with a nice attack; plucking in the middle of the string will create a softer and smoother sound. A word about the strings: when using the right hand three-finger technique, the open strings have a natural tendency to ring. This also happens when using the two-finger technique for fast passages (the one where the fingers are at 90º angle to the strings). The reason is because the palm of the hand or more precisely the lateral part of the index finger does not mute the strings anymore. In this case the finger used to pluck a string normally mutes the string below the plucked one. The string above should be muted by the left hand. When two strings are not adjacent as are the G and A, the A string should be muted with the inside part of the right hand index finger. The player should try to adjust the hand in order to find a position that suits his/her needs. Pedersen's booklet starts with exercises on G string, with and without the left hand. It is important in this phase to remember that when using a three-finger right hand pattern over binary notes combinations of the main accents happens every four notes. So these accents will be played by a different right hand fingering every time. The main idea is to be most aware of which finger is playing and on which string. One should also try to play an accent every three notes; in this case the accents will be played always with the same finger. Starting then with another right hand finger, but maintaining the same order sequence (A-M-I, M-I-A, I-A-M).

In 12/8 exercises, the accent will be played every four notes, then every three and every five notes, switching the right hand finger in order to straighten independence and sound evenness. It is important to interiorize these exercises (Figure 77) because the next ones about string crossings are strictly related to these in terms of rhythm and accents.

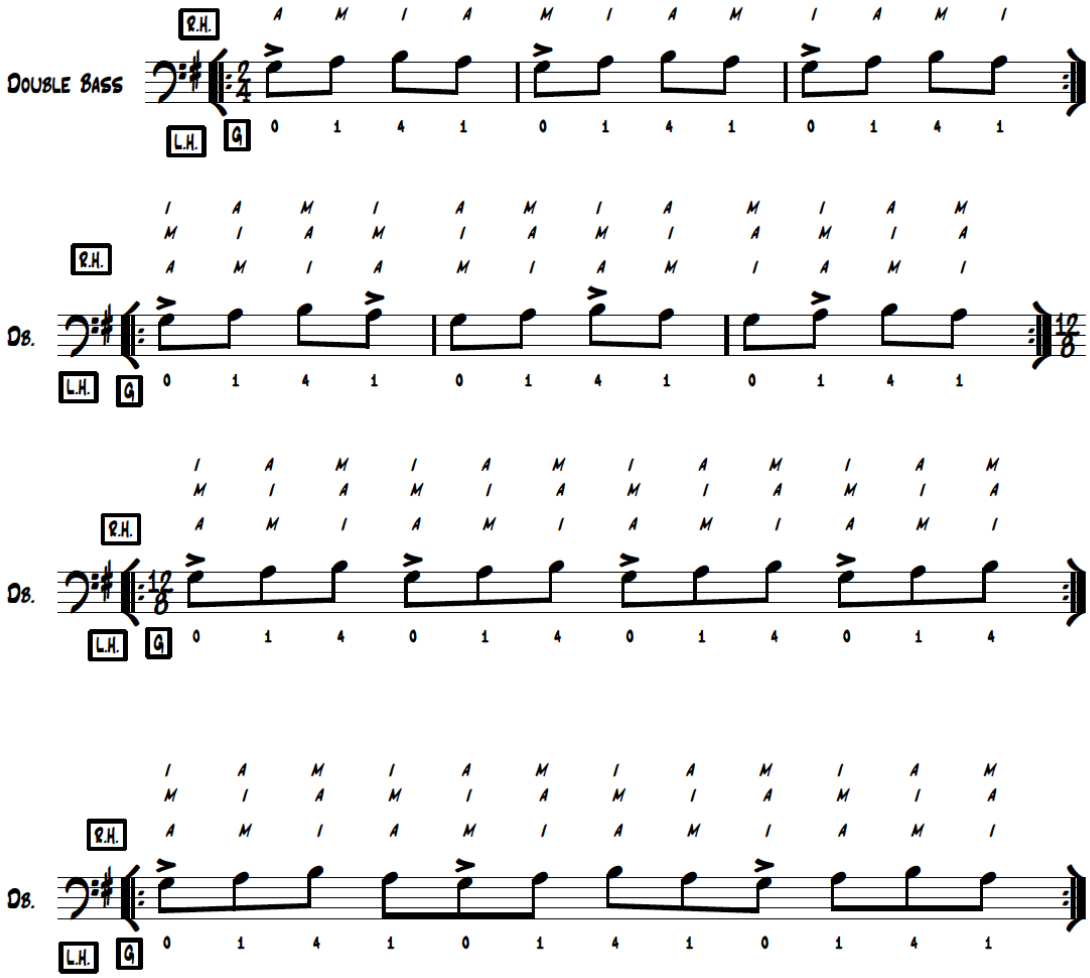


**Figure 77: exercises for right hand three finger technique on G string from *Scandinavian Double Bass Technique – Right Hand I* (author's transcription).**

The next block of exercises (Figure 78) uses the G and D strings. Here Pedersen uses a concept already discussed before the "raking" that he calls "falls down." In this case, there is the first exception to the rule of constantly alternating the ring to middle to index fingers. When going from one string to the adjacent one below the same finger, "rake" on the new string. When moving from one string to its adjacent one above the A-M-I, the same technique will again be used as the rule.

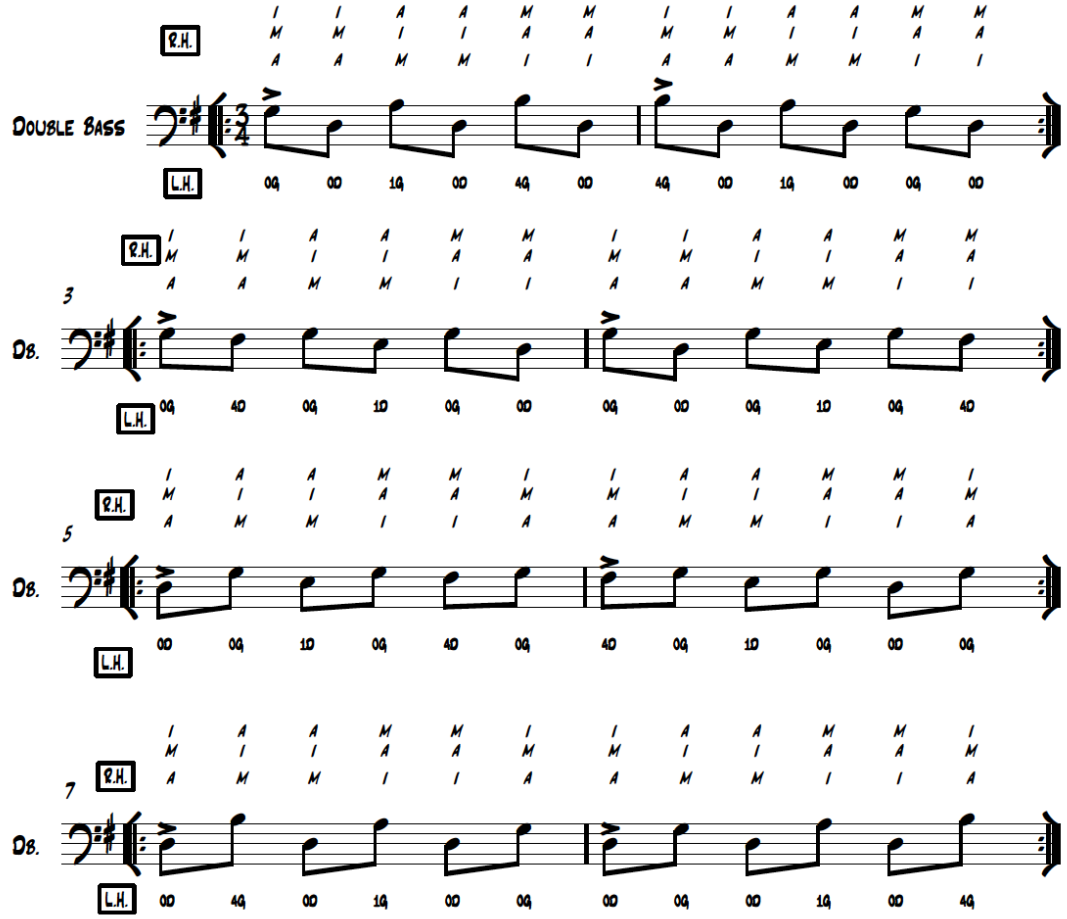


**Figure 78: exercises for right hand three finger technique on G and D strings from *Scandinavian Double Bass Technique – Right Hand I* (author's transcription).**

Playing between two non-adjacent strings (as G and A or D and E or G and E), creates another exception to the rule (Figure 79). On these strings, the right hand index (for the higher string) and ring finger (for the lower string) should be used. However, it is also possible to use the index and middle finger or even middle and ring finger to play. When executing a succession of notes on the same string (could be either one or the other of the two non-adjacent strings) matters are going to be more complex; for example the last note played on the G string, should be played with the index finger of the right hand, so it will be possible to continue with the ring finger on the A string. Playing the last note on the G string with the middle finger breaks the A-M-I rule that has already some exceptions; doing that it will create another unwanted confusion. It is also very difficult to

play the last note on the G string before crossing to the A with the ring finger, for this can hardly be accomplished without breaking the "flow." For the same reason, it is possible to end the phrase with the ring and middle fingers when passing from the A string to the G string. Avoid finishing with the index finger before moving to the G string.

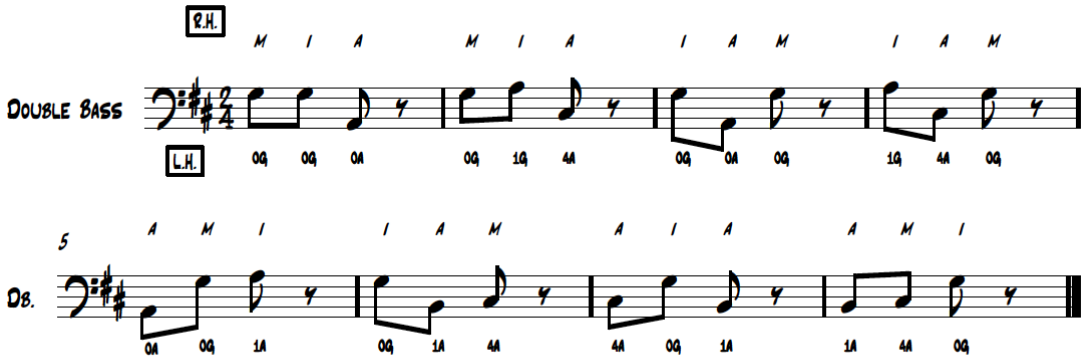


**Figure 79: exercises for right hand three finger technique on G and A strings from *Scandinavian Double Bass Technique – Right Hand I* (author's transcription).**

Finally some exercises on the G, D and A strings, which could of course be easily be applied to the E string too, especially when all facets of the system are interiorized. As the number of strings involved increases, the exceptions grow. The secret to keep in mind is that A-M-I is the main rule. The last finger that plucks the note will be the one that "rakes" to the next string, when a cross between the two adjacent strings takes place. When a two no adjacent strings cross happens, it is suggested that the index finger plucks the higher string and the ring finger plucks the lower one. In case of multiple notes played on the higher string, the index finger should finish (in order to use the ring finger on the lowest string). Having multiple notes played on the lower string requires one to finish with the ring or middle finger, in order to play the higher string with the index finger (Figure 80).

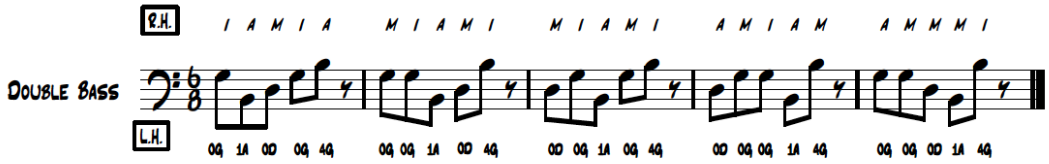


**Figure 80: G major triads exercises for right hand three finger technique on G, D and A strings from *Scandinavian Double Bass Technique – Right Hand I* (author's transcription).**

## 4.3 About Double Bass Right Hand Fingering Techniques

The double bass right hand pizzicato techniques illustrated in this chapter are the most used in jazz and modern music playing; of course many other techniques are omitted here. I suppose that the three-finger technique could be the future for the right hand in jazz, especially for musicians who play both instruments. I'm sure that there are more techniques involving the right hand thumb (as seen in this chapter when talking about playing tenths); others using thumb, index and middle right hand fingers and even the four-finger technique using thumb, index, middle and ring fingers. Some of these right hand techniques will be further analyzed in the electric bass chapter because are already in common use in modern electric bass playing. However some of these techniques are difficult to execute on double bass because of the height of the strings[74], different right hand positions and diverse posture between electric and double bass. In the last chapter I will create exercises mixing different techniques (from double bass and electric bass) using John Patitucci's playing as starting point.

I end this chapter with a thought: some years ago it was a privilege of just a few to play with two right hand fingers, and to play with three was perfectly unthinkable.

[74] Also known as "action".

# Chapter 5

# 5 Left and Right Hand Fingering for Electric Bass

## 5.1 Introduction

In chapter 5 I reviewed some electric bass literature[75]. As already done in the previous chapters I decided to revise the left hand fingering techniques first and then the right hand fingering techniques. In the first part of this chapter I focused my attention on the electric bass left hand posture and fingering techniques, then on different approaches to left hand techniques analyzing different electric bass players.

In the same way, in the second part of chapter 5 I examined some of the most used right hand fingering techniques.

## 5.2 Left Hand Fingering for Electric Bass

There are mainly two approaches for the left hand technique (or fretting hand for left handed player) on electric bass. One is to employ the fingering utilized by double bass players; using only three fingers for a whole tone especially in the low positions. The other one is derived from classical guitar technique and promotes the use of four fingers (one finger for each half tone).

Historically the electric bass is a hybrid instrument that synthesizes some characteristics of the double bass and the electric guitar (see chapter 1.3). By the time it appeared on the market a large number of guitar players embraced it in order to have

[75] Some of these literature reviews are methods and books, in other cases the techniques analyzed were part of online courses or videos.

more work opportunities as guitar/bass players. One of the exemplars of this successful switch is Carol Kaye[76].

A different reason why the double bassist switched to electric bass is because in the field of traditional jazz music, the use of the double bass was almost always preferred over the electric; however the birth of rock and roll, the growth of pop music and studio recording sessions, opened new carrier opportunities for the double bassist who could play electric too. James Jamerson, the legendary Motown's hits bassist, is an example of someone whose switch changed his career drastically.

In these days, it is possible to study the electric bass as an instrument with its own characteristics and personality, accessing to methods and books written especially for this instrument. However it is a fact that for fretted hand fingering and positions, the electric bass technique derived directly from the guitar and double bass heritage.

The constant and rapid evolution of this quite recent instrument still generates new techniques and fingering solutions. These facts create great confusion about the terms in use related to technical issues, symbols and general glossary. This chapter will focus on common techniques recognized as the basis of left hand fingering; some new techniques that could potentially be helpful to the learning and teaching of the instrument will be presented.

### 5.2.1 Some General Postural Positions

Generally speaking, I found little information about posture in electric bass texts, much less than in double bass literature. However there are some common points in all the information I collected.

It is possible to play the electric bass standing up or sitting.

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[76] Carol Kaye is an accomplished jazz guitarist who became one of the most important and in demand first calls studio bass players in Los Angeles. Mrs. Kaye is also an outstanding bass teacher with several books in her name.

While standing up, the best posture is to hold the back straight, shoulder and legs almost on the same line and in a relaxed position. Avoid muscular tension and form a 90º with the floor. Relaxation is the keyword because muscular tension can lead to bad habits that in time will be dangerous for one's health. The instrument should be positioned almost perpendicular to the body, with the head of the instrument quite even with the shoulder. The strap length should permit the elbow of the left arm to form a 90º angle between the upper arm and the forearm. When sitting, it's best to sit in a chair or on a stool that allows the knees the possibility to bend, as the legs form a 90º angle. Again the back should be straight and the shoulder relaxed and in line with the feet. The use of a mirror to check the position of the body, the instrument, and the hands is always highly recommended. It is crucial to reduce to the minimum the variations of the bass positions when sitting or standing in order to have the same main body and instrument posture in both situations. The strap length again is important to achieve that; it is very unpleasant if after hours of practicing in a sitting position, the player stands up and does not achieve the same proficiency because his visual and postural parameters are different.

All the methods and online educational websites confirm the fact that the left hand has to be relaxed. The ideal position should be the one that starts leaving the left arm full relaxed along side the body when in a standing position. Then lift the arm up and set the hand on the neck; this hand shape should be the correct one.

The left hand thumb has to be placed more or less in the middle of the neck without exerting too much pressure on it; as with the double bass, the thumb is a guide and is not meant to be a claw. Using the shoulder to pull back the left hand, it is possible to significantly reduce the thumb pressure on the neck.

**Figure 81: left hand position, relaxed arm alongside the body (picture on the left), left hand on the fingerboard (picture on the center, above view) and left hand position (picture on the right, front view).**

As can be seen in Figure 81, the left hand thumb should be placed facing in-between the first or second finger. Chuck Sher in his *The Improvisor's Bass Method,* says that the thumb should face the second finger while playing double bass and the first when playing electric. Again the position could depend on the fact that the bassist plays both (double and electric bass), so the thumb could even face the second finger. The strings have to be pressed by the fingertips not by the pads. The only way to do that is to nicely arch the knuckles as when playing double bass or classical guitar. It is to avoid the collapse of the finger joints. The palm of the left hand does not touch the neck, giving to the player an easier access to the lowest strings.

There are various ways to approach left hand fingering techniques. The lower part of the fretboard can be used for the four-finger or Simand's fingering technique. In the medium and higher range of the instrument, almost every text agrees on the use of one finger for each fret (four-finger fingering technique).

There are two different ways to play Franke's system in the lower part of the fretboard. The first is to use one finger for each fret, stretching the fingers as much as possible to remain inside the fret[77]. Even better, if the finger stays just behind the fret wire because it takes less pressure and produces a better tone (Dean, 1996). Bassists who play

[77] Also known as open hand position.

the fretless bass[78] use this technique; in this case the fret wires do not exist but to hit the note with the right intonation, the finger has to be placed where the imagined fret wire should be. This technique is very demanding; several bassists, especially the ones influenced by Jaco Pastorius' playing, use this technique. Others bassists defending the "open hand" position are the Catalan virtuoso Carles Benavent or Berklee's bass department chair, Steve Bailey (who uses also the thumb position on electric bass).

The other way to play the four-finger fingering technique on the lower part of the fingerboard, is the one defended by Scott Devine and Oteil Burbridge among others. They assign to every finger a fret, but instead of stretching the fingers to maintain their positions, the hand is free to slightly move back and forth. This is possible utilizing a sort of left hand "thumb pivoting," as the one used in Rabbath's system.

The goal, especially for novice player, is to avoid finger stretching; one of the best things to do is to practice in the zone situated in the middle of the fingerboard, approximately after the fifth fret. In this part of the bass, the frets are nearest and the need to stretch the fingers is reduced.

### 5.2.2 Reflections About The Origins of Electric Bass Left Hand Fingering

In his book *Modern Electric Bass*[79] Jaco Pastorius[80] presented a one octave scale fingered in this way (Figure 82).

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78 The fretless bass is a cross between double bass and electric bass, and both instruments share some characteristics.

79 The book is also available in video version.

80 Jaco Pastorius was a revolutionary player who elevated the electric bass from a rhythm section instrument used to play chord tones and some grooves to a lead instrument. He was and remains, a huge inspiration for generations of electric bassists.

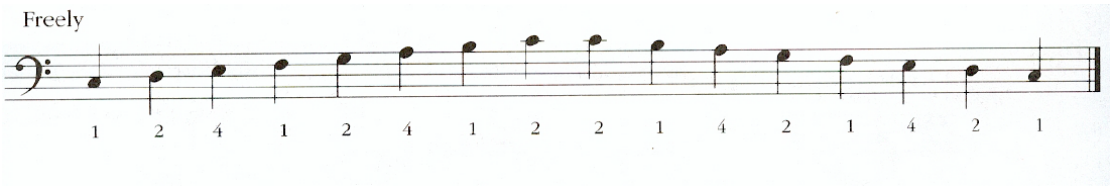


**Figure 82: Jaco Pastorius one octave C major scale from *Modern Electric Bass* (1991, p.6).**

In order to link guitar left hand fingering to electric bass left hand fingering, I found out that there are several ways to finger a one octave scales on the guitar as shown in Figure 83.

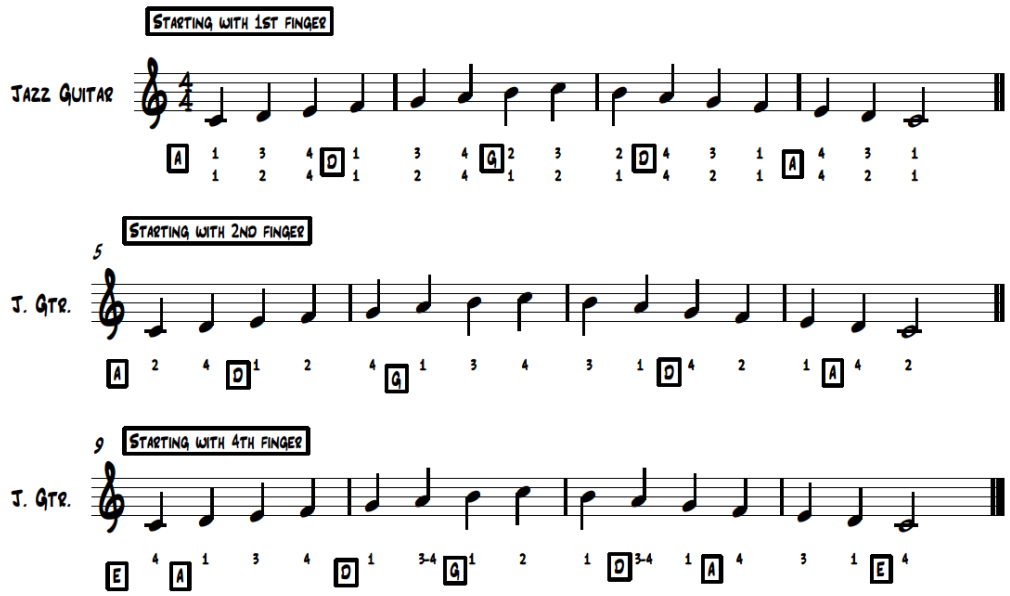


**Figure 83: four ways to finger one octave C major scale on guitar, fingering starting with 1st finger (bars 1 to 4) from *Fasttrack Guitar Method - Chords and Scales* by Blake Neely and Jeff Schroedl (1997, p.48); fingering starting with 2nd finger (bars 5 to 8) from *Diatonic major and minor scales* by Andres Segovia (1953, p.2); fingering starting with 4th finger (bars 9 to 12) from *Absolute Beginners Guitar Scales* by Cliff Douse (2003, p.27).**

It is possible to notice that the electric bass fingering that Pastorius used in Figure 82 is equal to the fingering (bars 1 to 4) of Figure 83.

During my research, I discovered that it is possible to access to a lot of information about the electric bass on the Internet[81]. Nowadays, there are some well-known websites that provide lessons for the electric bass; one must pay a monthly fee that guarantees access to a large range of video tutorials. Some of these websites have organized courses divided into topics related to electric bass techniques, with access to workbooks, backing tracks, seminars, interviews, etc.

Scott Devine owns one of these sites; I found in his *Harmonic Layering – Arpeggios, Chord Tones & Scales* course (Figure 84), three interesting ways of left hand fingering, for one octave major scales that practically match with the ones in Figure 83, confirming the link between guitar and electric bass left hand fingering[82].

---

81 Today it is even possible to attend online bass courses that give credits for a bachelor degree. The renowned Berklee University in Boston is but one example.

82 I suppose that Devine learned some of this fingering concept from one of his teachers, the virtuoso electric bassist Gary Willis who in his *Progressive Bassics* video and booklet shows the same three fingerings. Later on in this chapter I will talk about Willis' book in which he develops interesting key related left hand fingering positions called "key-finger-string."

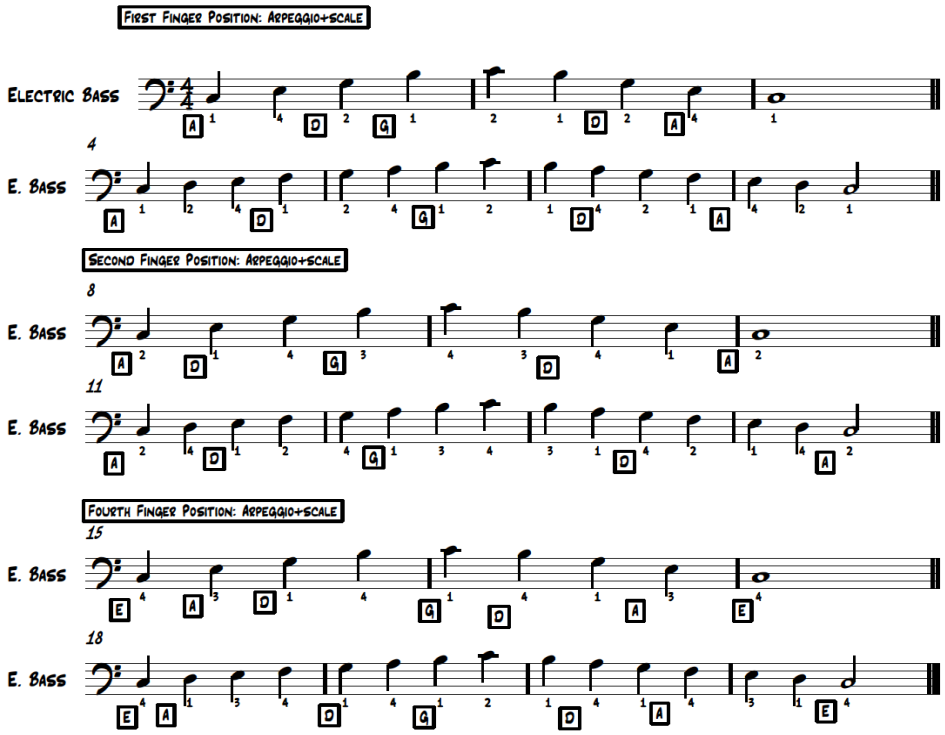


**Figure 84: three ways to finger one octave C major scale on electric bass from Scott Devine's *Harmonic Layering – Arpeggios, Chord Tones & Scales* online course (author's transcription).**

This means that it is possible to use three different starting left hand fingers to play a major scale in one octave: the 1st (or index) the 2nd (or middle) and the 4th (pinky) finger.

Again, historically, both guitar and double bass had a great influence on left and also in right hand techniques. Even today, the fingering choice could depend on the fact that the electric bassist was a former guitarist, double bass player or if he/she plays both (electric and double bass).

This is an important issue for my study because these players adapted their techniques to the more recent instrument, the electric bass. In this case, it's very important to observe if the player shares techniques between the two instruments[83].

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83 It is curious however to see how some of these "guitar" techniques, adapted to the electric bass, are also now used in modern double bass left hand playing. Such is the case with the scales starting with the second finger used by Ray Brown and called "extension scales" (see chapter 3, Figure 53).

In Ed Friedland's *Hal Leonard Bass Method,* I found a left hand technique that he calls 1-2-4 fingering system that is the equivalent of the French-German (Simandl/Nanny) double bass left hand system. Friedland says that this promotes hand relaxation and comfort, especially when playing in the lower regions of the electric bass. So he distributes the fingers in a way he calls the "first position" (first fret on E string): the 1st finger on F, the 2nd on F# (or Gb) and the 4th on G. When the left hand moves one fret ahead, this becomes the second position and so on.

The similarities between Symandl's and Frieland's fingering systems are more evident when comparing a one octave F major scale. The only difference is that Symandl calls this specific position a half position while in Friedland (as Van de Geyn) it's the 1st position.

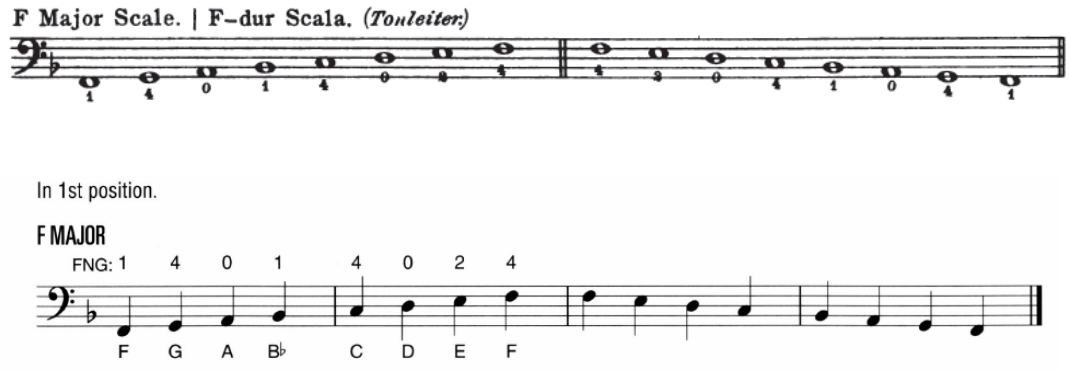


**Figure 85: comparison between Simandl and Friedland's F major scale fingerings from *New method for string bass – Part I* (1968, p.11) and *Hal Leonard Bass Method* (1996, p.69).**

Another double bass techniques used in order to avoid unwanted extensions is the one that Friedland calls "The Box Shape." The box shape is a four-note pattern that forms a square on the fingerboard that can be moved (Friedland, 1996).

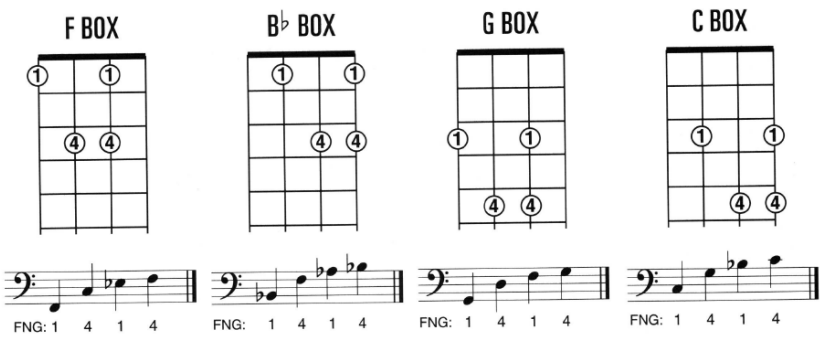


**Figure 86: movable boxes from Ed Friedland's Hal Leonard Bass Method (1996, p.54).**

The lowest note in the pattern is the root, the second one is the fifth, the third a minor seven and finally the octave. Normally the root is played by the index finger, the fifth with the third (or the fourth) finger, the minor seventh with the index and the octave with the pinky finger.

In this specific case, the electric bass left hand fingering is derived from the double bass heritage.

### 5.2.3 Scales/modes fingering

C major scale is probably the first scale a novice bass player learns. The fingering most used for a major scale is the one, starting with the second finger (Figure 84). Friedland uses the term "Universal Fingering" to indicate it, and I think this a quite appropriate name. This fingering is used in almost all the methods so far analyzed (Figure 87).

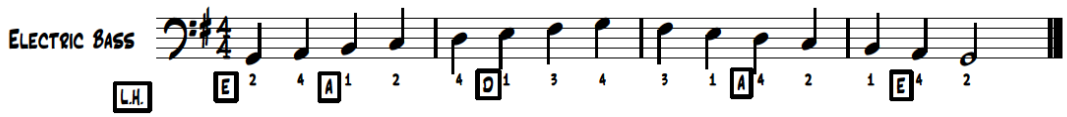


**Figure 87: G major scale in one octave "Universal Fingering" (author's transcription).**

Dan Dean's book has an interesting approach to one-octave scales, introducing scales in the open position[84] using the four-finger technique. Friedland fingers the same scales using the 1-2-4 fingering.

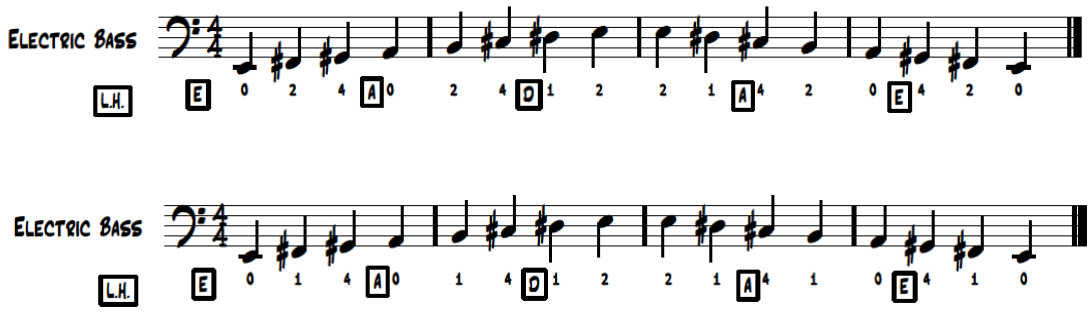


**Figure 88: comparison between Dean and Friedland's fingerings (author's transcription).**

The universal fingering is just the beginning; every scale or mode in one octave could use a standard (or universal) fingering that could be transposed in any key[85]. The same universal fingering principle could also be applied to triads and seventh chords arpeggios in one octave; in this case no shifts or hand position changes are needed. This is a fundamental concept that reveals the geometrical symmetry of the electric bass. Probably this is the main reason because graphics are often used in electric bass literature to show left hand fingering positions. There are texts such as Adam Kadmon's *Bass Grimoire Complete* that largely use graphic diagrams and numeric scale/mode charts. During my research, I found out that Kadmon's division of the fretboard and Billy Sheehan's concepts as explained in his Billy Sheehan[86] Basic Bass, are the same (Figure 89).

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84 One fret for finger.

85 As Wolf does on double bass (see chapter 2.5.4.).

86 Sheehan is one of the most popular rock bassists and a virtuoso of the instrument. The three finger right hand technique, tapping, and left hand fluidity skills are his trademarks.

Sheehan explains, when speaking about scales, that he is a self-taught musician and he does not think about modes; instead of that he thinks in playing scales all over the neck**.** He plays all the major scales using three basic intervals: half tone-whole tone (H-W), whole tone-whole tone (W-W) and whole tone-half tone (W-H). The fingerings that he uses for these three basic intervals are: for H-W uses 1-2-4 (left hand index, middle and pinky), for W-W 1-2-4 or 1-3-4 (index, middle, pinky or index, ring, pinky with extension between index and middle or ring and pinky) and for W-H 1-3-4 (index, ring and pinky).

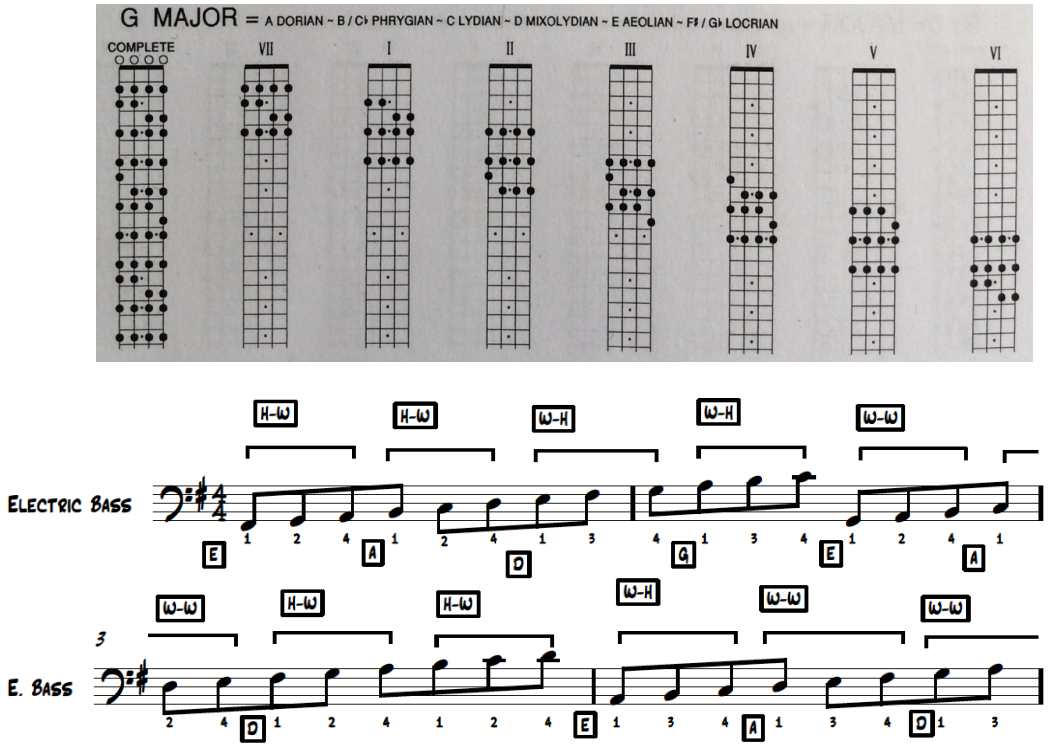


**Figure 89: comparison between *The Bass Grimoire Complete* (picture above) and *Billy Sheehan Basic Bass* (picture below) (author's transcription).**

The transcription is the exact transposition in music notation of Kadmon's graphics. It presents a partial example, but it is possible to see and find the pattern. Sheehan plays the G major scale starting from different scale degrees that of course means that he is playing a mode related to the key center. Starting with F# Locrian, G Ionian, A Dorian and so on, exploiting all the range available in one position of the G

major scale. Notice that he is playing three notes for each string, using another guitar technique. The three notes for a string technique makes more sense when thinking about the fact that Sheehan plays with a three fingers right hand technique.

Sheehan's and Kadmon's (who also wrote *The Guitar Grimoire Complete*) way of thinking is easy and efficient, and both of these methods show the electric bass's geometrical symmetry.

### 5.2.4 Two octaves scales/modes and arpeggios

There are multiple choices of fingerings when playing two octaves scales, modes, and arpeggios; this number increases proportionally to the number of strings that the bass has. I'm talking about this because until now I've analyzed exclusively texts covering the four string bass. The fingering of a two octaves scale depends essentially on the position chosen for shifting and string crossing. Traditionally, as in the old double bass schools, the scale is played in the first octave and then ascends to the higher octave on the G string (in four string basses) as is shown in Harvey Vinson's *Bass Guitar Scale Manual* (1985).

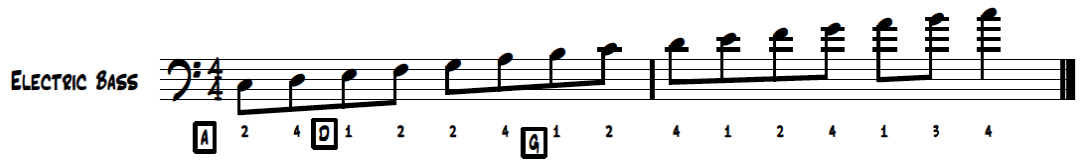


**Figure 90: C major scale in two octaves from *Bass Guitar Scale Manual* (author's transcription).**

Others books give some graphic indication that advise with multiples possibilities, how to conduct a two octave scale or arpeggio. However, no fingering is imposed or suggested. Scott Devine suggests (as Rufus Reid does when in his *The Evolving Bassist,* talking about double bass left hand fingering) that is not important to finger a two-octave scale or a scale/mode on all the instrument's extension. He affirms that if a player knows the fingerboard and the basic positions in one octave (as the three positions showed for the major scale) of all scales/modes, he/she will figure out where and when to make the

connection between the different basic positions. Michael Wolf, in his *Grundlagen der Kontrabass-Technik/Principles of Double Bass Technique,* supports the same idea in relation to double bass left hand fingering.

The problem is that in order to achieve this kind of mastery, it is necessary that students become very familiar with the fingerboard. Two octaves scales and modes are the necessary link between the novice and the professional bassist; I think that the two octaves scales concept should be applied in electric and double bass teaching. Some good practical examples of two octaves left hand fingering will be encountered in Janek Gwizdala's[87] *All the Good Staff - How I Practice*. The booklet here analyzed is Gwizdala's practice book, and it comes with tablatures; no fingerings, however are written. Luckily there is a DVD with all the exercises; in this case, it was possible to figure out Gwizdala's left hand fingering.

As is possible to see in Figure 91 the ascending and descending progressions use different fingerings; this is very important in order to quickly increase fretboard mastery.

[87] Mr. Gwizdala is one of the most in-demand electric bass players. London born and Los Angeles based, he is a bandleader, producer, freelancer musician, and musical director. He launched a very effective promotion strategy based on a large activity in social networks. Gwizdala has is own online lessons website and periodically launches new e-books, some of them with audio support and video. He uses all the Internet platforms efficiently in order to promote his career and merchandising.

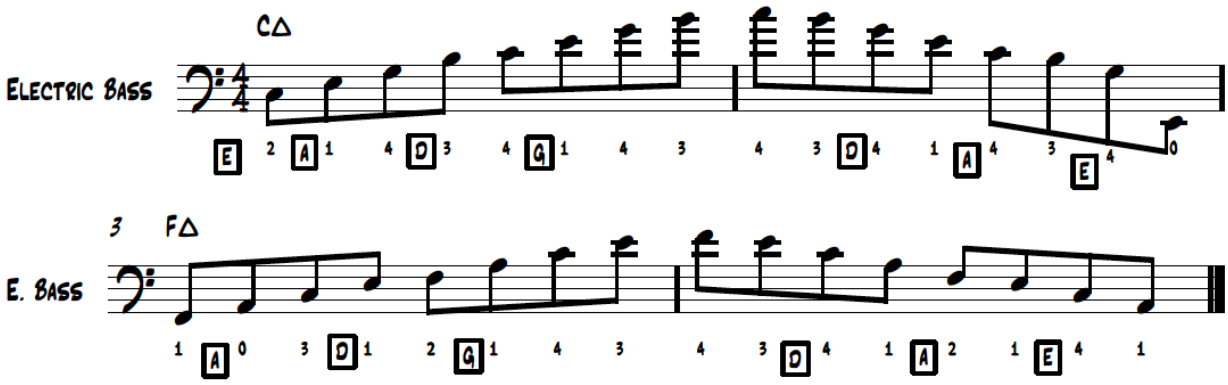


**Figure 91: Janek Gwizdala's Cmaj7 and Fmaj7 two octaves arpeggios from *All the Good Staff - How I Practice* DVD (author's transcription).**

About two octaves scales, arpeggios and exercises, I also had the opportunity to interview Italian electric bassist and teacher Flavio Piantoni[88], he developed his own method of teaching and this, with few personal changes, is the method that I still use in my electric bass teaching. Initially Piantoni played guitar, so he adapted the guitar left hand positions to the electric bass. He learned and shaped the rest of his own technique, as did many others from his generation, by listening and transcribing from the records. One of the problems he faced was the fact that with the guitar it was possible to play a full two octaves scale without any shift, while with the four string bass it was impossible. Listening to his primary influence, Jaco Pastorius, he figured out (before bass methods were published) what he calls "diteggiatura aperta."[89] He developed very demanding exercises to stretch the left hand in order to strengthen muscles and tendons, applying some of them to scales and arpeggios (Figure 92).

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88 Piantoni is a well-known Italian electric bass player and teacher; he's played with top Italian pop artists, and published two instrumental Cd's in his name: *Shortcut* and *Snips*. He lives between Italy and Denmark, teaching and touring.

89 Translated in English this is the equivalent to an extension (play a five frets span in the same position).

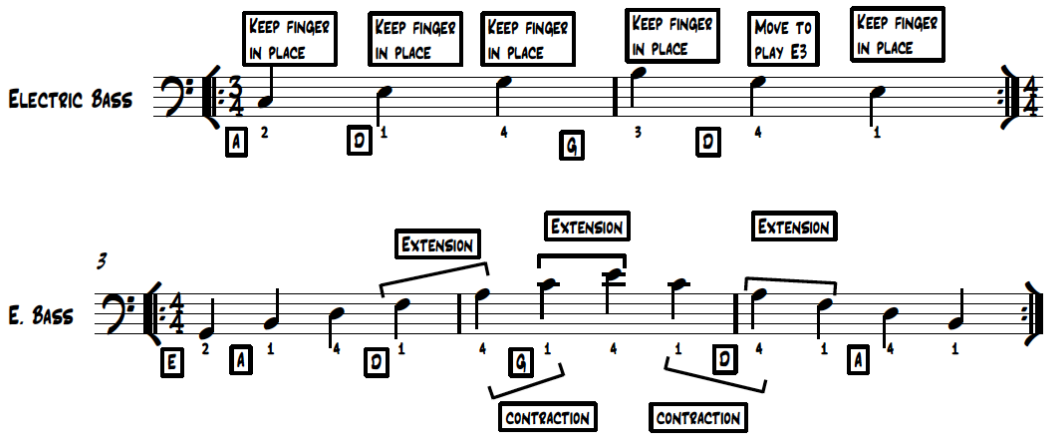


**Figure 92: Piantoni's arpeggios C major 7 and G7/9/11/13 fingering (author's transcription).**

The two arpeggios shown above look fairly simple, but the first exercise, the C major 7 arpeggio, has to be executed with all the left hand fingers on the fingerboard and on the fret where the notes are. The pinky is the only finger that moves in descending motion that presses the G3 note; in order to play the E3 with the first finger on the same string where G3 is played. This exercise is very demanding. It could be executed starting from the C3 on the E string 8$^{th}$ fret, as the fret's distance is shorter. It should be played and applied then in positions progressively toward the nut. The second example in Figure 92 has some "diteggiatura aperta" (extensions) between F3 and A3 and between C4 and E4; the stretching is supposed to last until reaching A3, then there is a contraction between A3 and C4 and finally another extension in between C4 and E4.

I systemized Piantoni's two octaves scale fingering based on his original major and natural minor scales, fingering that I still have on paper.

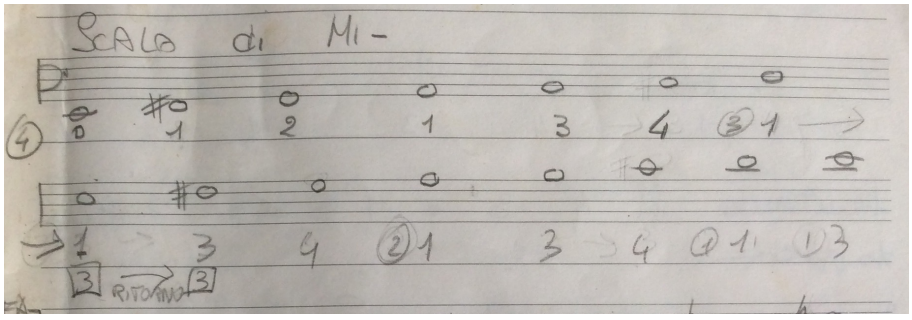


**Figure 93: Flavio Piantoni's two octaves natural minor scale (original paper) from author's archives.**

I applied then Piantoni's fingerings principles, adapting them to every scale and mode in major and minor keys.

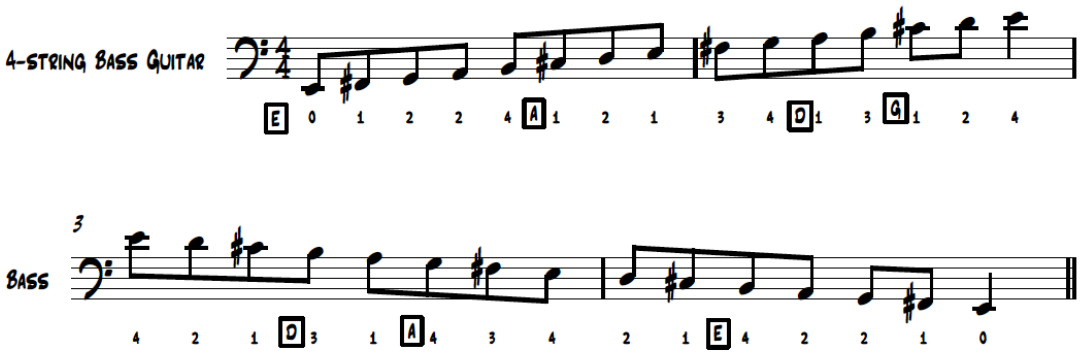


**Figure 94: E Dorian mode in two octaves based on Piantoni's fingering, author's adaptation.**

### 5.2.5 Gary Willis' Left Hand Fingering

Finally I will introduce now a book that approaches the geometry of the instrument and left hand fingering, in a very unusual way. Gary Willis' *Harmony for Bass* is one of the few texts I've read written for the 4, 5 and 6 string bass. This book has a great value to those who want to dig deeply into improvisation. Willis' linear and geometrical approach is not an easy concept to understand, but once decoded, the player can enjoy his original way of looking at improvisation. Willis' system is something that he developed over a long time. At the beginning of this chapter, I mentioned his *Progressive Bassics* video tutorial. His whole concept is based on these principles: utilizing the three basic left hand fingering to play major scales[90]; starting with index finger, with the middle[91] and with the pinky finger. He explains that the reason why a player might decide a particular place where to put the left hand should be as result of the key center of the harmony. Using the four-finger system technique, it is possible to associate a key center within a hand position, and he calls this area the "4+2." This area is

[90] See Figure 84.

[91] Called by Friedland (1996) "universal fingering".

defined by assigning to each finger a fret and that is very important: “allowing a stretch to either of the two frets on each side of the established four fret area” (Willis, 1997). As an example for playing a G major scale, it is possible to put the second finger on the 3rd fret on E string. Willis’ labeling system uses three points of information: key, left hand starting finger and string where the starting finger is placed; a G major scale, starting with 2nd finger on the E string 3rd fret will be label as G (key) 2 (finger) E (string); Willis also calls this position “Second Finger Position” because it starts with the 2nd left hand finger. In the same way, he associates the second most common position for fingering a major scale to what he calls “Fourth Finger Position”; that means that the major scale will start with the fourth left hand finger (the pinky). In this case the stretch outside the “four frets area” will happen because when using this fingering an extension is needed to play the seventh degree of the scale. As an example of labeling, Willis gives an A scale played by starting on the E string with the fourth finger; the label will be A4E. Willis chooses the second and the fourth position fingering, leaving the one that starts with the first finger outside because this one is already present inside these two, utilizing the “4+2” area.

It is possible to connect the second finger position with the fourth finger position without shifting; Willis calls this connection “two to four.” In second position the octave is played with the pinky; from here on, it starts in the fourth finger position. I used a six string bass as example because it is clearer for this effect (Figure 95).

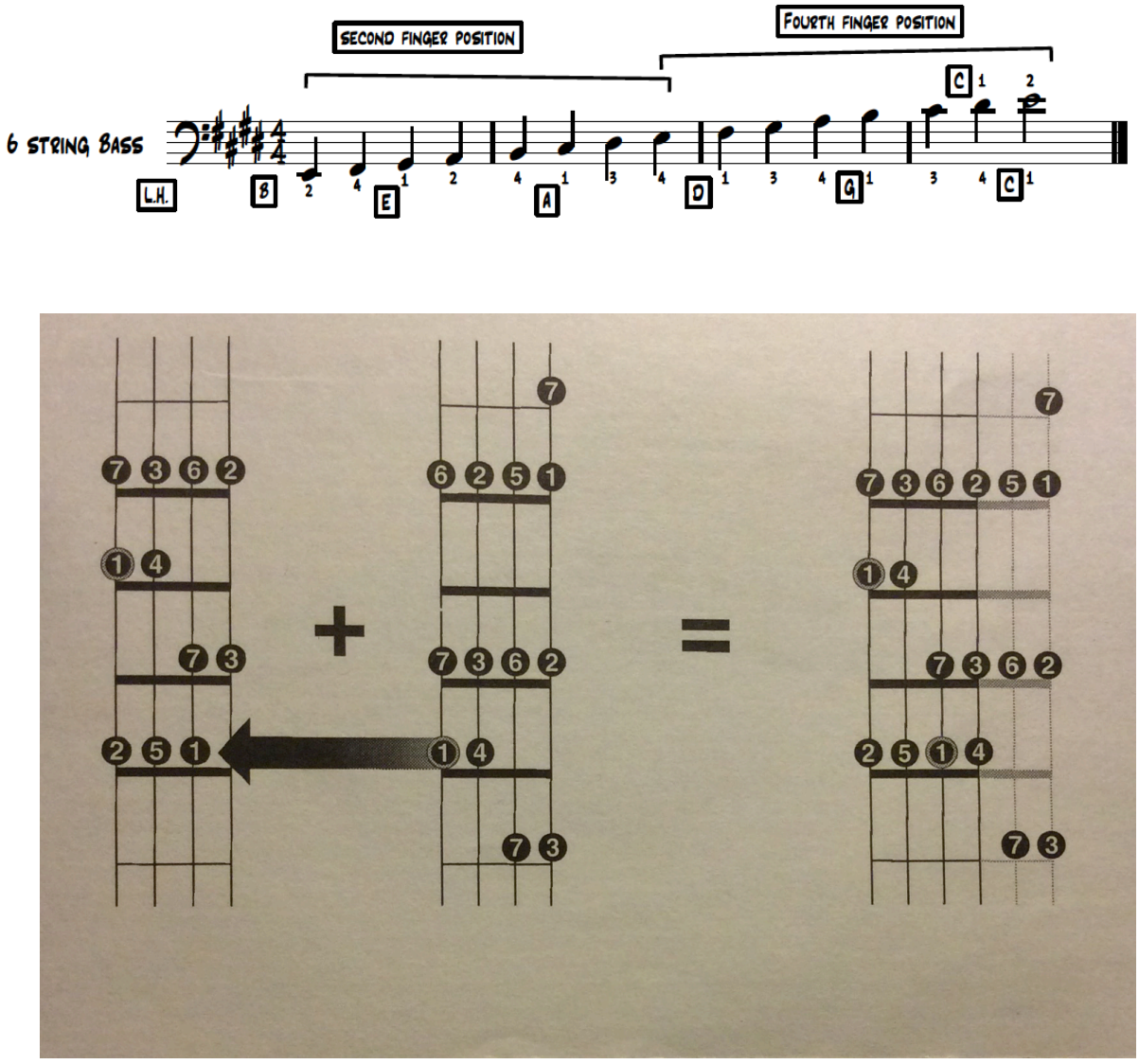


**Figure 95: Willis' two to four connection using a six string bass standard tuning, notation above (author's transcription) and graphic representation from *Harmony for Bass* (1997, p.33) below.**

In the same way, it is possible to connect the fourth finger position with the second one; in this case there will be a shift that actually should be called a "hand contraction." When using the fourth finger position, the sixth grade of the scale should be played with the pinky finger (contraction) instead of the ring finger; this sets up the start of the next octave with the second finger. Willis calls this connection "four to two." (Figure 96)

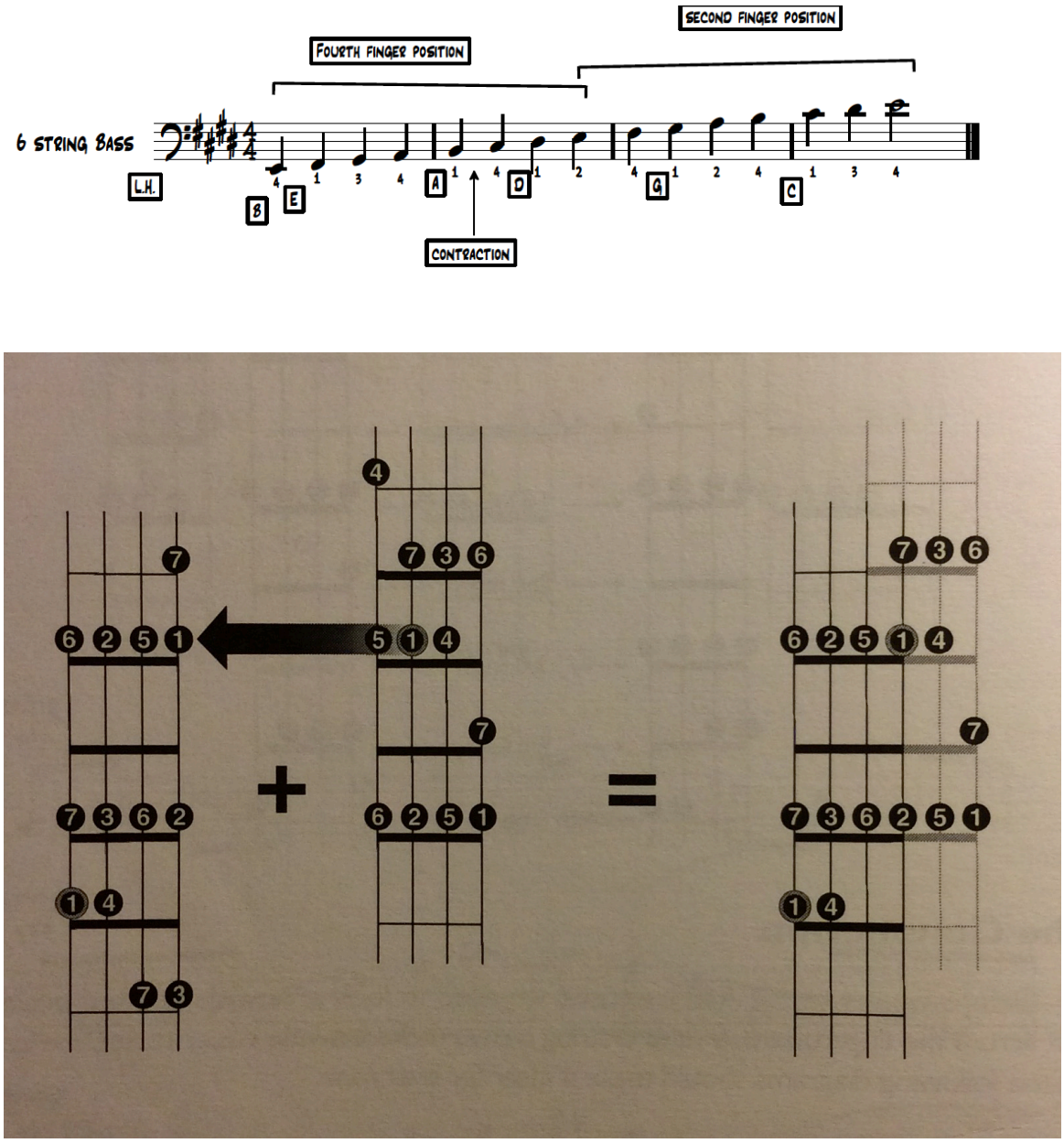


**Figure 96: Willis' four to two connection using a six string bass standard tuning, notation above (author's transcription) and graphic representation from *Harmony for Bass* (1997, p.34) below.**

The "4+2" area also permits one to play a progression in different keys using the same hand position. This progression, Em7/A7/Dmaj7/Dm7/G7/Cmaj7 could be played within the same "4+2" area. Em7/A7/Dmaj7 is a ii/V/I progression in D major and Dm/G7/Cmaj7 is a ii/V/I progression in C major. So by using the fourth finger position, D4A for D major key center and C2A for C major key center it is possible to cover both keys using the same "4+2" area. Of course there are some exceptions, and these are

related to the permitted chord extensions, but because the focus of this chapter is related to left hand position and fingering, I will not discuss this matter here.

For minor keys, the same principles apply; as every major key center has a related minor key center, the process should be easy. The location positions of C2A and C4E related to the C major key starting the first with the middle finger and the second with the pinky finger, generates their minor related positions called Am4E and Am1E. If the C major scale starts with the middle finger on the A string to generate a major scale, the same fingering starting on the E string with the pinky results in a natural minor (or Aeolian) scale. As seen in Billy Sheehan's method, starting a scale in different degrees generates different modes related to the key center. The connections between the two minor hand positions will work in the same way as for the major positions. The Am4E connects to the Am1G (in this case, in the G string), exactly when reaching the octave. Connecting Am1E and Am4D as the connection point between the major fourth position and second, requires a "contraction" this time when reaching the octave. Of course in case of minor progressions, the second chord is half diminished, and the fifth is the dominant flat ninth, but this adjustment can be done inside the 4+2 position.

As seen below, this method allows the bassist to play in multiple key centers in the same position (or 4+2 area). However some shifting is necessary when one position does not work for the entire chord progression. Taking C2E as the key center, one half step shift up or down will cover every key change possibility.

| KEY OF C | NEW KEY | NEW POSITION | SHIFT |
|---|---|---|---|
| C2E | D♭ | D♭2E | 1/2 up |
| C2E | D | D4E | None |
| C2E | E♭ | E♭4E | 1/2 up |
| C2E | E | E2A | 1/2 down |
| C2E | F | F2A | None |
| C2E | G♭ | G♭2A | 1/2 up |
| C2E | G | G4A | None |
| C2E | A♭ | A♭4A | 1/2 up |
| C2E | A | A2D | 1/2 down |
| C2E | B♭ | B♭2D | None |
| C2E | B | B2E | 1/2 down |

**Figure 97: shifting from C major key center to all the other major keys, from Gary Willis' *Harmony for Bass* (1997, p.55).**

## 5.3 Right Hand Fingering for Electric Bass

Almost all the electric bass right hand techniques are directly related to the guitar and double bass heritage. When electric guitarists switched to the electric bass, they started to play with the plectrum (or pick) or with right hand thumb. The double bassists started to pluck the strings on the electric instrument as they normally did on the upright bass, with one finger (usually the index).

The right hand technique is quite neglected in traditional electric bass literature. Certain methods concerning the specific use of some of right hand techniques such as slap and pop, double thumb, tapping etc. are gone into. However, right hand technical skills are the ones that have most evolved since the first Fender Precision appeared on the market. Nowadays, rock bassists especially continue to play with the plectrum, while a great variety of right hand finger techniques have been developed. The majority of bassists prefer to pluck the strings with two fingers; meanwhile there are techniques where three, four, or even five fingers are used.

There are electric bass players who use plectrum and fingers at the same time, as the case of Catalan bassist Carles Benavent.

From now on I will refer only to "finger technique," and that will be understood as right hand finger technique. In this part I will talk about the use of the pick, one and two-finger technique, but also about other new and less traditional techniques.

The plectrum is one of the first techniques used to pluck bass strings. This technique is almost used by rock bass players, but playing with the plectrum is definitively a good skill to acquire. As reported by Friedland (1996), the use of the pick gives a clear and very distinctive sound to the bass. The first thing to do is to choose a pick that's the right size and thickness; this will directly affect the tone of the played notes. The pick has to be held between the right hand thumb and the index finger (or between the thumb and the index and middle together) not too tightly. The plectrum has to be flat against the string. The little finger can rest against the pickguard (if there is one) or remain inside the palm of the hand; in this case, the right hand control may be less stable at the beginning because of the lack of an anchor. There are different possibilities to downstroke and upstroke; one is to move the forearm (easier) and another would be to move the wrist with a very little forearm movement (more complex). In jazz playing the use of the pick is rare but there are few exceptions as in the case of jazz master Steve Swallow.

In *The Complete Electric Bass Player Book: The Method*[92], electric bassist Chuck Rainey explains how to play the bass using the index finger. He states that "Beginning pick and thumb players can, with an elementary approach, familiarize themselves with playing the instrument with the first finger" (Rainey, 1985). It seems so long time ago,

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[92] This was one of the first electric bass methods. It was organized in 5 volumes, each one talking about a different topic.

and this statement about playing with one finger lets me think about the exponential technical evolution when talking about electric bass. Rainey talks about the stroke of the index finger that has to be "mature." The thumb has to be placed on the top of the E string (for four string basses) and the middle, ring finger and pinky on the pickup cover (as the first basses had pickup covers to prevent scratches due to plectrum use). He calls this "Position Bar." The thumb has to be neutral and shouldn't push down on the string; when playing on the G string, the position bar (middle finger, ring finger and pinky) has to move toward the bottom of the pickup cover, and the index finger has to be placed on the G string. A tension has to be created between the thumb on E string and the index on G, then plucking the G string with the index finger, which will "land" on the adjacent string right below. The same action can be done on the other strings with particular attention to the fact that when plucking the E string, the index finger will rest in no string but into the thumb that it will be placed over the pickup; normally the thumb is placed on the E string but because the E string is played it assumes a new position on the pickup. The sound that index finger produces is important and has to be a consistent and even sound on each string. Rainey however does not talk about a very important issue: the angle of the plucking hand. The right forearm and wrist position has to be slightly bent but not extremely flexed over the bass body.

**Figure 98: extremely bent wrist and forearm (left) and slightly bent and wrist position (right).**

When the wrist is too bent the muscles and tendons are stressed, and after hours of practicing or live performance, this position could cause serious injuries. Again, it is important to check the hand, wrist and forearm position using the thumb as an anchor and not the forearm in front of a large mirror[93].

[93] A good way to solve this issue could be to follow Gary Willis's method of using the plucking hand. As an example of how a too bent wrist can affect the right hand strength, there is an easy exercise: lock the middle fingers of both hands leaving both wrists and forearm perpendicular to the floor, then try to pull hard. Now bend the right wrist toward the floor and try to apply the same strength; it will hurt. This is one of the reasons to avoid excessive right hand wrist torsion. Willis also affirms that the vertical double bass right hand technique incorrectly applied to electric bass, will force wrist into unnatural position. Anchoring the thumb on the pickup and pivoting in order to reach the strings will cause more unwanted wrist torsion. To solution this problem Willis borrowed some tips from classical piano technique to support the upper arm leaving the forearm and wrist straight. A relaxed posture of the right hand leaves the wrist straight and it comes down naturally as observed for left hand posture. Then drag the hand back until the fingers find their natural position, as they would play on a piano keyboard. This is Willis's idea of a natural position. Another tip that helps one avoid bad wrist/forearm posture is to adopt a classical guitar playing position when sitting, placing the electric bass body between the two legs.

Most bass players use two fingers to pluck strings, adopting a technique commonly called the "rest stroke."[94] The rest stroke (that could be applied to even more than two fingers) is essentially what Rainey describes when he talks about the one-finger technique. The plucking finger hits the string and then "rest" on the adjacent string below. In the "rest stroke" pluck, the knuckles (or more specifically the base joint of the fingers) are responsible for the mechanics of the movement, while the string is plucked with the fleshy part of the finger pad area. The sound of the finger "resting" on the underneath string is part of the characteristic "drive" of this specific stroke. The finger at rest causes a "ghost note" that has neither pitch nor length but is played almost at the same time as the primary note and, however, it's there. There are some additional comments to make in order to fully explain the rest stroke technique. It is possible to use the index and the middle fingers always alternating them when ascending and descending, when playing a scale or phrase for example; it is also possible to use the "raking technique"[95] as already seen in right hand double bass technique.

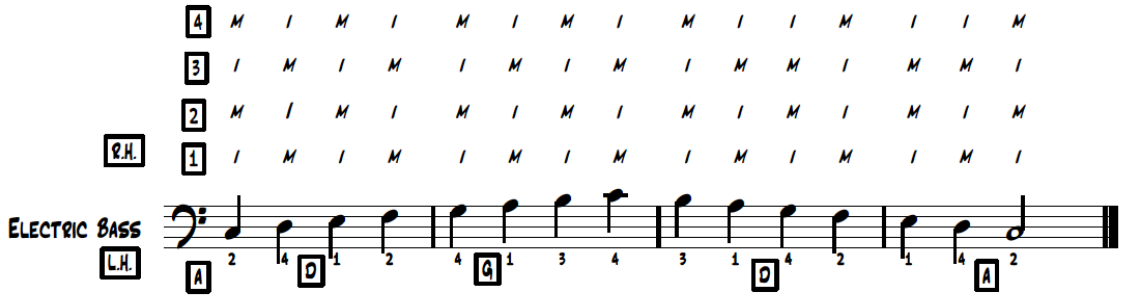


**Figure 99: right hand technique alternating fingers ascending and descending or alternating when ascending and "raking" when descending.**

Both techniques are valid, but the real problem here is the consciousness of the player about which finger he uses. This consciousness helps the musician to develop a

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[94] Rest stroke and free stroke are classical guitar right hand techniques (Oakes, 2000).

[95] Figure 99, fingering 3 and 4.

fluid right hand technique that allows him to perform fast musical passages easily. When there is a lack of right hand organization (use of random fingers and raking), the player will develop bad habits that will create technical problems.

One common bass player's issue is about "muting" or "dumping." Muting could be especially convenient when recording or playing an active bass with 4 or more strings. Active basses have an internal electronic device that amplifies the signal before it arrives at the amplifier. At some point in his/her career, every electric bass player passes through the experience of playing a scale with the right hand thumb, anchoring on the pickup. Notice then that the lower strings start to ring causing an unwanted and annoying sound. To prevent this ringing, there are some techniques that might be used; the most popular are the "floating thumb" and the one I call the "middle/pinky anchor."

The floating thumb is a technique that lets the thumb move basically following the plucking finger (Nitti, n.d.). This action muffles the string underneath the one that is being played, simultaneously muting the other strings with the inside part of the right hand. The middle/pinky anchor lets the thumb on the lowest string (muting it) and floats with the middle and pinky fingers (of course this works only when playing with the two finger right hand technique), following the plucking finger. John Patitucci is one of the bassists who applied and developed this technique.

**Figure 100: "floating thumb" (left) and "middle/pinky anchor" (right) techniques.**

Jaco Pastorius used the rest stroke technique in his playing, and he was without any doubt, one of the musicians who most revolutionized electric bass playing. Talking about his right hand technique, he was one of the first to consistently use the "ghost note" in the bass groove and while soloing. Pastorius borrowed and then modified this concept listening to Francis Rocco Prestia[96] and James Jamerson playing. The right hand in bass playing is comparable to a car engine; it keeps going the motion running. Pastorius understood this concept and added the use of ghost notes on sixteenth bass lines creating a perpetual motion[97]. From this time on electric bass players have developed this concept to another level[98].

Another and more contemporary evolution of plucking technique is called the "free stroke." With the free stroke, the finger does not rest on the adjacent string below after plucking. The string is plucked with the tip of the finger, and the main movement is

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[96] Prestia is the bassist of world famous funk band Tower of Power; he is the first one that used busy sixteenth notes bass lines.

[97] As Niels-Henning Ørsted Pedersen applied this technique on double bass (Butterfield, 2008).

[98] Some important electric bass players who use the rest stroke as the main right hand technique, are Victor Wooten, Dario Deidda, Hadrien Feraud, Federico Malaman, Victor Bailey, Marco Panascia and Richard Bona.

performed by the medial joints and only in a small part by the base joint. Players using the three or four fingers right hand technique are normally associated with the free stroke. Matthew Garrison, Damian Erskine, Tony Grey and Billy Sheehan are some great examples; mostly they also use a bass ramp between pickups[99].

**Figure 101: bass ramp from: http://www.playbassonline.com/ramp.html**

This is especially true for bassists who use a kind of "guitar finger-style" technique (plucking the strings with thumb, index and middle finger). Using this method, makes it easier to develop a lighter, faster and more fluid finger plucking style. This is because the ramp does not allow the fingers to rest and be held down between strings as when using the rest stroke. The fingers cannot apply a strong plucking so the player has a new dynamic palette to work with. This kind of technique however involves an increasing dependence on the bass amplifier and electronics.

### 5.3.1 Some New Right Hand Techniques

I will briefly describe some of the techniques that involve more than two fingers, starting with Billy Sheehan's three-finger technique.

Sheehan uses the ring, middle and index fingers when playing with his right hand, and he always uses this sequence A-M-I (ring, middle and index finger). As he plays with

[99] The bass ramp is generally a piece of wood or some plastic material, shaped to fit in between the bass pickups.

three fingers, when there is a four notes sequence, he starts the new sequence using a different finger. As analyzed in his left hand technique, the fact that he plays three notes for each string helps in this process, so every three bars the initial right hand fingering sequence starts again.

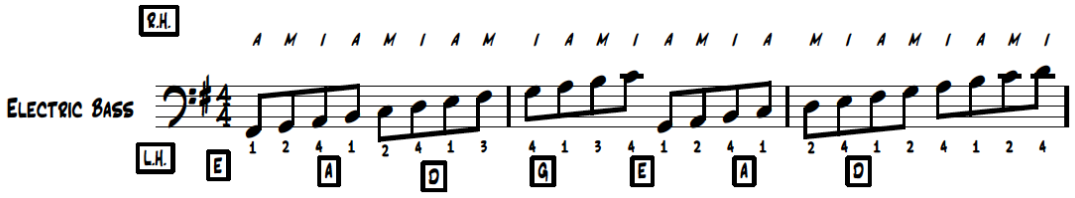


**Figure 102: Billy Sheehan's left and right hand fingerings while playing modes over G major key center, from *Billy Sheehan Basic Bass* (author's transcription).**

Another important aspect of Sheehan's right hand playing is that after many years of experimentation, he figured out that he could use the pickup of his bass (a Fender Precision style pickup) as a bass ramp. In his *Advanced Bass Lines* (2004) book and video, he explains that his custom made pickup is covered with epoxy resin in order to let the finger play over the pickup pole pieces without buzzing. The pickup is held in the same position by a custom made system. Finally, he points out the importance of bending only the finger's medial joints; in fact the ratio of the circle made by flexing the medial joint is smaller than the one done by the knuckles (or base joints). Translated, it means that the free stroke is more efficient, according to Sheehan than the rest stroke. So Sheehan plays a free stroke technique using his pickup as a ramp.

Steve Bailey is chair of Berklee's bass department and a pioneer of the 6 string fretless electric bass. He uses a three finger technique also called "rolling." Rolling it means that he plays with index, middle, ring, middle (I-M-A-M) fingers. This technique permit him to play 4 note groups; in the other hand the double use of the middle finger could cause some stress to the same finger. When playing triplets he uses the same

technique as Sheehan uses: A-M-I. Bailey assumes that his right hand technique comes from his classical guitar teacher. After analyzing his playing, I can assert that he does not use a bass ramp. It seems also that he does not mute the strings with any special right hand technique in order to avoid the ringing of the lowest strings when playing. He plays using the rest stroke.

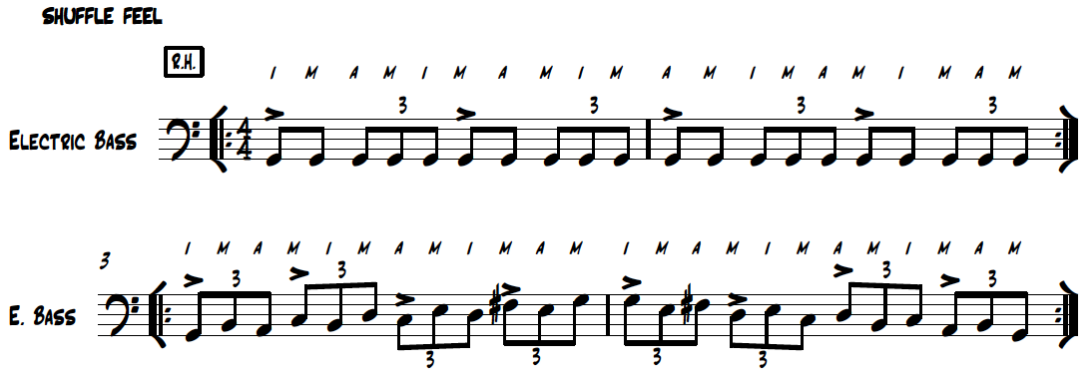


**Figure 103: Steve Bailey's right hand three finger "rolling" exercises from his website (author's adaptation).**

Gary Willis is another great bassist who uses a personalized right hand technique. He is a self-taught bassist, so naturally he's figured out his own right hand posture based on the position of the piano player's right hand. He is one of the first to discover the importance of playing in an economical way, using as little movement as possible. Willis does not use any specific fingering sequence; instead the index and middle fingers are the ones doing most of the work. He uses the ring finger to access the higher string since the hardest thing to do with the right hand is to ascend while string crossing. His ring finger plays the first note ascending anytime he is going up, giving time for the index, middle and thumb to shift. When descending, the ring finger just follows the other fingers and/or mute notes, always ready to play when changing right hand direction. Except when sustaining a note, Willis tries to keep all his right hand fingers on the strings and dampens the notes with them. He uses two hand positions, open and closed. The "open" position is when thumb and ring finger stay on two different strings separated by two other strings

(thumb and ring have a 2 strings span); in this case the index and middle fingers can play freely, while the ring finger plays only when the higher string is used. The other position is called “closed”, and the index and middle fingers are on the same string as the thumb is in contact with the string below; the ring finger is ready to play on the next string up. Willis uses the open position to play groves on stationary harmony and arpeggios, while the closed one is used for linear playing and soloing.

Gary Willis is probably the player that invented the bass ramp (also known as the Willis ramp) but he uses it differently from free stroke players. He uses the rest stroke a lot to do right hand dampening (or muting). In fact he mutes notes with the right hand because, as he states, stopping notes with the left hand causes unwanted buzzes on the string (Willis, 1991).

**Figure 104: Gary Willis’ open position (left) and close position (right) from Willis’ website.**

“Slapping and popping” are two revolutionary right hand techniques; here I will only briefly speak about them. Larry Graham is traditionally pointed to, in electric bass community, as the father of these techniques[100]. The slap technique involves hitting the bass strings at the end of the fingerboard with the bony knob of the right hand thumb. Popping means that the string is going to be pulled away from the fretboard with the index finger (but this could be done by the middle and the ring finger as well), letting it snap back onto the fretboard. A twist motion of the wrist, pivoting the forearm from the

[100] See chapter 1.5.

elbow in order to hit the string, creates the main movement of slapping. To pop it's necessary make a sort of loose fist with the right hand. Using index and middle finger to pop, the index should naturally fall between the D and G string while the medium should stay curled under the G string. The goal is combine the two techniques. When the thumb recoils from the slap without moving the hand far away from the string, pull the string from under with index or middle finger. This technique combined with some left hand techniques as hammer on, pull off and left hand ghosting could create many interesting rhythmic effects. The slap and pop technique is primarily a percussive technique, so the purpose is to emulate or complement rhythms in a normally stationary harmonic musical situation.

Now I will introduce some players who use the thumb in combination with other right hand fingers. Most of them use different right hand techniques, changing them according to musical situations.

Bassist Abraham Laboriel is a pioneer in this field, using a four or even five right hand finger technique. All his playing concepts can be found on his *New Bass Concepts* (1992). He studied at the Boston's Berklee College, finishing in 1972. He then moved to Los Angeles and he can be heard on more then four thousand recordings. He transposed the right hand classical guitar technique on the electric bass using thumb, index, middle, annular (ring) fingers in this combination T-I-M-A (thumb, index, middle and ring finger). Sometimes he adds the pinky to this sequence (T-I-M-A-P) using it to play a combination of five notes or doing a downward "raking" on all the bass strings. If the note sequence is a triplet, he rather uses the T-I-M (thumb, index and middle) fingers sequence. Laboriel normally uses this technique to play chords as a guitar player might, using especially the thumb to play roots and the index, middle and ring fingers to play a phrase or other chord tones. Others of Laboriel's techniques derive from drum concepts,

such as paradiddles[101]; he uses slapping and popping (he used thumb and others fingers to play down and upstroke before anybody else), open hand palm, and strumming techniques. Strumming is a very interesting technique; it is possible to find its use in Carles Benavent's[102] playing as well. The big difference between Laboriel and Benavent is that the Catalan bassist uses the pick, so the strumming is done with the others free fingers of the right hand (middle, ring and little finger); Benavent then applies this technique to Flamenco's style music such as Bulería that is a fast rhythm in 12 beats while Laboriel applies the concept to different kinds of "World Music," especially South American and Caribbean music.

Dominique Di Piazza[103] is one of the most important names in the international electric bass community, especially known in Europe. He was probably one of the first electric bassists to use a four finger left hand technique, which became his mainstay, using thumb, index, middle and sometimes ring finger.

In his youth he played guitar, but after listening to Jaco Pastorius, he was drawn to play the bass. At the beginning, he was frustrated by the fact he could not play as fast and clean as Pastorius using only two fingers. He found out that applying some of the "Manouche" guitar techniques on bass (he was raised in a Gypsy community) he could reach to play faster and cleaner. His technique is unique because he almost uses a thumb-index fingering, adding fingers as soon as the groove or phrase requires. Di Piazza

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101 Paradiddles are some of the basic patterns (rudiments) of drumming. The application of this technique on the electric bass is possible by distributing on the left and right hands this basic drum patterns, creating a percussive effect.

102 Mr. Benavent played for a long time with the great Spanish guitar virtuoso Paco De Lucia and with Chick Corea, along with a list of important collaborations. He sometimes combines this strumming technique with finger slapping.

103 Di Piazza is a French bass player; he played with great names in world jazz scene as John McLaughlin, Michel Petrucciani, Jean-Pierre Como, Bireli Lagrene, Trilok Gurtu, Didier Lockwood, Gil Evans and Antonio Faraò among others.

sometimes uses a special thumb fingernail, similar to the ones used by guitarists who play the Portuguese guitar. In some cases, he uses the thumb as a plectrum with incredible speed[104]. Di Piazza uses a bass ramp and a special bridge built by *Luthier* Mike Sabre that simulates a fretless bass sound on a fretted bass (Di Piazza, 2015).

Matthew Garrison[105] is the bassist who mastered and best incorporated the four finger right hand technique in his playing. The history behind this technique is similar as the one told by Di Piazza. Garrison's four finger technique involves a lot of ghost notes. The trick is to develop a capacity of knowing where and when to play the right notes in order to underline the chord shape. This technique is very percussive and requires a very low string action (as in the case of almost every "free stroke" player) and a bass ramp. (Garrison, M. personal communication, June 10, 2011).

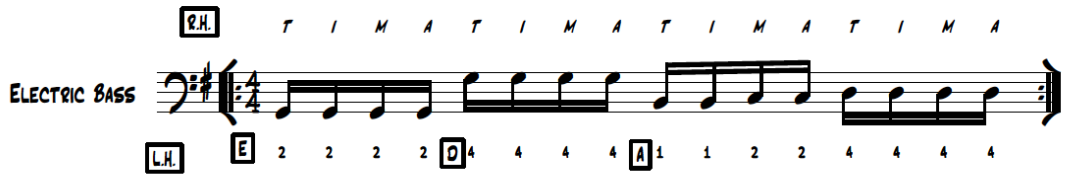


**Figure 105: Matthew Garrison's example of right hand four finger technique (author's adaptation).**

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[104] Di Piazza mastery of this technique can be heard on the CD *Front Page* with virtuoso French guitarist Bireli Lagrene and drummer Dennis Chambers.

[105] When Garrison was very young, he played with Josef Zawinul; he was going through some hard times because of the demanding repertoire, almost always played at very fast tempos. In order to develop a more efficient method of playing those difficult sixteenth note grooves, Garrison started to develop this new technique in his hotel room while touring with Zawinul's band. Zawinul played with Jaco Pastorius for some years with the band "Weather Report." Zawinul's taste about bass lines was strongly influenced by Pastorius playing. Obviously, as in Di Piazza's case, the use of more fingers to play complex bass lines and phrases was the perfect solution.

Victor Wooten[106] is a special case; in my point of view his influence within bass community is comparable to Jaco Pastorius'. I can't forget Marcus Miller as a link these two generations of bassists, but when Wooten appeared, it was a shock for everybody in the electric bass world. Maybe Wooten didn't invent anything new but he synthesized a great number of techniques and applied them in a very musical and effective way.

One of his innovative techniques is the "double thumping."[107] This technique is more like using the thumb as a guitar pick instead how it's done with the slapping technique. In fact, in this case, the thumb can be used to downstroke and upstroke as a pick would do; pressing the thumb down and up improves playing efficiency, doing in one whole movement on the two different actions.

In order to explain how it works, imagine hitting the E string with the thumb on the downstroke; the thumb will land on the A string and be ready to go back to pluck the E string again (upstroke). To do that, Wooten uses the corner of the thumbnail. In this way, he can regulate the snap of the string during the upstroke. The thumb is located just at the end of the fingerboard. This is the best position to hit the string. It is possible to apply this technique to scales and arpeggios as an exercise pressing the thumb down (Td), or the thumb up (Tu) when playing eighth notes or thumb down, thumb up and again thumb down (Td,Tu,Td) when dividing in triplets. Another of Wooten's techniques is "raking," with the thumb up through one or more strings from E to G for example (could

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[106] Victor Wooten is the youngest of five boys; he started performing as bass player with the family band at age five. So his life was, and still is all about music; he is a five times Grammy winner, founding member of the group Bela Fleck and the Flecktones and voted three times bassist of the year by Bass Player Magazine's readers poll (nobody before that had won this price more then once).

[107] This is something I talked about in the section about Abraham Laboriel. Marcus Miller has for a long time also used this technique too. It appears however that Victor's older guitarist brother Reggie showed him this technique when he was 8 years old.

be all the strings up) and then come back downward to one or more strings with the thumb up “raking” again. Combining plucking (or popping) is the next step. Actually the big difference between Wooten’s technique and slapping and popping is more or less the same between the rest stroke and the free stroke with two right hand fingers playing. It is a matter of movement economy; the sound is still percussive but less strong. It is possible in this way to have more sound control and technically achieve more complicated tasks. So the plucking is less strong than popping, and the position of the index finger (or both index and middle fingers) is near the thumb in order to pluck just after thumb down-thumb up movement, without wasting energy and time. The combination of thumb and plucking can originate a great number of easy to complex rhythmic exercises.

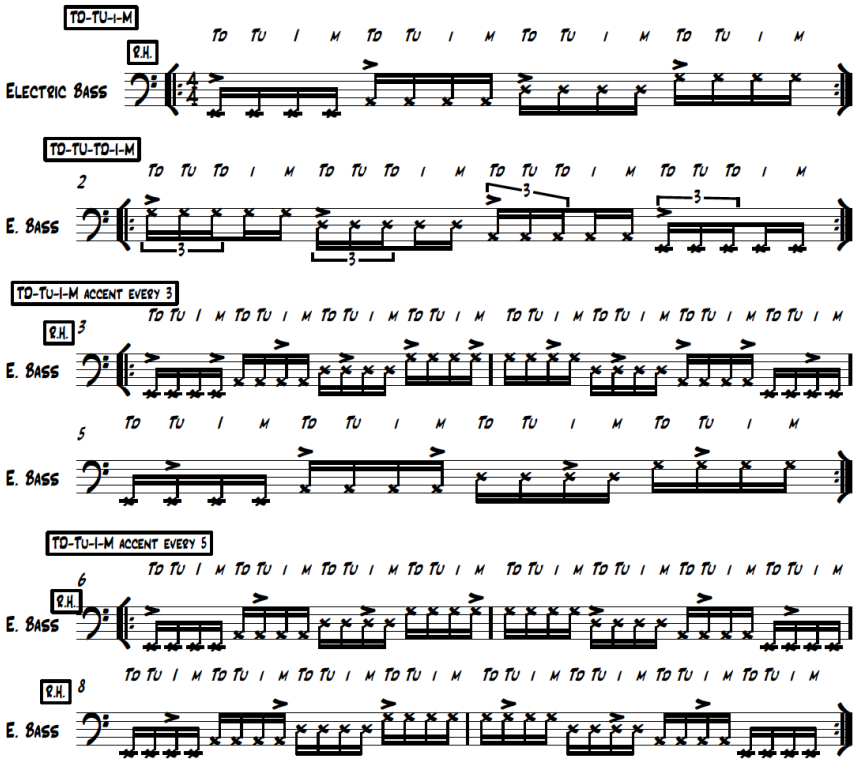


**Figure 106: Victor Wooten’s double thumping plus plucking, different fingers permutations and accents (author’s transcription).**

Damian Erskine[108] is one of the most in demand contemporary electric bass players. During my research I found out that Damian (as was the case with Jaco Pastorius) was a drummer, and he transposed some of that knowledge to the electric bass[109].

In his book *Right Hand Drive* he applies some of these drums rudiments to the electric bass and let the reader then from certain point on to create his own exercises. Erskine starts with scale exercises giving the normal two finger technique; then uses the thumb instead of the index finger (thumb-middle) and then uses a thumb-index sequence.

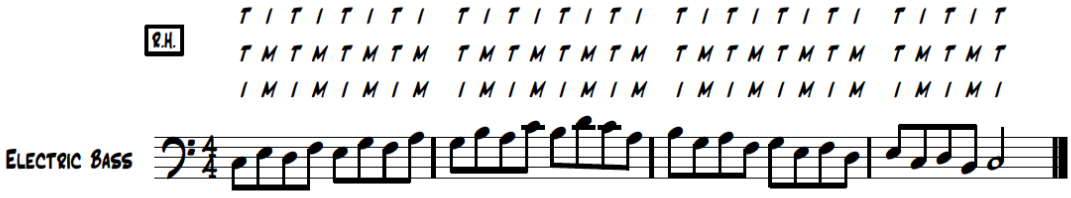


**Figure 107: Erskine's thumb, index and medium fingers introductive exercises from *Right Hand Drive* (author's transcription).**

In one of his videos, Damian Erskine says that he tried to develop a percussive technique different from the traditional slap and pop tradition. In his own words, he admits that he was not so comfortable with that method; in many ways his technique is similar to Wooten's way of playing and therefore he adapted it to his own skills. He

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[108] Damian Erskine played with Peter Erskine (Damian's uncle), the Jaco Pastorius Big Band, Gino Vannelli and Vardan Ovsepian, among many others. He is an educator teaching as an adjunct professor of Portland State University in Oregon, and he also lectures in several places around the globe. He is columnist for some bass magazines and bass specialized websites. He's written two books: *Right Hand Drive* and *The Improvisor's Path*.

[109] He uses rudiments and rhythmic grooves as the snare drum's "ghost notes" in his playing. In his *Right Hand Drive,* he teaches how to internalize this concept, offering a clear way to how to practice the exercises and how to apply these concepts to scales or arpeggios workout routine. Erskine's method is easily understood because his book is clear, using pictures, friendly legends of symbols and audio examples. Even so if something is not clear, it is possible to access to Erskine's YouTube channel.

substituted Wooten's double thumping with his own technique of hammering on a note with his left hand and then thumbing down. The result is the same, especially when executed at fast tempos; eventually there are others players who used and developed similar techniques: Adam Nitti teaches this kind of approach in his online lesson course[110]. Nowadays information spreads really fast. It is not possible to know for sure how each of the players here mentioned learned all these techniques, which eventually became their trademarks. The important thing to retain is that every electric bass player could adapt all or some of these techniques to his/her own playing.

[110] www.adamnittimusiceducation.com

# Chapter 6

## 6 John Patitucci

In this chapter I address my attention on John Patitucci's biographical data, left/right hand techniques and playing. I had the opportunity to compare all the techniques analyzed before with John Patitucci's way of playing; many of his left and right hand techniques have been already discussed in the previous chapters, because part of the common playing in jazz tradition. The goal is to analyze how Patitucci employs these techniques in his playing and teaching. Few years ago he launched his online jazz bass school which originally was only about double bass online lessons but recently he added also an electric bass course[111]. Accessing to Patitucci's online jazz school I had the possibility to compare his teaching methods in both instruments. The online school is part of a larger online website (ArtistWorks Online) dedicated to the teaching of various instruments and various styles. As others online courses it can be accessed by paying a fee.

John Patitucci wrote several books and instructional videos, but the online course offers a clear way to compare his playing on both double and electric bass. In this online course Patitucci plays over some "standards" structures as rhythm changes and blues; the comparison among his video lessons gave me the possibility to write accurately Patitucci fingerings and articulations on both instruments.

In addition to this valuable resource, I interviewed John Patitucci three times[112].

I argue that Patitucci is one of the clearest examples of the usage of traditionally bebop and contemporary language, mastering both linear and intervalic improvisation[113];

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111 http://artistworks.com/jazz-bass-lessons-john-patitucci

112 In January 28, 2013; June 8, 2014 and March 31, 2015.

applying these techniques on the double bass and on the electric bass. To fully understand this, it is important to take a look to his musical background. He started to play electric bass at the age of ten when he was living in New York and his older brother Tom was studying classical guitar and taught John the right posture for his left hand. Tom's teacher studied with the greats Andrés Segovia and José Tomás Pérez Sellés so John learned an ergonomic, economical and balanced left hand posture, using curled fingers and one finger for fret. This posture is the one he still teaches to his students. John Patitucci is left-handed but he plays using a right-handed instrument. He started to play the electric bass first; his main influences were James Jamerson, Willie Weeks, Chuck Rainey, Paul McCartney, John Entwistle and Jack Bruce. The kind of music he listened at that time was almost British Rock and blues. Patitucci brothers started to deeply listen to Wes Montgomery (that John Patitucci mentions as one of his great influences especially for articulation and vocabulary), John Coltrane and Charlie Parker records. After discovering jazz John became to listen to Ron Carter and Ray Brown that he recalls as his main influences when he started to play jazz double bass. Others Patitucci's double bassist influences are Percy Heat, Paul Chambers, Oscar Pettiford, Dave Holland, Niels-Henning Orsted Pedersen and Eddie Gomez. Even after starting to play double bass Patitucci never neglected his electric bass playing discovering later players as Stanley Clarke, Antony Jackson, Jaco Pastorius, Steve Swallow, Paul Jackson and Rocco Prestia. At the age of 13 John moved with his family to the San Francisco area and there he met a man that was very important to shape his musical development, Chris Poeler.

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[113] In very general terms, the basis of learning linear improvisation is learning what scale to play over each particular chord; bebop is a form of linear improvisation. In intervalic improvisation material played over the harmony beneath is based on interval; specifically triads and pairs of triads (Weiskopf, 1995). John Patitucci calls intervalic improvisation triad combining.

He studied classical bass at San Francisco State University and Long Beach State University. At San Francisco State University Patitucci studied classical double bass with Charles Siani[114]. At the time Patitucci studied using the Billè's books (Italian left hand fingering) but utilizing the German-French left hand fingering (1-2-4).

In 1996 he moved back to New York area and he studied classical double bass with Barry Lieberman, John Schaeffer[115] and with Thomas Martin[116]. Especially important was the influence of John Schaeffer, with whom he studied with from 1996 to 1998.

## 6.1 Left Hand Posture

Schaeffer was very meticulous about technical matters; he was especially helpful to improve John's left hand posture, intonation and shifting with particular attention to the transition area (between the crook of the neck and thumb register). Schaeffer used also the Billè's texts for teaching but with the Simandl's left hand fingering instead of the 1-3-4 Italian fingering. It seems that Billè's books are still frequently used because of their efficient organization while Simandl (or German-French) left hand posture it is the one preferred because apparently offers more intonation consistency. About this matter Patitucci asserts that double bassists using Billè's fingering in lower position have the tendency to play out of tune (Patitucci, 2015).

Comparing some of Patitucci's live performances videos before 1996 and after 1998, it is possible to grasp some body postural changes throughout the years, such as the angle of the elbow, shoulder and wrist when playing in thumb position (see Figure 108).

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[114] Which was assistant principal bassist with the San Francisco Symphony.

[115] Former principal bass of New York Philharmonic.

[116] Former principal bass of The London Symphony.

**Figure 108: John Patitucci posture in 1991 (left) from Mt. Fuji Jazz Festival with Blue Note and in 2012 (right) from his online Jazz Bass School.**

In my interviews to Patitucci he stated that he uses and teaches the 1-2-4 fingering. He is meticulous about fingering but sometimes he uses some "extensions"[117] borrowed from his electric bass playing. When "blowing"[118] he uses the four finger technique for half tone from D4 till G4 (Simandl and Billè's fourth position). In one of mine transcriptions, Patitucci uses the referred technique in lower positions then the ones he referred to in the interviews (starting from C4). In terms of electric bass playing, Patitucci also uses the 1-2-4 fingering technique for the left hand (as Friedland (1996), suggests) in the lower position of the neck. In his words: "one finger for fret in lower part of the fingerboard causes unnecessary stretching for the left hand." (Patitucci, 2015).

When playing double bass, as far as the left hand, Patitucci uses the Simandl's technique with the standard posture as already described in chapter 2. In both instruments he uses a "C" shape left hand postures.

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[117] In an extension, two adjacent fingers are separated by a whole step (Wolf, 2011).

[118] Blow: usually used for define the verbs to improvise. Also, simply used to mean to play an instrument.

**Figure 109: Patitucci's left hand position in the lowest part of the fretboard and his "C" left hand shape, from ArtistWorks Online Jazz Bass School.**

Patitucci suggests that on the double bass, the wrist and the forearm of the left hand should be straight and not bent. The shoulder and the upper part of the arm are approximately in the same line.

## 6.2 Right Hand Posture

In his online course on double bass Patitucci suggests four right hand basic positions; all of them are standardized right hand jazz techniques analyzed in chapter 4.

The first right hand position uses the index and middle finger together (Ron Carter style) using the fleshy part of the fingers. In the second right hand position Patitucci suggests the use of the index finger alone, as Ray Brown used to do. The third technique is the one that uses the alternated index and middle fingers. When playing fast passages, Patitucci suggests an "electric bass" right hand approach, alternating the index and middle fingers. The angle between the fingers and the strings is around 90º (see Figure 110).

**Figure 110: Patitucci's right hand position for fast passages from ArtistWorks Online Jazz Bass School.**

All these positions use the “rest stroke” technique as mentioned in chapters 4 and 5. Patitucci states that the arm should swing from the shoulder creating a solid “pulsing” motion, crucial for an effective bass “drive”. On electric bass, Patitucci suggests the one finger rest stroke, setting the thumb on the E string or on the pickup. He uses also the one finger right hand technique to “rake” between strings.

However, his predominant approach in terms of right hand technique is the usage of two fingers (index and middle fingers alternating) rest stroke. After watching several of Patitucci’s videos, I discovered that his rest stroke is a “hybrid” between the common two fingers rest stroke and the free stroke. As pointed out in chapter 5, the rest stroke uses primarily the flection of the base joint (or proximal joint), as the free stroke uses more a flection of the medial joint. Patitucci uses the best of the two techniques resting the finger on the string below after plucking, thus improving his speed because of the use of the medial joint. The sound quality benefits from the use of the flashy part of the finger as consequence of the rest stroke, and does not compromise plucking speed and accuracy. Patitucci usually uses the middle right hand finger to start musical phrases.

In order to prevent unwanted “rings” of the strings, Patitucci uses his ring and little fingers to mute them (as seen in chapter 5). This particular technique requires a lot of coordination. When playing upwards and downwards phrases and crossing strings, the ring and little fingers have to follow the movement of the index and middle fingers. The position of the ring and little fingers will always be one string below the two plucking fingers. As an example if playing in a four string bass on G string with the index and middle fingers, the ring will mute the D string and the little finger (pinky) the A string, while the thumb probably will mute the E string (see Figure 111)

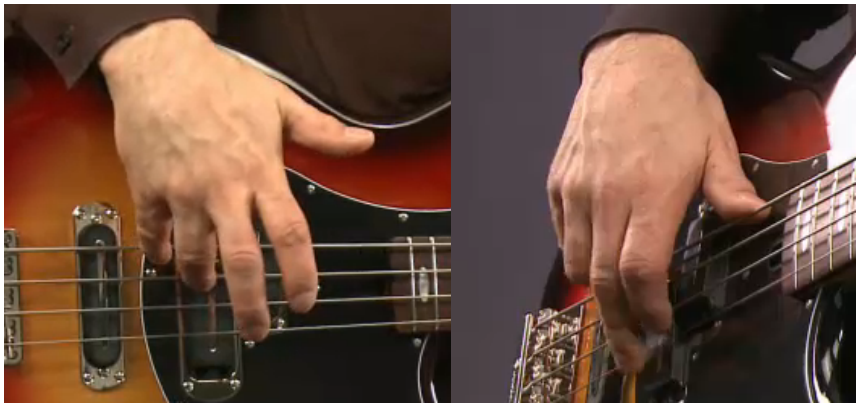

**Figure 111: Patitucci's right hand position, muting the strings with the little and ring fingers (left) and plucking alternating index and middle finger (right), from ArtistWorks Online Jazz Bass School.**

Patitucci uses also his palm to mute all the strings, plucking them with the thumb and index fingers. However, this technique has a different purpose because it is used to create a kind of "ghostly" tonal effect and especially used when playing stationary harmony "funk" style grooves. When playing in a "chordal" style, especially on the 6 string bass, he combines the right hand thumb (normally on lower strings) with the index, medium and ring fingers when necessary. The thumb could also be used to "strum" in order to create a warmer sound.

John Patitucci uses the slap technique with the thumb to slap and his index finger to pop. Some of these techniques are well explained in his *Electric Bass* (Patitucci, 1990) and *Electric Bass 2* (Patitucci, 1993) both on book or video version. However, throughout the years his slap playing became less present in his work. When talking about sound, Patitucci recommends playing with the fingers near the bridge for a middle, brighter kind of more "nasal" tone and stronger attack (Pastorius sound). In order to produce a darker sound (more double bass like), Patitucci suggests playing near the fingerboard.

## 6.3 Dividing the fingerboard

On the double bass, he divides the lower part of neck in 10 positions. Those positions are exactly the same as described by Van de Geyn (2007) in chapter 3, as a

result of the division of the lower part of the neck in 12 positions. Even though Van de Geyn uses a progressive numeric system for naming these positions, Patitucci uses the name of the note with which the position starts with. For example, Van de Geyn's first position is Patitucci's Ab position, and Van de Geyn's second position is equivalent to Patitucci's A position, and so on.

For fingering the major and natural minor scales in one octave, depending if open strings are used or not, Patitucci uses the terminology "open" or "closed" positions (see Figure 112). The "close" fingering is a variation of Ron Carter "horizontal technique" (1977), as shown in chapter 3.

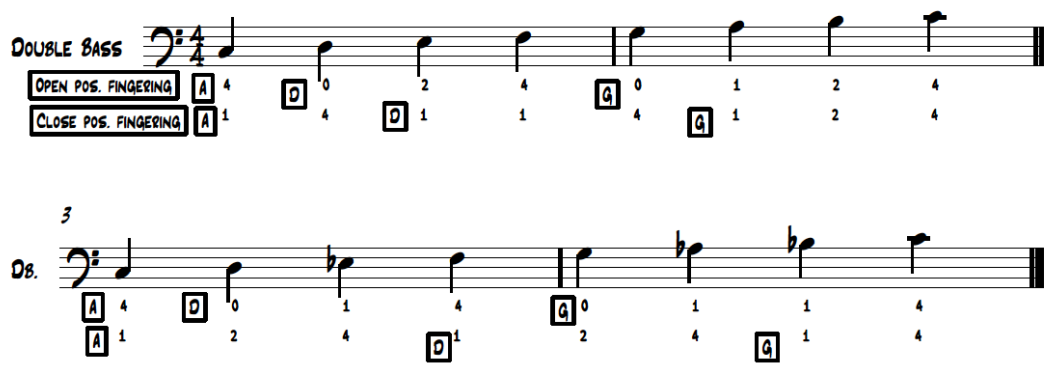


**Figure 112: C major and natural minor scales with open and closed position fingering from ArtistWorks Online Jazz Bass School (author's transcription).**

Almost all the technical issues regarding the transitional area between the crook of the neck and the thumb position are explained by John Patitucci using the same parameters so deeply analyzed in chapters 2 and 3. It is interesting to note how he names the positions in thumb register (see Figure 113), associating the different thumb positions with scales/modes/intervals. Patitucci's chromatic thumb fingering is the same as Petracchi (1980) and Wolf's (2011) ones. Patitucci uses the same names to define major and minor tetrachords as Wolf (2011). Patitucci's whole/half/half is equal to Petracchi's semichromatic fingering. Patitucci's Phrygian and half/whole diminished are respectively

Wolf's Locrian and diminished. The harmonic minor is so called because looks like the last tetrachord of a harmonic minor scale (H/W+H/H) and finally the minor third/half/half fingering is so called because of the intervals present in this fingering (W+H/H/H).

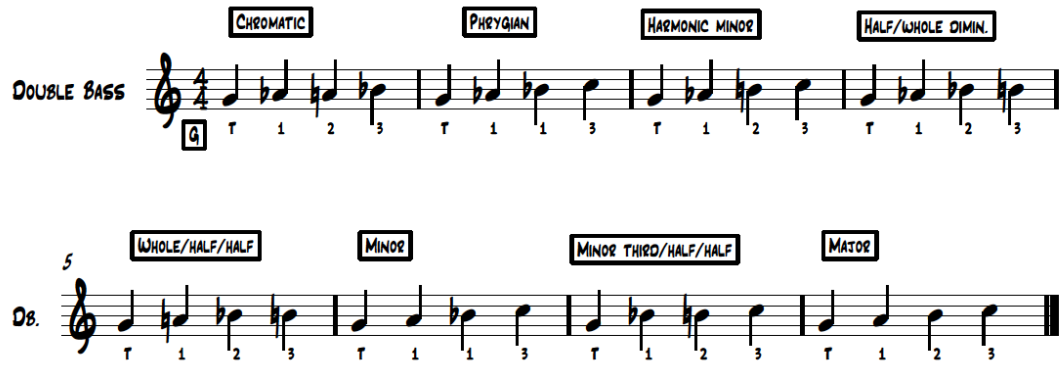


**Figure 113: Patitucci's positions in thumb register from ArtistWorks Online Jazz Bass School (author's transcription).**

For further studies about the thumb register, Patitucci also suggests the reading of Francesco Petracchi's book *Simplified higher technique for double bass* (1980).

Patitucci uses the movable thumb technique also used by Van de Geyn (2007), utilizing the thumb as an anchor to move up from the octave harmonic (from Ab4 up to D5). When the thumb is placed in another note other then G harmonic, Patitucci calls it "close" position as in the lower register.

In the electric bass, Patitucci divides the fretboard in 5 positions: the first position goes from the open string till the fifth fret; the second position is from the sixth fret to the ninth fret; the third position is from tenth to fourteenth fret; the fourth position goes from fifteenth to nineteenth fret; and finally the fifth position goes from the twentieth on.

Patitucci explores different ways to finger scales on the electric bass. In the following examples, however, it is evident the use of the 1-2-4 fingering in the lower positions (Figure 114).

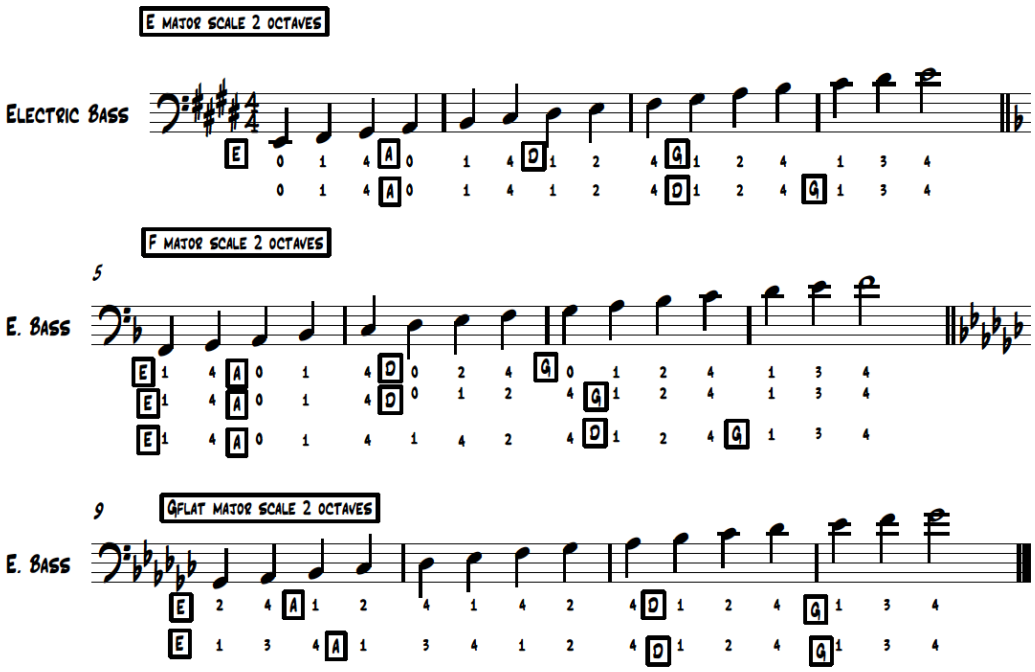


**Figure 114: Patitucci's two octaves major scales left hand fingerings from ArtistWorks Online Jazz Bass School (author's transcription and adaptation).**

The E and F major first fingerings are deeply related with the double bass scale fingering: the scale vertically goes across the strings and from the G string on, it proceeds in an horizontal way. The G flat major scale in the second fingering presents an interesting "extension" option with 3 notes per position/string (as Billy Sheehan normally does (Sheehan, 2004)). On the electric bass, Patitucci utilizes the same terms used for the double bass, naming open position scales when utilizing open strings, and closed position scales, when not using open strings.

## 6.4 John Patitucci: Tradition and Modernity

John Patitucci built part of his own jazz vocabulary learning from some of the traditional idiomatic schools of improvisation. His style is directly influenced by the early jazz and bebop era; the use of pentatonic, blues and bebop scales in his solos are a clear indicator in this sense (see Figures 128, 129 and 130). Patitucci is also influenced by "classical" and vocal music, and this is especially evident in the way he uses

ornamentation and melody in his solos and compositions. This is the "traditional" part of Patitucci's style. The use of other devices like triad combining, exotic scales, melodic minor scale and modes are the "modern" part of his style. In order to better identify and define Patitucci's style I analyzed interviews, his online school website, and solos and bass lines transcriptions and after this analyses I identified five fundamental elements in his playing that I divided like this:

1- **Vocal and "classical" music influences**

2- **Linear improvisation: bebop, quoting, articulation and vocabulary**

3- **Sound**

4- **Rhythm**

5- **Triads combining (intervalic improvisation) and others improvisation devices**

### 6.4.1 Vocal and "classical" music influences

His Italian background provided the chance of listening extensively to lyrical music and opera, especially Mario Lanza and later Luciano Pavarotti. His relation with "classical" music is also evident in his discography as a leader, especially in recordings like *Heart of The Bass* (1992), *Line by Line* (2006), and in his collaboration with double bassist Jeremy McCoy, *Dialogues With Double Bass* (2005).

Singers and horns are important influences in John's playing. These influences could be heard in Patitucci's phrasing; in fact a great part of the ornamentations and articulations presents in his solos are the result of the emulation of vocals and horns playing and timbre. According to him this exploration is one of the reasons why he started to play the 6 string bass (Patitucci, 2013). By the eighties, all of the electric bass players were deeply influenced by Jaco Pastorius but John wanted to create his own voice, going far away from this kind of stereotypes. Patitucci felts he needed more then four strings to

feed his orchestration and melodic range needs. One day after listening to Antony Jackson playing the 6 string bass, he immediately thought he found the answer to overstep range and orchestral limitations. When Patitucci joined Chick Corea's band, playing both electric and double bass, he had to develop a great amount of technique due to the complexity of Corea's music. According to Patitucci (2013), he received his first six string bass a couple of weeks before one of the first big Chick Corea's tours. At the beginning, dealing with a lot of written and difficult music, Patitucci had a hard time with the two extra strings (the low B and the high C). Corea however was very patient and this lack of pressure made Patitucci's adaptation to the new instrument faster (Patitucci, 2013).

### 6.4.2 Linear improvisation: bebop, quoting, articulation and vocabulary

"Bebop is the earliest form of true linear improvisation and much of modern jazz is directly related to bebop and therefore, linear improvisation" (Weiskopf, 1995).

Bebop is a fundamental part of Patitucci's playing. In his youth, he listened and transcribed solos from his mentors such as Ray Brown and Ron Carter. He also transcribed other instrumentalists, such as Wes Montgomery, Dexter Gordon, Freddie Hubbard and later Coltrane.

In his words "Normally bassists play separate notes without legato; it is like try to speak Italian with a German accent. Trane stuff flow in a different way… the gesture has to be there, with staccato it sounds too stiff, not flowing" (Patitucci, 2015). Analyzing his statement, we can postulate that Patitucci can sound in the bebop realm, because he learned from the bebop horn players, using or trying to emulate the same articulation he heard on their phrasing. Legato and phrase articulation are underrated in jazz improvisation text. This is one of the reasons I transcribed Patitucci's solos and bass lines

with particular attention to all these issues. I included all the necessary information in order to preserve all the essence of his playing.

Phrase motion, enclosures (Baker, 1987), outlines (Ligon, 1999), melodic conduction between chords are strongly present in Patitucci's playing because part of the bebop heritage. To better understand some of the parameters to build an effective jazz "bebop" solo I remind the importance of concepts as strong and weak tempo. According to Willis (1997), in the strong tempos it is important to play the "right" notes, better if chord tones or eventually tensions; the connections between this chord tones (especially in the upbeat if playing eighteenth notes phrases) could be done by playing almost any note in the weak tempo, chromatic, diatonic, ghost notes etc. In others words any note can work. It is a matter of phrasing and resolution (Erskine, 2014).

In order to link Patitucci's linear improvisation with bebop's paradigms I analyzed some of his solos and bass lines. The first Patitucci's transcription analyzed is *Evidence*[119]. The song arrangement is built on a funky groove at half tempo (following the harmonic progression) in the relative minor key (C minor) of the original theme (Eb major). Here Patitucci's approaches the arrangement in a very unusual way using a stationary harmony (C minor) to set the groove and then moving to the original harmonic structure for the solos. The application of this kind of rhythm over a jazz standard tunes is uncommon. Patitucci's bass line in Figure 115 pays tribute to some of the legendary electric bassists that he admires (Patitucci, 2013).

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[119] Evidence is a Thelonius Monk tune with 32 bars and an AABA form. This track is available on Patitucci's recording *Line by Line* (Patitucci, 2006).

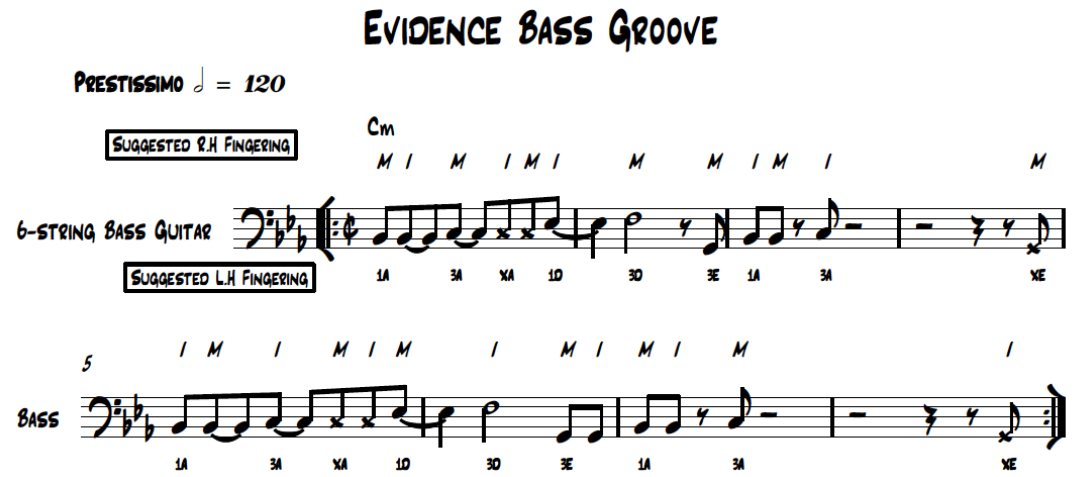


**Figure 115: Bass groove excerpt from "Evidence," John Patitucci Cd "Line By Line" (author's transcription).**

To contrast with the funky groove, John Patitucci starts his solo in a bebop style at an impressive tempo directly from the theme harmony. The constant eighteenth notes rhythmic division, legato articulation of the phrases and the use of outline[120], typical of the bebop vocabulary are the characteristics of this solo (see Figure 116).

In this transcription I suggest a specific fingering (for a 6 string bass) for both hands in order to maintain Patitucci's articulation unaltered.[121]

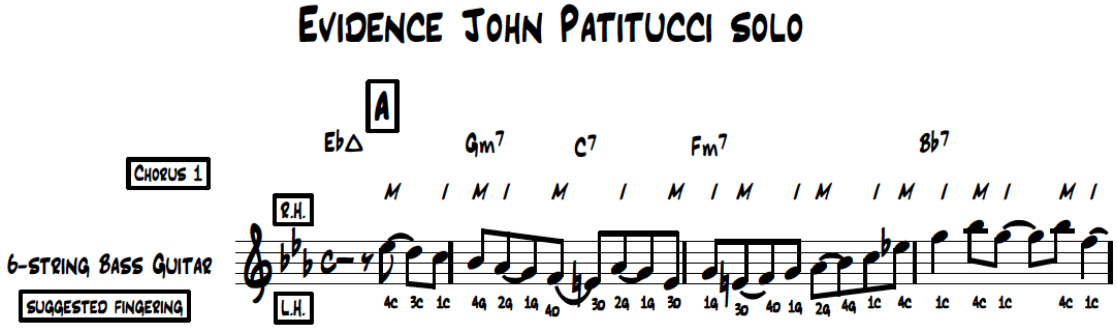


**Figure 116: Excerpt from John Patitucci's solo on "Evidence," first four bars fingering and articulation (author's transcription and adaptation, Appendix E).**

[120] Outlines are common patterns used by composers and improvisers to connect the harmony in a linear way. Outline is typically the skeleton framework, the general contour or shape of an object (Ligon, 1999).

[121] Others left/right hand fingering for the same phrase could be found in chapter 7.

Some of the improvisation devices that Patitucci uses are a good example of idiomatic bebop phrasing, as the use of enclosure[122] (Baker, 1987) or encircling[123] (Ligon, 1999) as shown in Figure 118.

Note how pianist Red Garland uses this improvisational device (see Figure 117), similar to Patitucci's transcription on Figure 118. This comparison shows how Patitucci recurs to the bebop tradition in his improvisations.

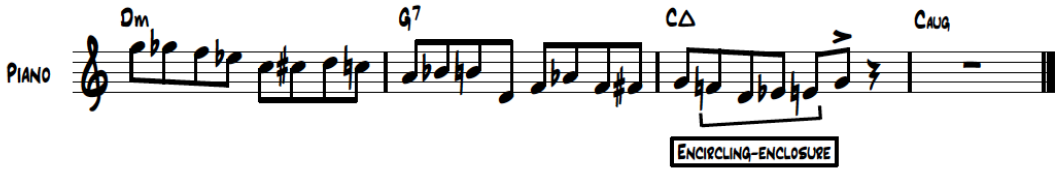


**Figure 117: Excerpt from Red Garland's solo on "What is this thing Called Love" recorded on the Cd *A Garland of Red* (1956) (author's transcription).**

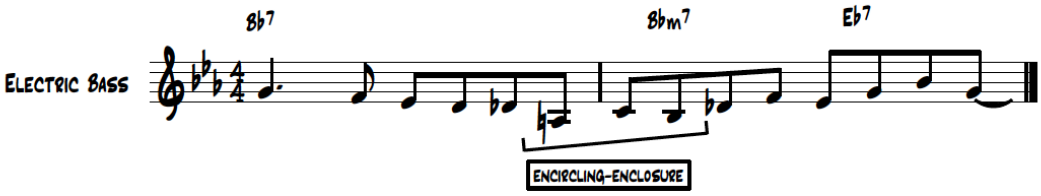


**Figure 118: Excerpt from John Patitucci's solo on "Evidence"; enclosure (author's transcription, Appendix E).**

From the analysis of Patitucci's solo, it is also important to note other interesting bebop idiomatic technique like the cyclical quadruplets in Figure 119. According to Ligon (1999), this pattern has four varieties; it's called cyclical because it cycles back to the first pitch and quadruplet because it is a four notes pattern. The primary pattern could be a 1-6-

[122] The enclosure is a bebop technique that is a delay on the arrive in a target note, normally a chord tone (CT), using two notes, or sometimes more, half step up and another half step below the same chord tone.

[123] Encircling is a CT (chord tone) followed by an UNT-LNT (upper neighbor tone- lower neighbor tone) going back to the CT. It is possible to use all kinds of combinations of UNT and LNT, which can be both diatonic than chromatic. So the enclosure could be a type of encircling; that's why I basically use both terms as synonymous.

7-1 format (for example G-E-F#-G), and the other combination could be the retrograde, the inversion and the retrograde inversion of the primary one.

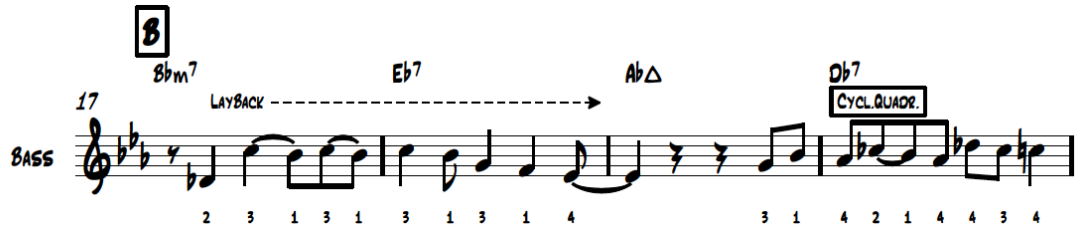


**Figure 119: Excerpt from John Patitucci's solo on "Evidence," Cyclical Quadruplet (author's transcription, Appendix E).**

Another classic bebop device used by Patitucci is the digital pattern (Ligon, 1999). In Figure 120, it is clear the usage of a 1-2-3-5 pattern (or digital pattern, according to Ligon, 1999) over a major chord.

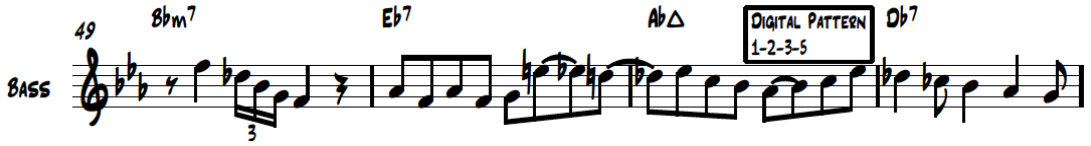


**Figure 120: Excerpt from John Patitucci's solo on "Evidence," digital pattern 1-2-3-5 (author's transcription, Appendix E).**

I also analyzed some of Patitucci's solos and walking bass lines over this specific harmonic structure, the "Rhythm Changes". Especially interesting is the comparison between the electric and the double bass approaches to walking bass lines and improvisation. From the transcription and analysis of several Patitucci's solos and bass lines over rhythm changes, I was able to observe every left hand fingering and right hand plucking due to the high quality of the video recordings analyzed[124]. This comparison is especially important to see how Patitucci plays with different instruments on the same harmonic structure (solos and walking bass lines).

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124 http://artistworks.com/john-patitucci

In terms of the bass lines, there are some characteristics that normally are associated with the specificity of the instrument: fingering is one of these features. One of the techniques associated with double bass right hand fingering is the "big finger" or "stationary fingers" (Carter, 1998) that indicates the use of both index and middle together while playing (notated as B in the examples). It is possible to see that the use of the big finger is almost a double bass technique; however Patitucci also uses it in his electric bass playing (Figure 121).

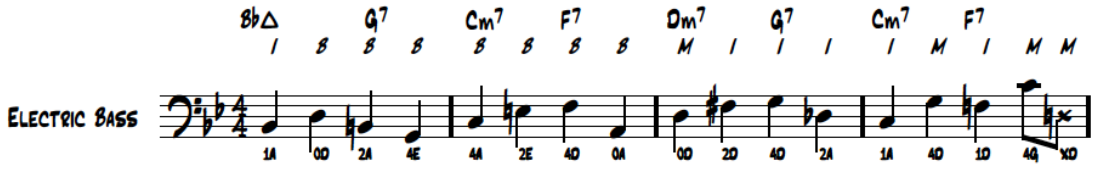


**Figure 121: Patitucci's walking line over rhythm changes on electric bass, first four bars (author's transcription, Appendix D).**

In these first four bars of the rhythm changes (played at fast tempo - 250 bpm) it is possible to see how Patitucci plays almost chord tones on beats 1 and 3, and chromatic, diatonic or chord tones on beats 2 and 4. This is a good practice to create walking bass lines as described by Downes (2004) in his *The jazz bass line book*. Comparing the B section of the two transcriptions in Figure 122 and 123, it is possible to see how some passages almost match (see bars 17-18 and 21 in both Figures).

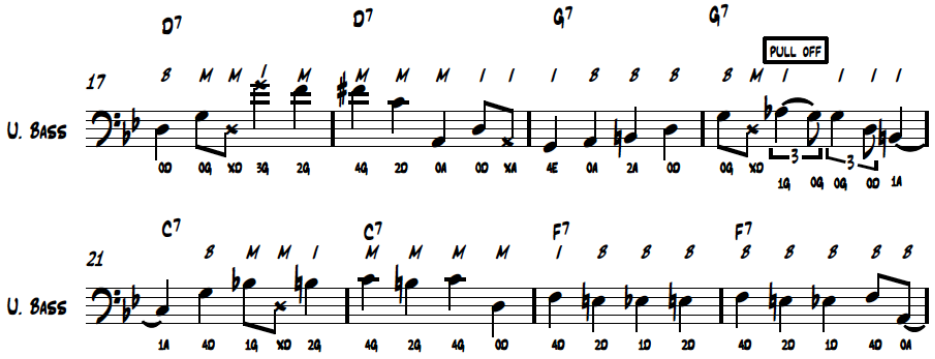


**Figure 122: Patitucci's walking line over rhythm changes on double bass, B section (author's transcription, Appendix C).**

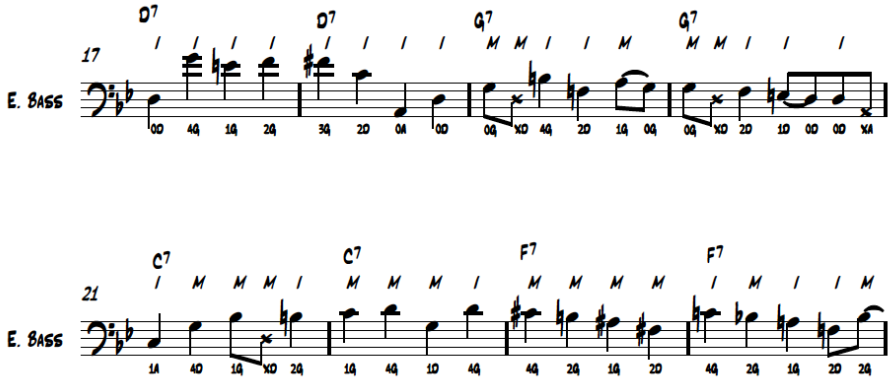


**Figure 123: Patitucci's walking line over rhythm changes on electric bass, B section (author's transcription, Appendix D).**

In the electric bass line transcription bars 23 and 24 (Figure 123), Patitucci substitutes the F7 chord with one bar of C#m7 F#7 (one chord each two beats) and another of Cm7 F7 creating a II-V chromatic approach. According to Levine (2011) this is a quite common device in jazz reharmonization. Moving away the key center half step higher and then release the tension returning in the original key (half step below).

It is also interesting to note that, when playing walking bass lines on the 6 string electric bass, Patitucci does not use the C string. I noticed that on the lower part of the bass he uses the same 1-2-4 fingering. Even when playing in the higher register, sometimes Patitucci uses on electric bass the same fingerings that he uses on the double bass (1-2-4). The fact that the C string is almost not used while "comping" on the electric bass and the use of similar bass lines in both instruments are a good indicator of Patitucci´s thinking. In most cases, Patitucci uses the same way of thinking for both instruments, especially when playing walking bass lines. Patitucci frequently uses just one right hand finger when playing walking bass lines in both instruments, usually the middle finger. One of Patitucci's most used techniques is "raking" (Van de Geyn, 2007). Generally he uses this technique to play with same finger in descending lines.

I noticed that the frequent use of eighteenth ghost notes (normally "muting" the string below the one where playing the note) gives to Patitucci's bass lines a rhythmic impulse that is a characteristic of his playing (Figure 124). The use of this specific technique is more evident in his double bass playing. It creates a kind of "perpetual motion" as defined by Butterfield (2008).

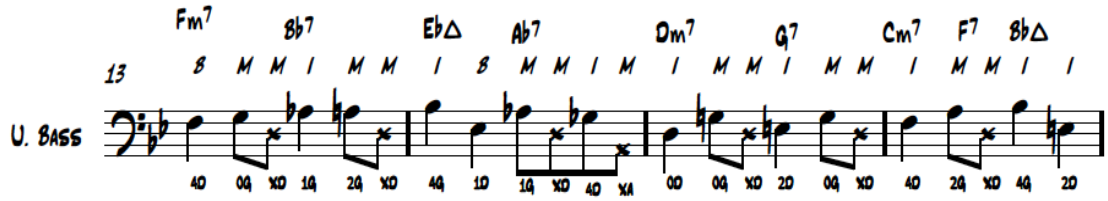


**Figure 124: Patitucci's walking line over rhythm changes on double bass (author's transcription, Appendix C).**

Of course the subdivision (in this case eighteenth notes) has to be well executed. This topic will be treated later on this chapter when talking about rhythm.

Quoting[125] is one of the most common devices in bebop vocabulary (Berliner, 2009) and was used by some of the most important jazz instrumentalists, such as Miles Davis, Charlie Parker, Dexter Gordon, among many others. In the first chorus of his electric bass solo here analyzed (Figure 125) Patitucci quotes the famous song *It's Only a Paper Moon*[126].

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[125] Playing a portion of a well-known tune into a solo. Quoting means to have a great knowledge of the "American Songbook" repertoire; insert quotation in any key and place show a great mastery in this kind of improvisation. However quotation has not to be abused and it is typical of the early jazz-bebop era but its moderate use is still appreciated today among jazz community.

[126] Song written by Harold Arlen, E. Y. Harburg and Billy Rose in 1933.

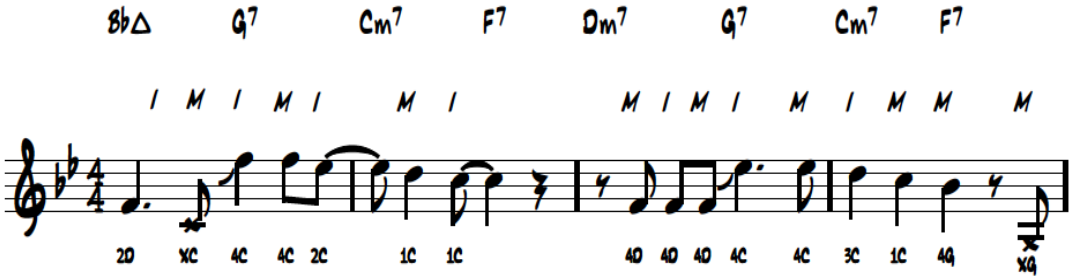


**Figure 125: Patitucci's solo on electric bass over a rhythm changes; first four bars quoting It's Only a Paper Moon (author's transcription, Appendix B).**

It is possible to compare the first four bars in Figure 125 with the first four bars in Figure 126. In Patitucci's solo the melody is transposed a third minor above the original key (Figure 126) and played with some rhythmic variations.

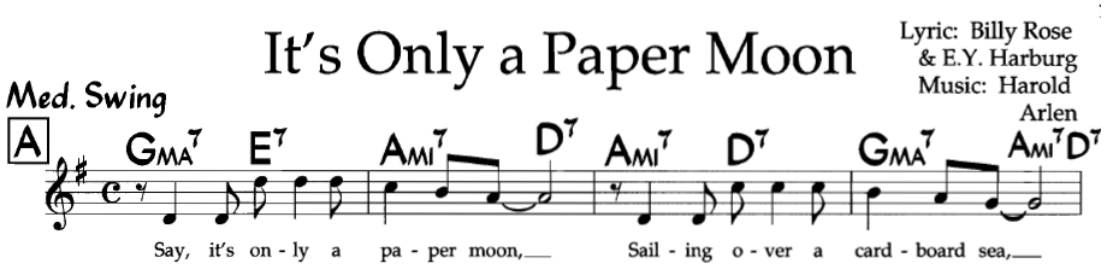


**Figure 126: It's Only a Paper Moon theme from *The New Real Book 2* (2005).**

Examining Patitucci's solos in both instruments over the rhythm changes harmonic structure, I found some interesting analogies.

It is evident that the melodic phrase or motif[127] and rhythmic division is the same in the first two bars and the first half of the third bar in both examples (Figures 127 and 128); only the octave where the phrase is played changes. As in this case, the same "motif" can be played in different "A" (as in this case) because the harmony is the same. Patitucci uses in the third bar (Figure 127), a Bb bebop major scale (Baker, 1987).

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[127] Motif is the smallest melodic entity from which much of the reminder of the music is written or played (Coker, 2010).

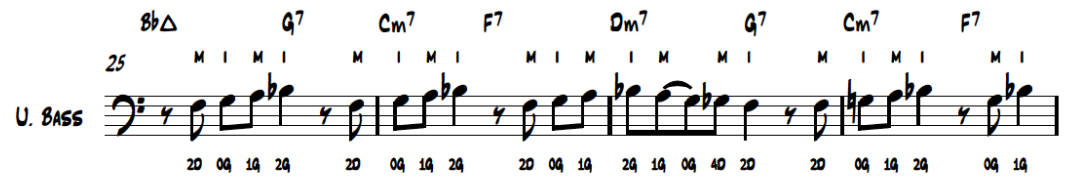


**Figure 127: Patitucci's solo on double bass over a rhythm changes; last "A" four bars (author's transcription, Appendix A).**

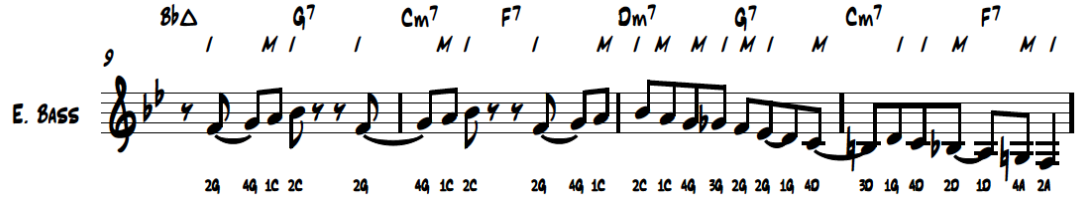


**Figure 128: Patitucci's solo on electric bass over a rhythm changes; second "A" four bars (author's transcription, Appendix B).**

The use of Bb major scale and Bb blues scale is present in both solos (on electric and double bass solos); but I noticed that for ending his solos Patitucci uses frequently "blues" oriented lines (as in Figure 129). These kind of "bluesy" lines permit to the soloist to be clear about the fact that the solo is ending. This "resolution" is very used among jazz players. Blues scales are often used at the beginning or at the end of the solo because create the sense of release and familiar sound in the audience (Ligon, 1999).

Ornamentations are also important devices in Patitucci´s playing. The use of legato, sliding, acciaccatura (Figure 129), appoggiatura, bending and vibrato are part of his improvisation tools. According to Patitucci (2015), he developed a way to make the bass sound similar to the human voice and also to a horn player. The uses of all these tools are the result of his attempts to reproduce these specific sounds on the double and electric bass.

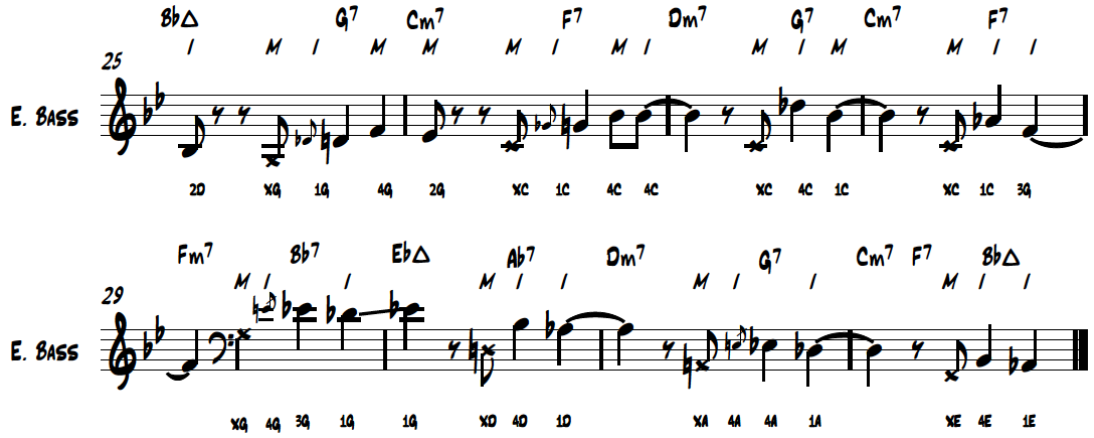


**Figure 129: Patitucci last "A" of rhythm changes solo on electric bass, Bb blues scale (author's transcription and adaptation, Appendix B).**

In Figure 129, from bars 27 third beat Patitucci plays Db, Bb, Ab, F, E (as ornament that emphasize even more the bluesy "mood" because is the flat five of the chord), Eb and again another octave down. This is the Bb blues scale (Ligon, 1999). Even the ornamentations on bars 25 and 26 give to the phrase a "minor/bluesy" flavor so typical in jazz idiom (appoggiatura from minor third to major third).

Tension/release (Berliner, 2009) and the right use of spaces or pacing (Crook, 1991) are also important aspects of jazz idiom.

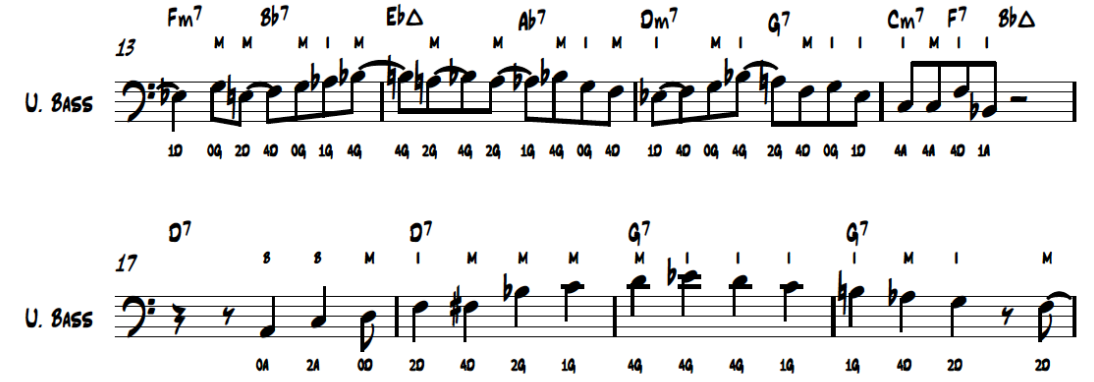


**Figure 130: Patitucci's solo on double bass over a rhythm changes; second "A" last four bars and "B" first four bars (author's transcription and adaptation, Appendix A).**

In Figure 130, Patitucci's solo develops from a busy eighteenth note phrase in the second "A" of the structure to a more lyrical "B" part with quarter notes, creating a

"release" (B) after a "tension" (second A) opening to new options for the orientation of his solo. It is also interesting to note the use of encircling and chromatic notes on bars 13 and 14 and the legato notes on bars 13, 14 and 15. On bars 17-18 Patitucci uses Eb melodic minor ascending scale (D altered scale) and on bar 19-20 uses a C harmonic minor scale (G Mixolidian b2/b6).

The change of register is the biggest difference I noticed between Patitucci way of soloing on the double bass and on the 6 string electric bass. He plays his solos on the 6 string electric bass in the higher register, taking advantage of the great extension of the instrument. When "comping," especially playing walking bass, Patitucci uses very similar lines and fingerings in both instruments. As Patitucci affirms: "the player switches the instrument, but not the brain" (Patitucci, 2015).

### 6.4.3 Sound

Sound is like a signature; something on which musicians are working on all their life. A clear and distinct sound, especially when recording or playing in a group setting, is a very important issue. For jazz double bass player this matter has a lot to do with the quality of the instrument and the use of an effective left/right hand technique. As Reid (2000) affirms: "What constitutes a good sound is very subjective and perhaps there is no absolute answer." However Reid assumes that for him words like clarity, energy, warmness and full bodied are part of his definition of good sound. Patitucci is aware about the importance of sound on both the instruments. As Patitucci (2015) states: "Normally electric bassists are guilty to use low action strings and high volume on amplifiers so they don't really take care of their sound".

Coordination of left and right hand has a lot to do with how the sound gets projected. Normally jazz double bass players assume that the sound is a right hand issue, neglecting the fact that the left hand has a lot to do with the tone production. The amount

of pressure that the left hand exert on the string while playing could produce different length and note sustain (Patitucci, n.d.). A good coordination between hands is the first step for a good sound in both instruments. The note length (and so the sound) can vary dampening the string with the right (Willis, 1991) or left hand (Patitucci, n.d.).

Sound varies with the distance between the strings and the fingerboard. The combination of steel strings and electronic pickups enable the modern double bassists to play with string extremely low and still be heard. The higher are the strings from the fingerboard, the more they can vibrate; the result will be a louder the double bass sound (Reid, 2000). Personally I think that a double bass player has to use an amplifier but without been depending of it. My choice about stings distance from the fingerboard is 0,65 cm for the G string, 1 cm for the D and A strings and 1,2 for the E string as Reid (2000) suggests. I had the opportunity to play on one of Patitucci's double basses and I felt that the distance between the fingerboard and the strings was quite comfortable for me. I tried briefly also his new 6 string electric bass with semi-hollow body built by Yamana's luthier Pat Campolattano. This bass action[128] is higher than others electric basses. It is an electric instrument but because it is semi acoustic its sound is unique (Patitucci, 2015). I can say that because it is a semi-hollow body bass his sound is a middle term between a regular electric bass and an acoustic bass guitar[129].

From the analysis of Patitucci's career as a leader, it is interesting to note that he played both instruments in most of his records. However, at the beginning (Patitucci's first record was launched in 1987), the majority of the compositions were played on the electric bass. This trend changed with time and after Patitucci returned to the New York

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128 "Action" means the distance between the fingerboard and the strings.

129 The acoustic bass guitar is an instrument with a hollow wooden body, which has the same tuning pitch as an electric bass guitar.

area in 1996, he started to record and play more on double bass. However Patitucci released his last recording *Brooklyn* in 2015 using only his 6 string semi-hollow electric bass to record; as far I know this is the only recording in his name he released playing exclusively electric bass.

I asked Patitucci (2015) why he recorded only using the electric instrument; he said that electric bass is a part of him and sometimes people forget that he plays also the electric bass. This recording is a sort of statement, where Patitucci affirms his position in electric bass community showing that it is possible to play this instrument in a more "jazzy and acoustic" context (Patitucci, 2015).

### 6.4.4 Rhythm

When questioned about how to improve rhythmical proficiency, Patitucci (2014) answered: "Listen to Billy Higgins' ride cymbal on Herbie Hancock's first record *Takin' Off* and try to play the cymbal along with the record". Why is so important rhythm in jazz and how it is possible to understand its essence?

It is consensual that jazz is the result of the mixture between African and European cultures. As reported by Schuller (1986) "It seems in retrospect almost inevitable that America, the great ethnic melting pot, would procreated a music compounded of African rhythm, formal, sonoric, and expressive elements and European rhythmic and harmonic practices" (Schuller, 1986, p.3). According to several authors, such as Schuller (1986) and Fiehrer (1991), the Caribbean and Afro-Cuban heritage had a great impact in jazz rhythm. This impact creates the subdivision of the binary beat in three parts or the three-against-two. This relation is the true heart of "swing" feeling. For this reason Patitucci teaches to his students 6/8 rhythmic independence exercises that he calls

"Abakuá"[130] rhythms, in order to get this three-against-two (3:2) internalized. Fundamentally, these rhythms are a sort of "clave"[131]. The clave is the "core" of the Afro-Cuban music tradition. Patitucci had contact with some of these rhythms through acclaimed Panamanian piano player, Danilo Pérez.[132]

John Patitucci (2014) states that Pérez has a very sophisticated way to teach rhythms, using very advanced types of "claves" in odd meters, but always having the 6/8 African traditions as background.

Here´s an example of one of Pérez's exercises used by Patitucci:

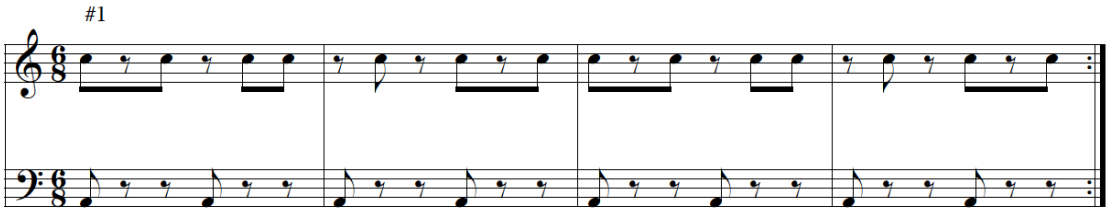


**Figure 131: excerpt of Danilo Pérez's rhythmical independence exercises (Abakuá rhythm) in 6/8 from author's personal archive.**

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130 The Afro-Cuban Abakuá (sometimes spelled Abacuá or Abakwá) is difficult to define because it encompasses many elements, including: secret societies, traditions, language, music, culture, dance, religion, politics, beliefs, and mythology, to name a few (Truly, 2009). Abakuá is the result of the "African Diaspora" in the new continent. The members of this secret society used to dance and play rhythms. These rhythms influenced directly the creations of Afro-Cuban music, the "clave" and then the "Latin" jazz. The contact with these rhythms were brought to New York by Luciano "Chano" Pozo Gonzalez and inspired many Afro-American jazz musicians such as Dizzy Gillespie. Gillespie and "Chano" Pozo Gonzalez created the *Cubop*, *Afro-Cuban jazz* or *Latin jazz* (Truly, 2009).

131 Afro-Cuban music is all centered around the *clave*, which incidentally, is Spanish for "key". The clave is an interchangeable two-bar rhythm to which all other rhythms must relate, whether as "3:2" or "2:3" (Goines & Ameen, 1990) . More information about clave, three-against-two and the connection with West African music can be found in Eugene Domenic Novotney's doctoral dissertation: *The 3:2 Relationship as The Foundation of Timelines in West African Musics* (1998) .

132 John Patitucci and Danilo Pérez play together in several projects as the Wayne Shorter Quartet and Children of the Light Trio.

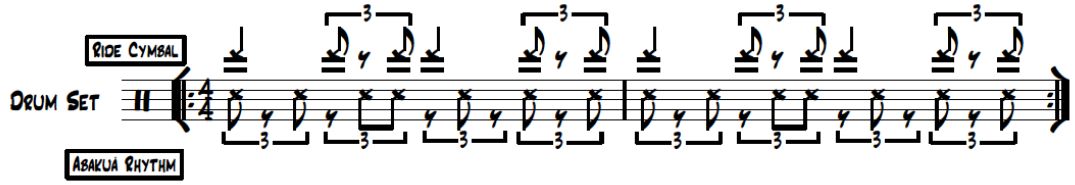


**Figure 132: Ride cymbal over Abakuá rhythm in 4/4, independence exercise (author's transcription).**

It is interesting to note that the exercise shown in Figure 131 has to be executed without instrument, walking around the room, clapping the top staff and walk across the room to the beat of the bass clef line. In his *Online Jazz Bass School* Patitucci encourages the student to "get friendly" with the drum set (as with the piano to understand better harmonies). The exercise in Figure 132 is the application on drums of the Abakuá "clave" over the typical swing feel cymbal. Patitucci states that these rhythms and the syncopation created, can help to develop a better sense of swing as both jazz and Afro-Cuban music are part of a common heritage.

Defining *swing* is a difficult task, however as stated by Coker (2010) it is a combination of two things: rhythmic interpretation and rhythmic unity. Rhythmic unity means that all the members of one group (jazz ensemble, trio, quartet etc.) play with the same concept of the pulse; playing in ensemble can increase this unity. Rhythmic interpretation could be learned through the study of rhythm, articulation and accents. Rhythm, articulation and accents as explained by Coker (2010) were applied to Patitucci's phrase in Figure 133 in order to show how it is possible to swing one of the most used rhythm in jazz: the eighteenth note. Notice that normally jazz phrases or melodies are written using the common eighteenth note subdivision (as in the first bar of Figure 133); the player will subdivide automatically in triplets (as shown in the second bar of Figure 133).

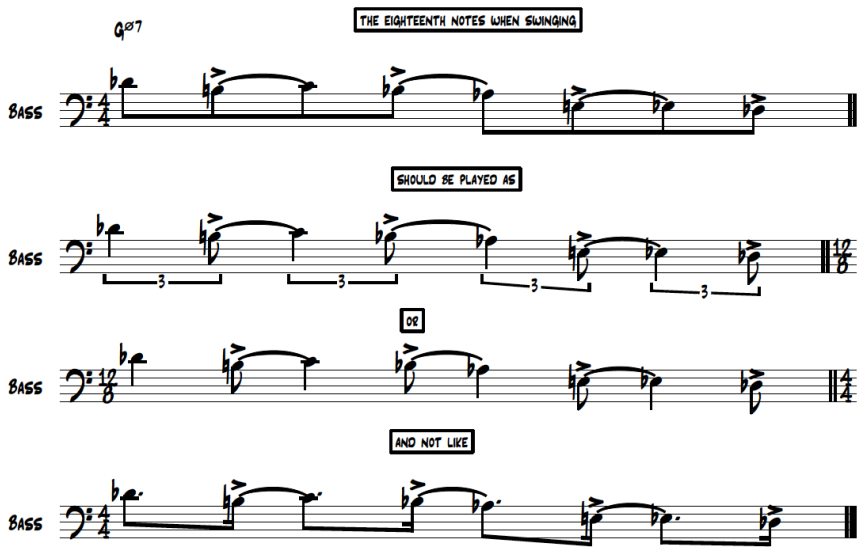


**Figure 133: Example of how swing phrases are written and how should be played (Coker, 2010) using John Patitucci's phrase from his solo on "Moanin'", bar 23, from Eldar Djangirov's recording *Eldar* (Appendix F).**

Swing is a very difficult concept to interiorize yet it is one of the most important ingredients in jazz music. The subdivision of the beat in three parts is the first step to achieve a good rhythmic interpretation of the eighteenth note pattern. Most of the jazz music phrases, especially when played with horns, are played in "legato" but the soloists have the tendency to accent the upbeat and slurring into the downbeat (as shown in Figure 133). There are many variations about rhythmic interpretation, depending also about which instrument the soloist plays. In stringed instrument as the electric and the double bass the articulation is strictly related with string crossing. However rhythmic interpretation, articulation and accents are prevalent in swinging improvisation (Coker, 2010).

### 6.4.5 Triads combining (intervalic improvisation) and others improvisation devices

One of the most interesting and modern improvisational techniques that Patitucci uses is the "triad combining"[133]. This is a technique that is largely used by horn, piano and guitar players but, according to Patitucci (2015), very poorly used by bass players[134]. As an example a pianist can play a three octaves arpeggio with a simple span of his hand; the same three octaves arpeggio is technically very demanding, especially for a double bass player. Arpeggios are especially difficult due to the shifts that could create problems of intonation. For novice bassists the use of diatonic intervals is normally safer then arpeggios, this is the main reason because they prefer to improvise in a scalar way. Generally speaking when jazz players learn to "play on changes" they learn linear improvisation (Weiskopf, 1995).

Patitucci edited a pioneer book about the application of this technique on double bass: *Melodic Arpeggios and Triad Combining for Bass* (2011)[135]. The book has exercises that are very helpful about shifting, working on intonation and left hand articulation in all keys. The exercises are built first of all to prepare the player to a great amount of shift

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133 Jerry Bergonzi calls the triad combining "Hexatonics". Hexatonic scales are six notes scales. One way to create a hexatonic scale is to combine the notes of two triads that don't have any common tones. These six scales are valuable and effective tool for improvising, for creating voicing, and for composing (Bergonzi, 2006). Walt Weiskopf calls triad combining "Triad Pairs" (Weiskopf, 1995).

134 Nowadays there are good examples of bassists (both electric and double bassists) that use triad combining in their improvisation. Listening to legendary bassists as Dave Holland and Eddie Gomez the use of triads combining could be found in their soloing. Electric bass player Janek Gwizdala has preparatory exercises in his book *All the Good Stuff: How I Practice* (2014), exploring triad combining field. However it is still a quite unexplored land by bassists' community.

135 This should be the first of various books that Patitucci will release about this specific matter (Patitucci, 2013).

when playing arpeggios, working then on string crossing exercises, arpeggios and finally triad combining (Figure 134).

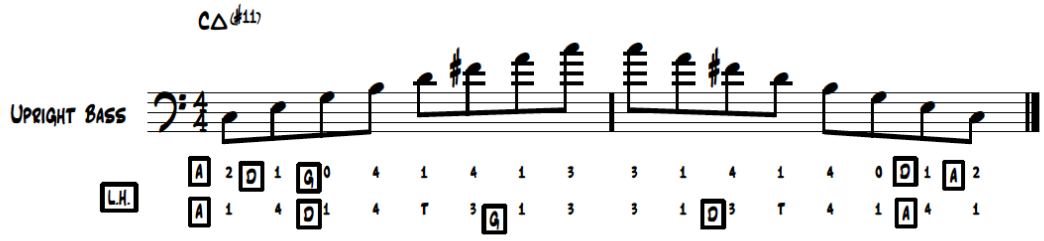


**Figure 134: John Patitucci's triad pairs introductory exercises using C triad, D triad and Em triad from *Melodic Arpeggios and Triad Combining for Bass* (author's transcription).**

As reported by Patitucci (2014): "When the improviser thinks like a composer he uses the chords inversions as "voice leading" to flow between chords connecting them smoothly, otherwise it doesn't sound like "Trane" (John Coltrane)". Patitucci developed his improvisational skills using triad combining for long time; he wanted to sound as a tenor player, and additionally playing triads did not let him use licks or others familiar patterns. Patitucci (2014) showed me some triad pairs exercises that are not part of any book published until now. I transcribed them suggesting some fingering for the double bass, the 6 string and the 4 strings electric basses. Patitucci wrote the exercises in progressions of ascending fourth but using a different phrase for every key; he thinks in fact that does not make sense to play the same "licks" in every key. I transcribed the first two progressions as example (Figure 135). In this example it is possible to notice that the use of triads (and in some case major 7th chords) and inversions give to the phrase a "vertical" motion. Of course the wise mixture of triad combining, diatonic and chromatic notes and rhythmic variety could create a more interesting improvisation.

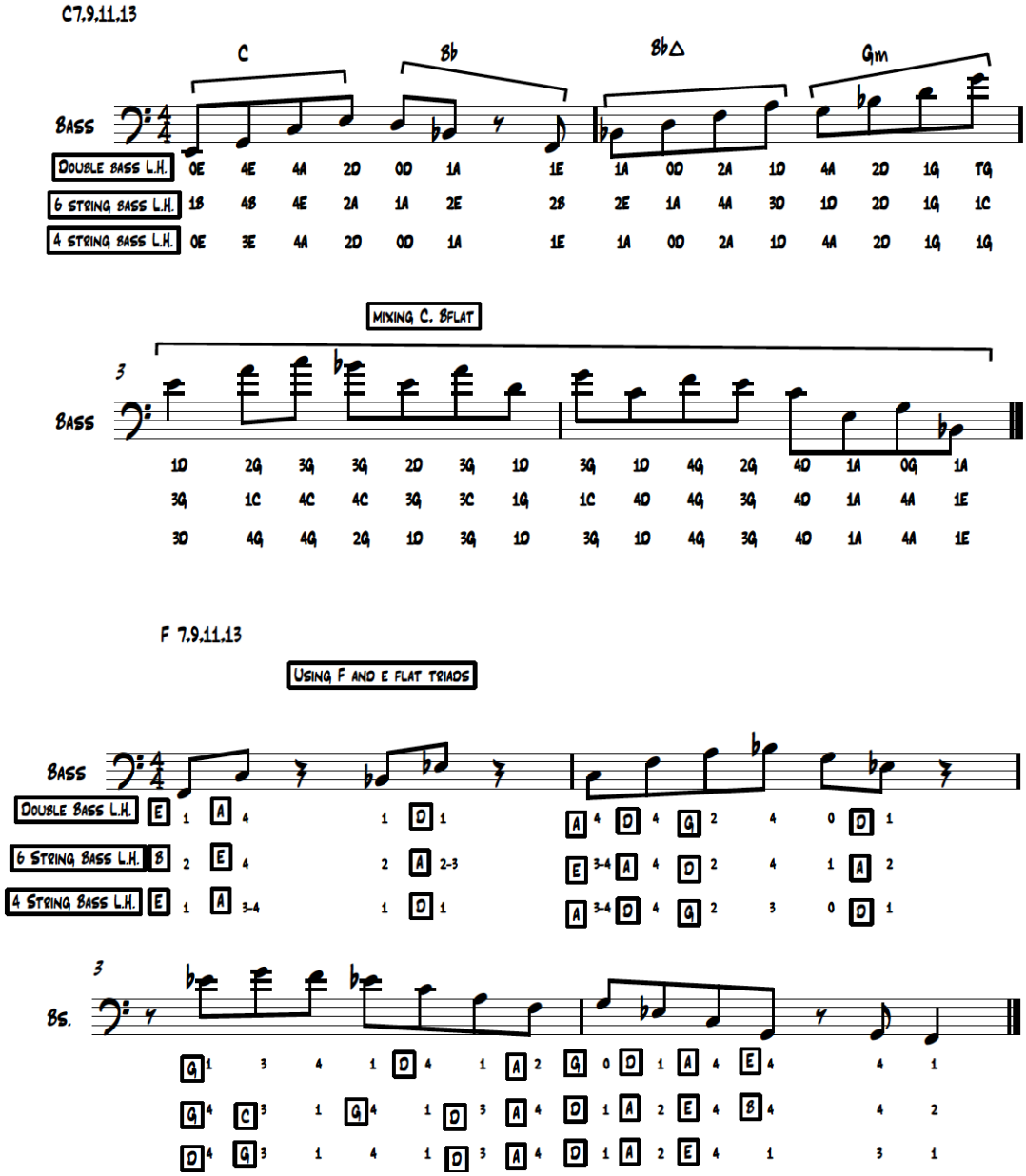


**Figure 135: John Patitucci triads combining; C and F dominant 7th with added 9,11,13. Suggested fingering for double bass, 6 and 4 strings electric bass from author's archives.**

In Figure 136 it is possible to detect a combination of C triad and BbΔ arpeggio in a "Coltrane" style. The fingerings for both hands are exactly the ones Patitucci's used in our last meeting that I video recorded.

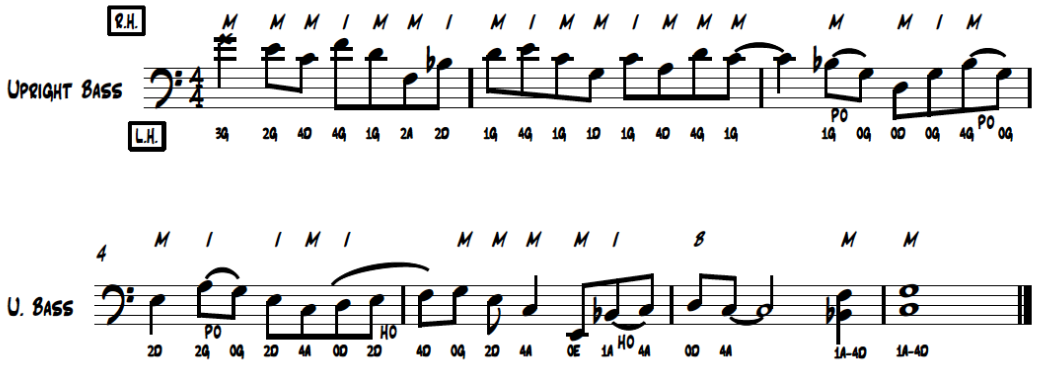


**Figure 136: John Patitucci phrase over C triad and BbΔ arpeggio Coltrane style (author's transcription).**

Notice that "po" means pull-off and "ho" hammer-on these are legato effect that should be done with the left hand[136]. This kind of triad combination (C triad and Bb triad) could be used over several chords as BbΔ, Bb7, AbΔ#5, C7sus, Gm7, E7 altered, DØ natural 9, EØ, FΔsus4 and FmΔ (Bergonzi, 2006).

Triadic approach in "standards" structures depends on the number of chords per each bar and the tempo. The application of this technique it will be normally more effective in static harmonies or at least when there is only one chord for bar. In fact when there are frequent chord changes it is easier to think in a linear way especially for soloist that are not familiar with triad combining.

As example of how Patitucci approaches a standard tune I asked him the best way to approach the first chords of Victor Young's song *Beautiful Love*, showing the way he would improvise on the first ii-V-I progression of this standard tune (Patitucci, 2014). In this chord progression, Patitucci uses several combinations of triads, arpeggios and scales. However, the most common choices for him in the EØ chord are the G ascending melodic minor as scale, BbΔ arpeggio/C triad (as a fact the phrase on Figure 136 will work perfectly), Gm triad/D triad and even C triad/D triad. For the A7b9 he suggests using the

136 Two adjacent notes on the same string can be played with one pluck of the finger using a hammer-on or a pull-off (Friedland, 1996).

Bb ascending melodic minor if thinking about the dominant chord as A7 altered. When thinking in triads, the most interesting sounding triad combination for him to use on A7 altered is Eb triad/F triad. Approaching the V chord of the progression as a 7/b9/#9/#11/13 chord it is possible utilize the diminished scale (in H/W tone version); however, it will sound as a scale and in order to avoid that it is possible to use what I call the "major/minor" triad combining[137], one of Patitucci's favorite choices (Patitucci, n.d.).

This is the kind of sound that Coltrane used and that Patitucci learned with all the great artists with whom he played with as Chick Corea and Wayne Shorter. Closing with the Dm chord it is possible to use F triad/G triad; if the sound of the major 7th is wanted could be played F triad/G triad/A triad together or only the G triad/A triad.

Finally, I will refer to a couple of other improvisational devices that I came across with after analyzing Patitucci's playing: the In-sen scale and the melodic minor scale thinking pattern.

Inspired by John Coltrane and McCoy Tyner playing, Patitucci developed over the years the use of exotic scales such as the In-sen scale[138].

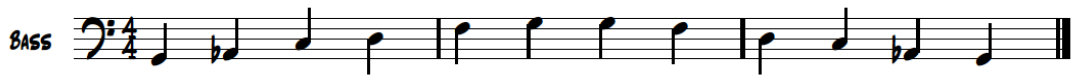


**Figure 137: G In-sen scale.**

The In-sen scale is a five-note Japanese traditional scale that could be used over a Phrygian chord, in the case of the scale in Figure 137 will be G7b9sus4. The same In Sen scale could be used over Abmaj7#11 and Fm6 and Fm.

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137 A half tone/whole tone A diminished scale (also known as inverted diminished scale) is composed by 8 triads: A/Am, C/Cm, Eb/Ebm and F#/F#m; the result combining all these triads, it will not sound as a scale anymore.

138 More correctly, the In-sen is a tuning the Koto (a Japanese stringed instrument), rather then a scale (Levine, 2011). Other authors as Ligon call this scale as Kumoi pentatonic scale (Ligon, 1999)

To better explain the application of this scale I will use an excerpt of Patitucci's solo on Moanin'[139], here (Figure 138) he utilizes a combination between the G In-sen scale and the F minor blues scale; Fm is the main key center.

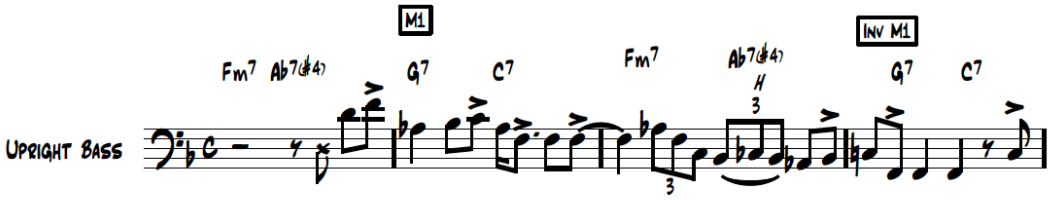


**Figure 138: excerpt of John Patitucci's solo on "Moanin'", first four bars, from Eldar Djangirov's recording *Eldar* (author's transcription, Appendix F).**

The last example in Figure 139 is taken from the same Patitucci's solo from bar 23 until the first two tempos of bar 26 (between the end of the B part and the beginning of the last A). This example illustrates clearly how melodic minor scale works in a minor ii-V-I context.

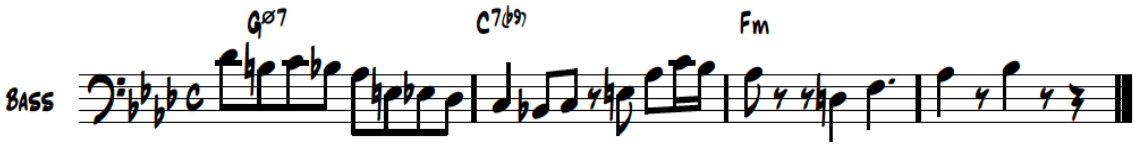


**Figure 139: excerpt from John Patitucci's solo on "Moanin'," lick for ii-V alt.-ImΔ progression from Eldar Djangirov's recording *Eldar* (author's transcription, Appendix F).**

About the use of the melodic minor scale, Patitucci does not think super locrian or altered mode[140]. Instead he uses the "mother scale" where this mode derives from (Patitucci, 1993). In this particular case, Patitucci thinks in Db melodic minor

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139 From Eldar Djangirov's recording *Eldar* (2005).

140 Super locrian scale, also known as altered scale, is the seventh mode constructed over the melodic minor scale. This scale is especially useful to improvise over a b9/#9/#11/b13 dominant chord.

assuming (or superimposing[141]) for the first two bars the C7 altered as main chord. The only exception on the use of diatonic notes that belongs to Db melodic minor scale is the B natural in the up beat of the first tempo; this B natural is a chromatic approach to C (chord tone) also known as enclosure (Baker, 1987).

### 6.4.6 About John Patitucci's Style

In terms of left and right hand techniques it is possible to affirm that John Patitucci employs on electric bass some left hand techniques typically used in double bass playing (especially in the lower part of the fingerboard) allied to the four-finger system. When playing double bass he uses almost the French/German left hand fingering. When talking about right hand, he combines some double bass techniques (as the "big finger") with an alternating two finger technique (using raking and his "hybrid" rest stroke) in both instruments.

It is also clear in this chapter how John Patitucci combines elements of the jazz tradition as linear improvisation, ornamentation and articulation with modern improvisational devices such as the triad combining, superimposition and exotic scales applied to the double and electric bass. John Patitucci is always been interested in any kind of rhythms and diverse musical genres. On each of his records it is possible to listen to the result of all this musical influences so diverse, modern and traditional at the same time. This combination of influences creates Patitucci's unique personal style.

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[141] Superimposition is the addition of intervals of third above a seventh chord, adding color and a thicker texture to the seventh chord without changing his function. However could also involve polychordalism, which is the simultaneous playing two or more different chords (Coker, 2010).

# Chapter 7

# 7 Developing exercises for teaching and learning the electric and double bass

This last chapter resumes all the researches of this dissertation. The creation of specific exercises with the purpose of teaching both instruments to the same student is the ultimate goal. However some of these exercises could be played by a student that play only the electric bass or only the double bass in order to let them know new left and/or right hand techniques. Several of these exercises could be played in both instruments.

The examples here presented are excerpts from John Patitucci's solos or bass lines transcriptions[142]; I used these transcriptions with Patitucci's original fingerings as starting point.

As seen in chapter 6 Patitucci utilizes quite historically solid left/right hand techniques in both electric and double bass. However he developed some personal "features" as his "hybrid" right hand rest stroke on electric bass and the "middle/pinky anchor"[143]. He masters all these techniques becoming an example of virtuosity; allied to this Patitucci fully absorbed the jazz tradition, applying this heritage to his playing. This is the reason I used John Patitucci as a model of double bass/electric bass player. My idea is to use Patitucci's outstanding jazz language and vocabulary as example to develop some creative exercises to teach and learn playing electric and double bass. First of all when Patitucci played one bass line or phrase with one instrument, I tried to understand the way he could play the same line on the other instrument. In order to do that I used the

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[142] I transcribed solos and bass lines played by John Patitucci on the six string electric bass and on the double bass.

[143] This is my definition to explain how Patitucci mute the strings with the right hand.

analyses done on chapter 6 where I referred some of Patitucci playing habits. After this step I applied to his solos and bass lines excerpts, some of the left/right hands techniques discussed and evaluated in this dissertation. The employment of these new techniques is the next step in my investigation trying to push further technical development in both instruments.

In a first stage the student should study Patitucci's phrasing, articulation and his right/left hand fingerings on electric and double bass as example; once learned a phrase or bass line in both instruments should apply a different left or right hand technique. The benefits in this case are multiple, one of them is that applying different left hand techniques will increase the knowledge of the fingerboard; different choices will increase exponentially possibilities. The same will happen when using a new right hand technique: increasing the number of the fingers will open new possibility in phrasing fluidity, string crossing and rhythmic richness. Of course the role of the teacher is crucial, understanding which fingerings best suite student's needs.

Executing some of these exercises will focus the student on specific topics: phrasing, articulation and ornamentation (some of Patitucci's best features), rhythmic accuracy, left/right hand coordination and consciousness (about fingerings that best serve musical purposes). After this process the student will start to create his own exercises with several different left/right hand combinations; from this point on the possibilities are endless.

In order to introduce the student to some of these new techniques before apply them to Patitucci's lines, I wrote few example as preparatory exercises. These exercises tend to separate left hand and right hand tasks in order to focus on one issue at the time. For right hand techniques I suggest to apply a plucking technique over a major or minor scale or a scale fragment before apply it to a more elaborated left hand phrase. For

interiorize a left hand technique it will be wise to work on a difficult left hand passage using a familiar right hand plucking technique (or just playing the phrase with the left hand with no right hand at first).

Especially important at this stage is the left hand fingering/shift planning, finding different solutions that serve the phrase articulations and ornamentations. After completing this step it will be easier to combine the two hands techniques. The goal is to have multiple fingering choices, knowing which solution best fit in a particular situation. All these first right hand preparatory exercises can be played on electric and double bass.

## 7.1 Right Hand: Plucking Preparatory Exercises

I developed these exercises applying different right hand techniques[144] over a simple E major scale in one octave; all these right hand techniques were discussed in the previous chapters, yet this is my first approach to a practical application of these concepts to a simple scale. I wrote multiple right hand techniques over one exercise; I suggest learning and applying one technique at the time. After the new technique is interiorize it will be possible to go over another one.

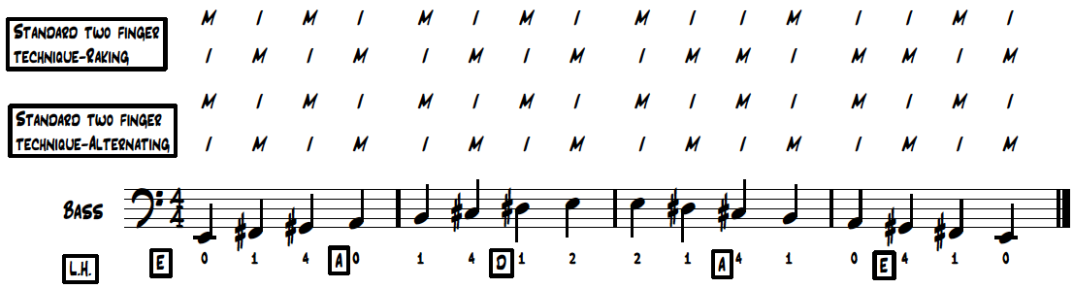


**Figure 140: Two finger technique combinations over one octave E major scale (developed by the author).**

144 Discussed in chapters 4 and 5.

The exercise in Figure 140 uses a regular two finger right hand technique[145]. The standard two finger alternating technique could start with the index or the middle finger. When utilizing this technique there are no "rakings" and the two fingers are used alternately both ascending and descending. As seen in chapter 4 using the standard two finger "raking" technique, the player alternates the two fingers in the ascending form and "rake" using the same finger to play passages while descending between adjacent strings (Van de Geyn, 2007)[146].

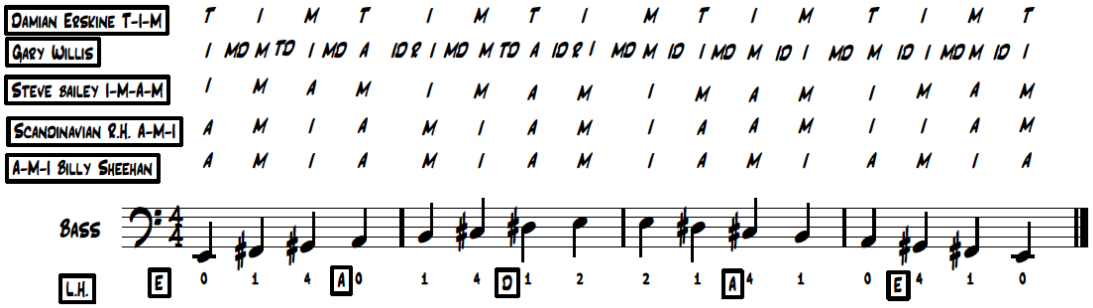


**Figure 141: Three finger right hand techniques combinations over one octave E major scale (developed by the author).**

In Figures 141 and 142 I wrote three and four finger right hand techniques, which are more complex to execute[147].

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145 Alternating right hand index and middle finger is a common technique used by the majority of double bass and electric bass player as seen in chapters 4,5 and 6.

146 The two finger right hand technique with raking is the one Patitucci uses most, especially when soloing. This has to be reminded when trying to adapt his right hand technique to our personal "licks", patterns or bass lines.

147 All of these techniques were analyzed in chapter 4 and 5. The names in the left side of the fingerings are related to the players that improved/developed these techniques.

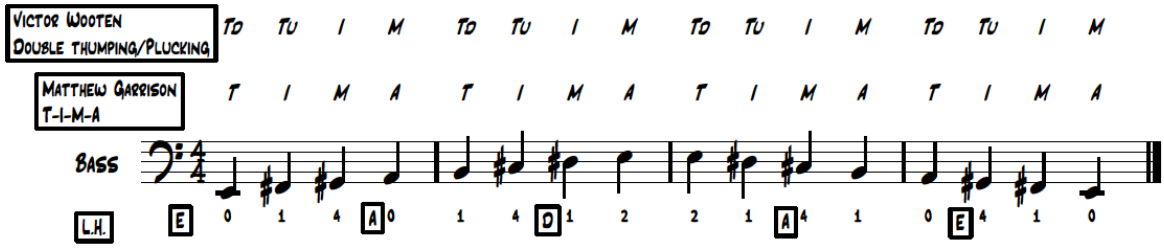


**Figure 142: Four finger right hand techniques combinations over one octave E major scale (developed by the author).**

## 7.2 Developing right hand exercises over walking bass lines

The next step is the application of different right hand techniques over a walking bass line, using John Patitucci's lines and fingerings as starting point. Figure 143 shows the first four bars of a rhythm changes as played and fingered by John Patitucci on double bass[148]. Again the first thing that student should learn is how to play this line using Patitucci's fingering as example.

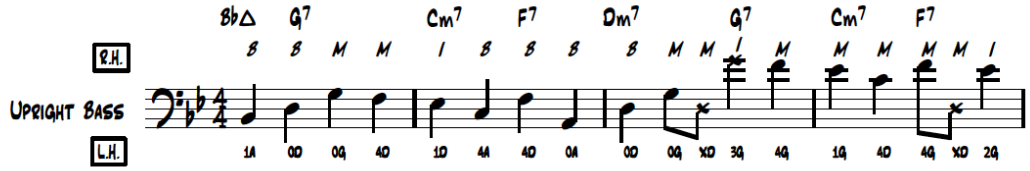


**Figure 143: Patitucci's walking line over rhythm changes (bars 1 to 4 first chorus) using the double bass; original fingering (Appendix C).**

Walking bass lines are normally composed of quarter notes. As explained in chapter 4 in order to create an effective walking bass line (on double bass) the movement should come from the whole right arm, starting from the shoulder to the fingers; this movement is accomplished on the electric bass using only the right hand fingers motion.

148 http://artistworks.com/lesson/8730

The example in Figure 143 is played by John Patitucci on double bass; after analyzing his playing in chapter 6, I can postulate that he would play the same walking bass line on the electric bass using almost the same left and right hand fingering.

After playing the walking bass line on the two instruments (electric and double bass) trying to maintain Patitucci's fingering and articulations it is time to try different right hand fingering in order to apply them to the example in Figure 143.

For the novice jazz double or electric bass players the first step to play walking bass lines is to start using only one right hand finger (could be the index finger or the middle finger or with both index and middle finger together). In fact as it is possible to see Figure 143 Patitucci uses almost one finger at the time[149]. To shed light on this matter, I developed the exercise in Figure 144, writing right hand fingering (using only the index, then the middle or both index and middle finger together) as preparatory exercises; then I adapted the original Patitucci's double bass left hand fingering to the four string and six string electric bass. The idea is to try to get a fluid and homogeneous sound.

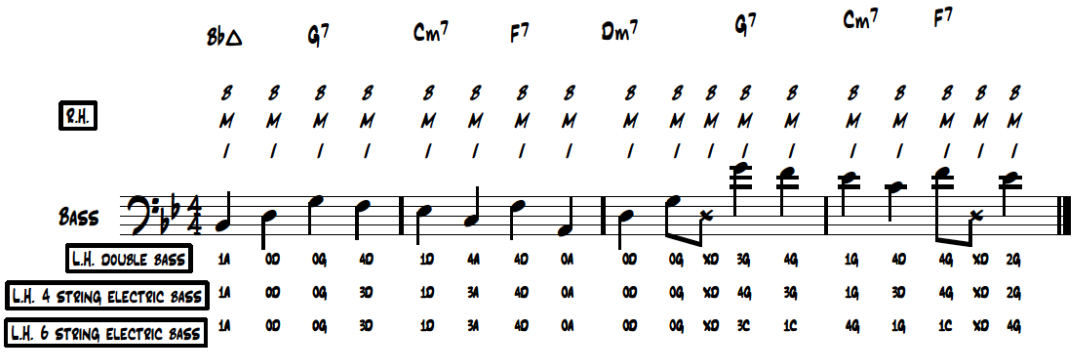


**Figure 144: Patitucci's walking line over rhythm changes using right hand index or middle or index and middle finger together; left hand fingering for double bass, 4 and 6 string electric bass (author adaptation, Appendix C).**

[149] Considering that he plays almost with his middle finger and that "B" means index and middle finger together it is possible to assume that he does not alternate index and middle so much, using his index finger alone only two times in four bars.

When tempo speed up the use of two or more right hand fingers could be useful[150]. In this case I create an exercise over the same Patitucci's line but applying two finger right hand technique, alternating always index and middle (or middle and index) finger and alternating ascending, using then the raking technique descending (Figure 145).

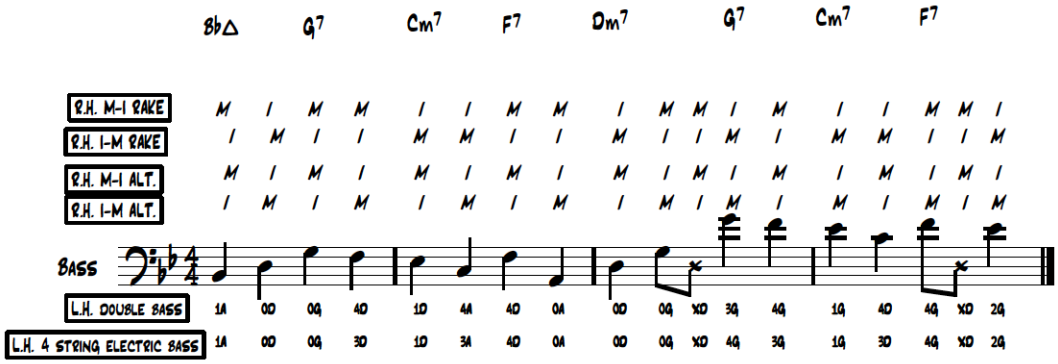


**Figure 145: Patitucci's walking line over rhythm changes using right hand index and middle finger alternating/raking or middle and index finger alternating/raking; left hand fingering for double bass and 4 string electric bass (author adaptation, Appendix C).**

The right hand fingering for the 6 string electric bass is a bit different due to the use of the C string; this is the reason why I wrote a separate example. Notice that in Figure 146 when there is a string jump between the two notes played (as in the fourth bar, third tempo) the raking is not applicable as it was in Figure 145.

[150] Notice that it is very important that the sound produced with different fingers has to be uniform; virtually no difference has to be heard in terms of sound production. This goal could be achieved with good calluses fingers.

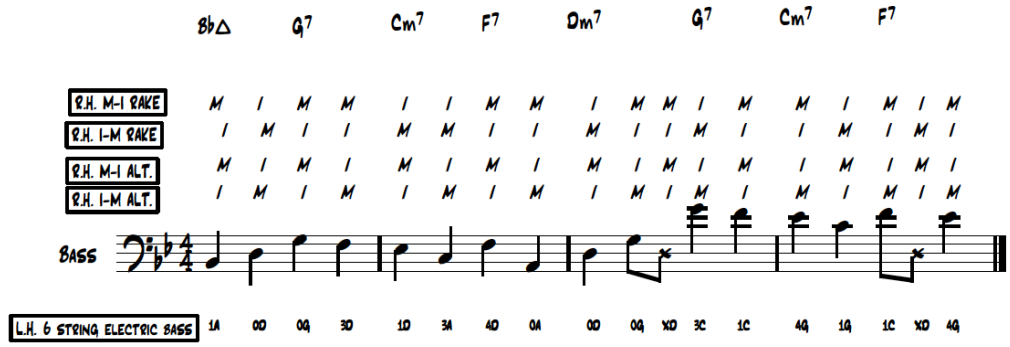


**Figure 146: Patitucci's walking line over rhythm changes using right hand index and middle finger alternating/raking or middle and index finger alternating/raking; left hand fingering for 6 string electric bass (author adaptation, Appendix C).**

In the same way I elaborated an exercise applying three and four right hand fingers techniques to execute Patitucci's original walking bass line (Figure 147). I noticed however that in both electric and double bass it is necessary to find a way to mute with the right hand the open strings in order to avoid unwanted rings (the open strings have a natural tendency to ring)[151].

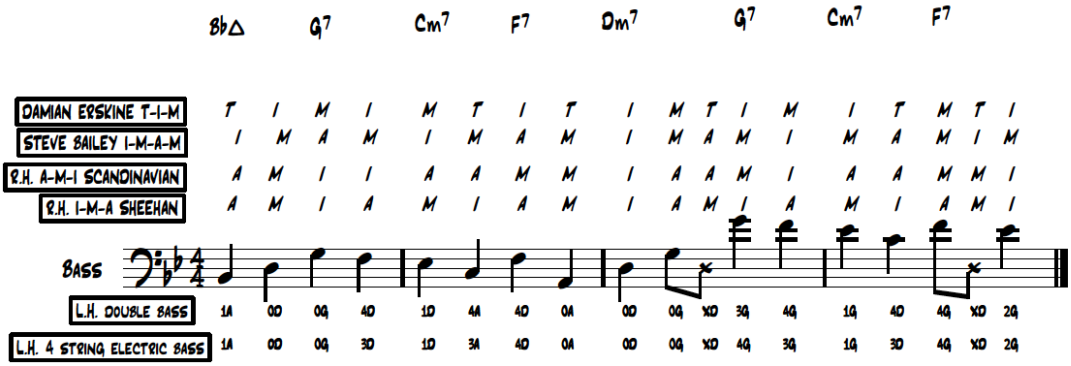


**Figure 147: Patitucci's walking line over rhythm changes using right hand three and four finger techniques; left hand fingering for double bass and 4 string electric bass (author adaptation, Appendix C).**

151 As explained in chapters 4 and 5 there are various techniques to do that as the floating thumb (Nitti, n.d.) on the electric bass. On the double bass, the left hand has to be used to mute the string above when playing on two adjacent strings. When two strings are not adjacent on double bass as are the G and A, the A string should be muted with the inside part of the right hand index finger (Pedersen, 2009).

Also in this case I wrote another exercise for the six string electric bass (Figure 148). Notice that right hand plucking fingering sequence varies only when using raking techniques. When strictly alternate right hand fingers (using one, two, three, four or five fingers) the sequence will be always the same as shown in Figures 147 and 148.

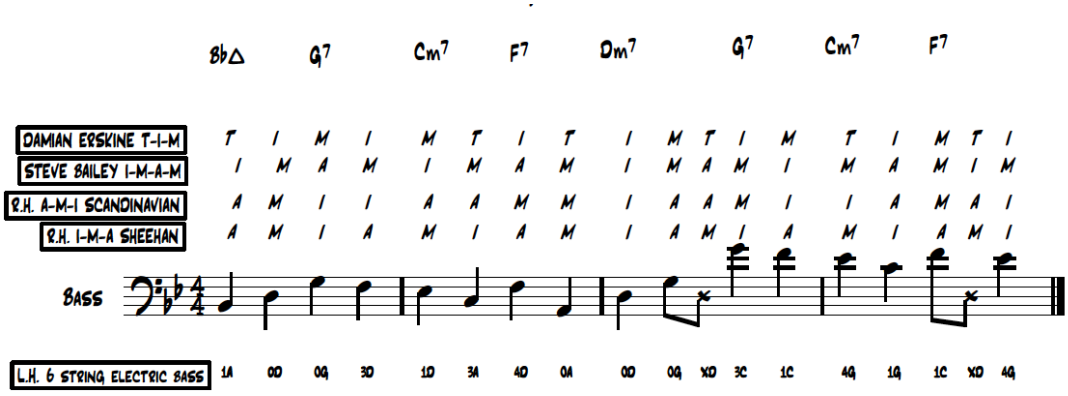


**Figure 148: Patitucci's walking line over rhythm changes using right hand three and four finger techniques; left hand fingering for 6 string electric bass (author adaptation, Appendix C).**

### 7.2.1 Some considerations about the use of different right hand techniques on Patitucci's lines

Taking as reference the statement that on both instruments the same right hand technique could be used, it is possible to postulate the application of a three and even four right hand finger technique to the electric and double bass.

As an example, Pedersen's right hand technique can apply to both instruments without major problems. This technique is explained and organized very clearly in his *Scandinavian Double Bass Technique- Right Hand I* (2009); this is an advantage about a practical and more immediate application of his fingering system.

Patitucci's lines can easily be adapted to be played using three-finger right hand technique maintaining Patitucci's main characteristics, unaltered.

Regarding the four finger right hand technique, I remind that its application on double bass creates some problems; the high action of the strings and the consequent

impossibility to play an effective free stroke technique present great obstacles for the implementation of the four finger right hand technique[152]. It is also difficult to move the right hand toward the bridge without drastically varying the angle of the wrist, generating other postural problems.

However generally speaking, any right hand technique can be adjusted and applied to both instruments.

## 7.3 Left Hand Fingering: Finding Different Solutions

It is important planning before execute an exercise in order to be conscious about what to play and with which finger, especially when learning a new technique. I recommend writing down every fingering applied to a phrase, scale or bass line.

The next excerpt that I transcribed (Figure 149) is part of John Patitucci's solo over a rhythm changes but this time played with his six string electric bass[153].

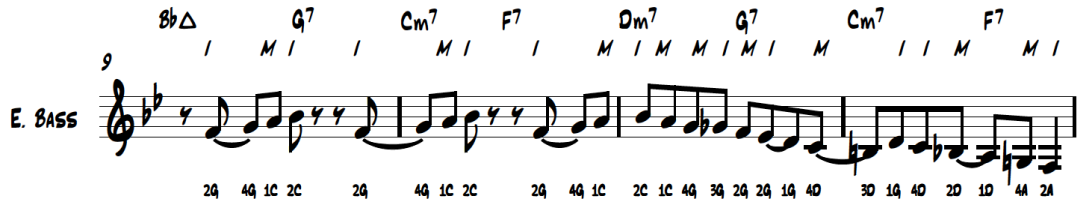


**Figure 149: Patitucci's solo (bars 9 to 12 second chorus) over rhythm changes using the six string electric bass; original fingerings (Appendix B).**

In order to use this example on four string bass and double bass I will transpose the phrase one octave lower[154].

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152 On electric bass the use of the free stroke is normally reached with the aid of a ramp as seen in chapter 5; an option could be the creation of a kind of ramp for the double bass, located between the end of the fingerboard and the bridge.

153 http://artistworks.com/lesson/81497. These are high quality videos that permitted me to transcribe carefully both hands fingerings.

154 This phrase could be played on double bass using the thumb position but in this case the comparison between electric and double bass left hand fingering would be different. My best option was to transpose one octave lower the

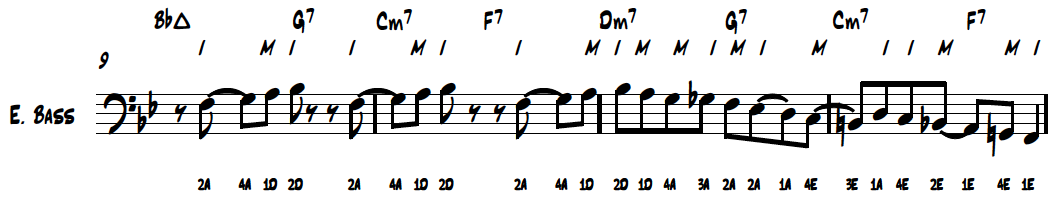


**Figure 150: Patitucci's solo (bars 9 to 12 second chorus) over rhythm changes using the six string electric bass; original fingerings, one octave lower (author adaptation for four string electric bass).**

Once learned the phrase with Patitucci's articulation and fingering it will be possible to adapt this phrase to the double bass. I wrote some suggested left hand fingering using some different techniques[155]. It is interesting to note that the same fingering used by Patitucci in Figure 150 could be played on double bass using Wolf's fingering.

Patitucci would play this phrase on double bass using the classic Simandl/Nanny fingering as shown in the first fingering in Figure 151.

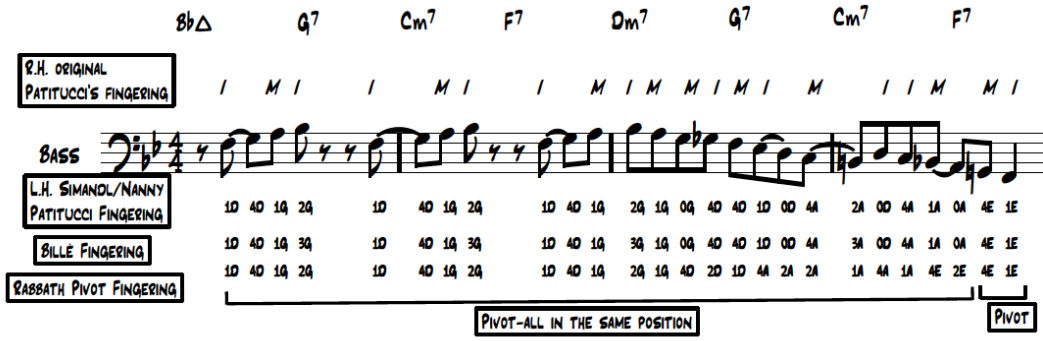


**Figure 151: Patitucci's solo (bars 9 to 12 second chorus) over rhythm changes, adapted to double bass; using German/French, Italian and Rabbath left hand fingering for double bass (author adaptation).**

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phrase been possible to play it with a regular four string bass using almost the same Patitucci's original left hand fingering (only the strings where the phrase is played is different and the last two notes of the lick).

155 These techniques were analyzed in chapter 2. The names in the left side of the fingerings are related to the players that improved/developed these techniques.

In Figure 151 it is possible to compare different left hand techniques. Simandl and Billè's fingerings differ only for the use of one finger (1-2-4 vs. 1-3-4 as seen in chapter 2). The application of Rabbath's pivot technique (1977) and the less shifting that promotes, alter more drastically the fingering configuration.

The next excerpt that I transcribed, adapted and developed as exercises is part of John Patitucci's solo over his tune *Monk/Trane*[156]. This tune has the same harmonic progression as John Coltrane's *Giant Steps*[157]. I extracted a "lick" played over a II-V-I progression in the key of Eb major[158].

In this case I did not have a video as reference to transcribe the exact fingerings used by Patitucci but at this point I could guess his left/right hand fingerings using the information investigated in chapter 6 (Figure 152).

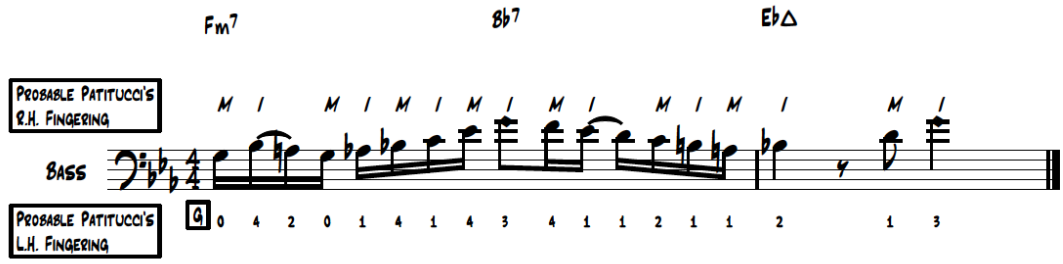


**Figure 152: Patitucci's solo over II-V-I progression (Appendix G); probable original left and right hand fingering for double bass; from the tune Monk/Trane bars 40 and 41 (Patitucci, 2009).**

156 From Patitucci's recording Remembrance (Patitucci, 2009).

157 Patitucci plays his solo on double bass.

158 To understand the mechanism of Patitucci's playing and to better apply all the fingerings I suggest that every exercise and phrase for the left hand should be played in all the twelve keys using all the octave divisions: twelve (half tones), 6*2 (tones) 4*3 (minor third), 3*4 (major third), 2*6 (tritone) and through the circle of ascending fourths. I think that learning and transposing a lick is useful for the students in order to explore the fingerboard, in both electric and double bass.

Once the original Patitucci's fingerings have been interiorized it will be possible to explore others left hand fingerings using the same process used in Figure 151 (keeping however the right hand fingering as the original). It is possible to postulate (Figure 153) that Patitucci would use the German/French system. The Billè's fingering it is useful for students that prefer to play with the Italian system, as the Rabbath's fingering promote less shifting and could be a good option instead of the traditional Simandl fingering.

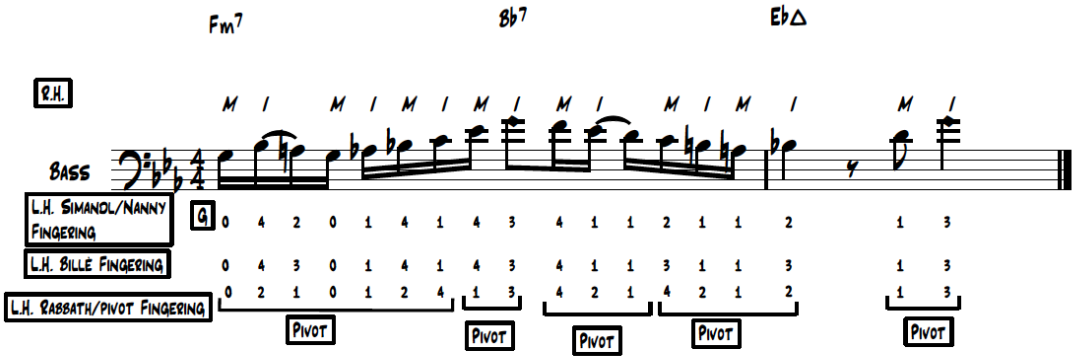


**Figure 153: Patitucci's solo over II-V-I progression using German/French, Italian and Rabbath left hand fingering for double bass; from the tune Monk/Trane bars 40 and 41.**

Now transposing the same pattern on the six string electric bass as Patitucci would play, the result should be similar to the fingerings (of both left and right hand) shown in this example (Figure 154).

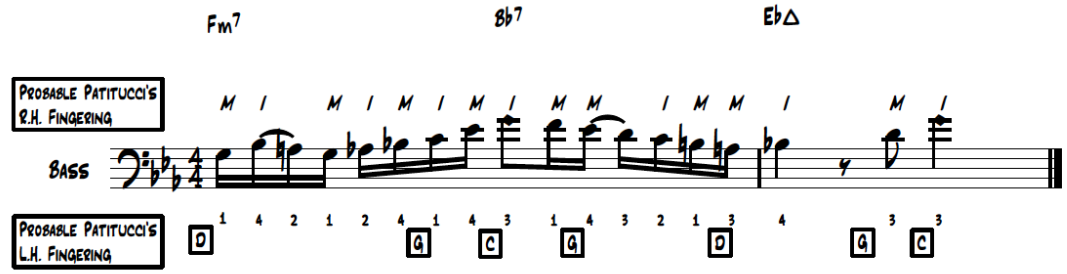


**Figure 154: Patitucci's solo over II-V-I progression probable fingering for six string electric bass; from the tune Monk/Trane bars 40 and 41.**

On the electric bass it is almost possible to play a lick in different keys using the same fingering, changing only the left hand position; this is possible because of the "geometrical symmetry" of fretted instruments, exploiting universal fingering (Friedland, 1996) or the Willis' 4+2 area (Willis, 1997), as seen in chapter 5.

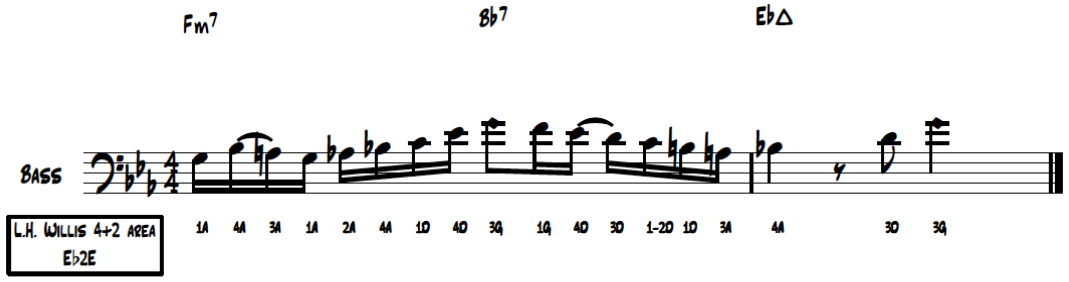


**Figure 155: Patitucci's solo over II-V-I progression using Gary Willis' left hand fingering for 4-5 or 6 string electric basses; from the tune Monk/Trane bars 40 and 41.**

While playing on the electric bass, the use of a more static geometrical hand position with string crossing is a normal task. Applying Gary Willis' 4+2 left hand fingering on Patitucci's phrase the result will be the one displayed in Figure 155. Notice that the use of the same fingering on double bass is unusual, first of all because this specific left hand position is between the crook of the neck and the thumb position. However it is possible to play the complete Patitucci's lick in thumb position using Michael Wolf's tetrachord fingerings (2011) as in Figure 156.

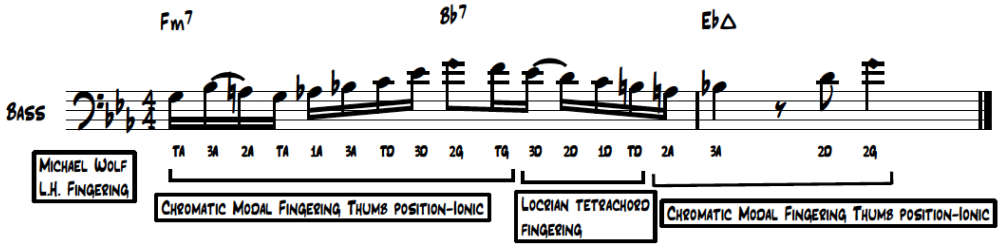


**Figure 156: Patitucci's solo over II-V-I progression using Michael Wolf's left hand fingering in thumb position on double bass; from the tune Monk/Trane bars 40 and 41.**

Another way to play this "pattern" on double bass exploring Wolf/four finger technique could be using the solution shown in Figure 157.

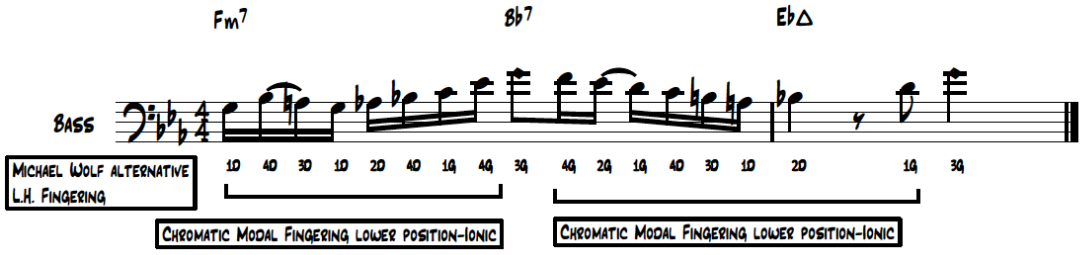


**Figure 157: Patitucci's solo over II-V-I progression using Michael Wolf's alternative left hand fingering in on double bass; from the tune Monk/Trane bars 40 and 41.**

The example above could also be played on electric bass too using exactly the same left hand fingering.

This fact reveals and proves that it is possible to use the same left hand fingering to play the same phrase on both instruments maintaining unaltered Patitucci's articulations.

It is important however to remind that when using the four finger technique on double bass, the chance of play out of tune (especially when at the beginning of the learning process) is very high. I think that the student has to learn a solid old school (Simandl or Billè) left hand technique before try to apply a four finger technique on double bass[159].

### 7.3.1 Some considerations about the introduction of others double bass left hand fingerings on Patitucci's lines

After internalizing the German/French fingering system, the use of other left hand techniques can be introduced. The application of these techniques, especially Rabbath's and Morton's is directly related to the knowledge of the fingerboard. Both of them permit

[159] This does not happen when using Patitucci's playing techniques because as seen before he uses distinct techniques on electric and on double bass. This is also one of the main reasons why Patitucci's playing is an example to be studied.

a better agility (in respect to the traditional three-finger left hand fingering techniques) in performing quick passages. Before applying these techniques to Patitucci's bass lines, it is necessary to carefully plan a left hand fingering; synchronizing then the chosen one with the preferred right hand technique in order to maintain and not alter Patitucci's soloing characteristics.

In chapter 2 I introduced Michael Wolf's four-finger system (2011). His modal left hand fingering in the lower position is the same kind of "universal fingering" used to finger one-octave modes on the electric bass. Advanced bassists can start playing both instruments using the exact same fingering. As before stated, intonation could be a problem; a three-finger left hand technique helps the player to become comfortable with the fingerboard scale, the distance between whole tones and half tones and shifting. After a perfect familiarization with this technique, the next step is the introduction of Wolf's four-finger system on double bass; it will be possible then to finger Patitucci's lines in the same way on electric and double bass. Of course this is not so easy to apply, because the majority of bassists are used to play the three-finger system on double bass and the four-finger left hand technique on the electric bass. Changing one's double bass technique can be difficult, especially because it will require a new adaptation, which takes some time.

Thumb position shows a major technical difference between electric and double bass.

On electric bass, there are few bassists who play with the thumb, however on double bass this is a basic requirement. Almost all the books and methods analyzed share a generic preference (with some variations) for Francesco Petracchi's thumb positions[160]. In my opinion this is the best way to learn how to play in thumb position. Wolf also uses

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160 As he refers on his *Simplified Higher Technique for Double Bass* (1980).

modal fingerings in the thumb position; this fingering can be used in fast passages across three strings.[161]

## 7.4 Left/Right Hand Coordination

After working on right hand and left hand techniques separately is now time to coordinate both hands movements. Using again John Patitucci's left/right hands fingerings as starting point I suggest in this section left and right hand techniques fingerings for the electric (6 and 4 strings) and the double bass as probably Patitucci would play. Once achieved this objective I will apply some of the left and right hand techniques in both instruments between the ones that I have analyzed in the past chapters. Nevertheless articulations, accents and ornamentations will be maintained as in the original transcriptions in order to preserve the essence of Patitucci's vocabulary.

At this point it is clear that most of the times it is not possible to have access to video recordings that allow us to do an accurate transcription of left and right hand fingerings. In these cases the main goal is to be as faithful as possible to Patitucci's articulation, accents and ornamentations. Articulation and ornamentations are directly related with the left hand fingering while accents are associated to the plucking hand. This concept is very important because give us only a limited number of left/right hand fingering choices in order to achieve exactly Patitucci's phrasing[162].

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161 Basically Wolf uses a variation of the modal lower position substituting thumb, 1st, 2nd and 3rd for the four fingers used in the lower position (2011).

162 The concept of preserve articulation, ornamentations and accents should be applied to every transcription done no matter which instrument plays the solo. Then when adapting the solo to the electric (four, five or six string) bass or to the double bass, the preservation of these parameters will generate only few left/right hand options. These few options are directly related with the fingerings options that Patitucci would use (as for example, the two finger alternating with raking on the right hand). Altering these options (using all the techniques analyzed in chapters 2,3,4 and 5) increase exponentially left/right fingering possibilities.

As main example I used the transcription of the first four bars of John Patitucci solo on *Evidence* from his 2006 recording Line by Line. The solo is played originally with a 6 string electric bass[163].

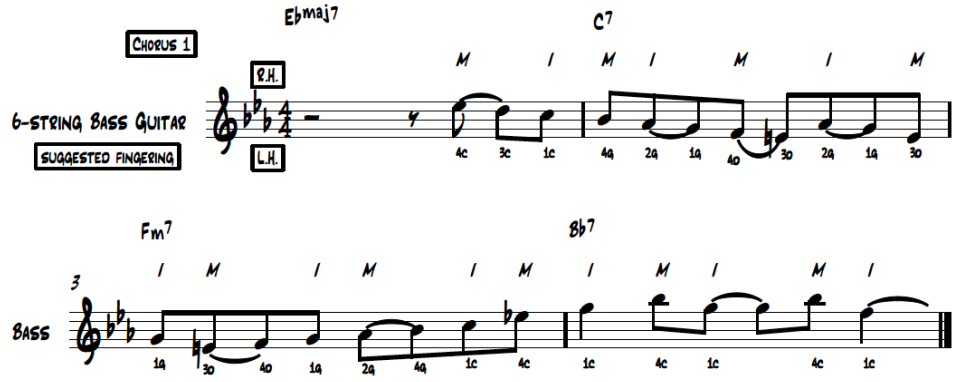


**Figure 158: Patitucci's first four bars of solo on Evidence, author's transcription and suggested fingerings for both hands (Appendix E).**

This example is based on a common **I-VI7-II-I** progression. I wrote the first right hand fingering suggestion in Figure 158 before a deep analysis of Patitucci's fingerings techniques, in an early stage of my investigation. So in this case I used the right hand technique that best worked for me, the alternate two fingers technique[164]. Yet when playing this phrase with my first guessed fingering, the result was equal to the one achieved in Patitucci's performance. This happened because I maintained the same articulation and ornamentation that Patitucci used; this means that using different techniques it is possible to achieve the same results. However during the evolution of my study I wrote a different fingering for the plucking hand that I suppose is more close to the one used by Patitucci to record his solo (Figure 159)[165].

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[163] Also in this case I did not have a video recording to confirm Patitutticci's fingering but only an audio track. In the case of *Evidence* the accents were not clearly audible because of the impressive tempo the solo was played at.

[164] That is the right hand technique I normally use while playing.

[165] As seen in chapter 6 Patitucci uses frequently the "rake" or "raking" technique, utilizing always the same finger in descending passages crossing adjacent strings; the brackets in Figure 159 point out the rakings.

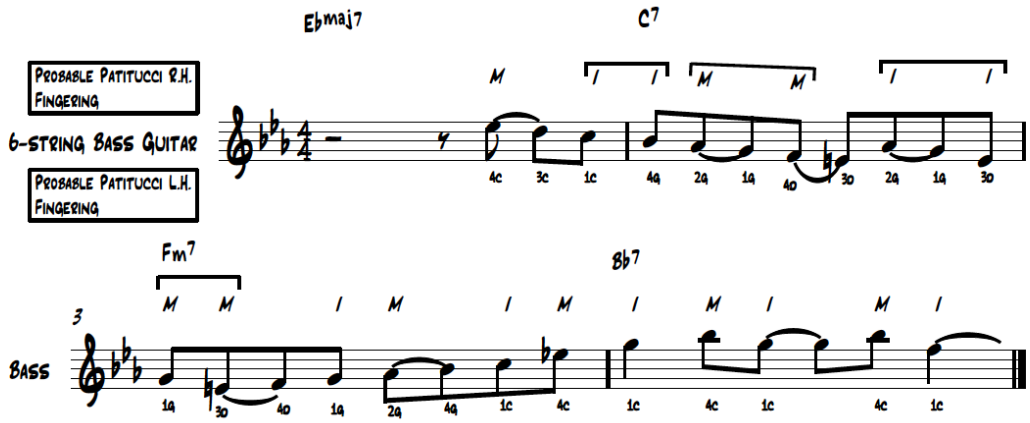


**Figure 159: Patitucci's first four bars of solo on Evidence, probable Patitucci's right hand fingering using raking (Appendix E).**

When adapting the same phrase to double bass I had the same problem encountered at the beginning of my investigation with the six string electric bass where I used the fingering that best worked for me (Figure 160).

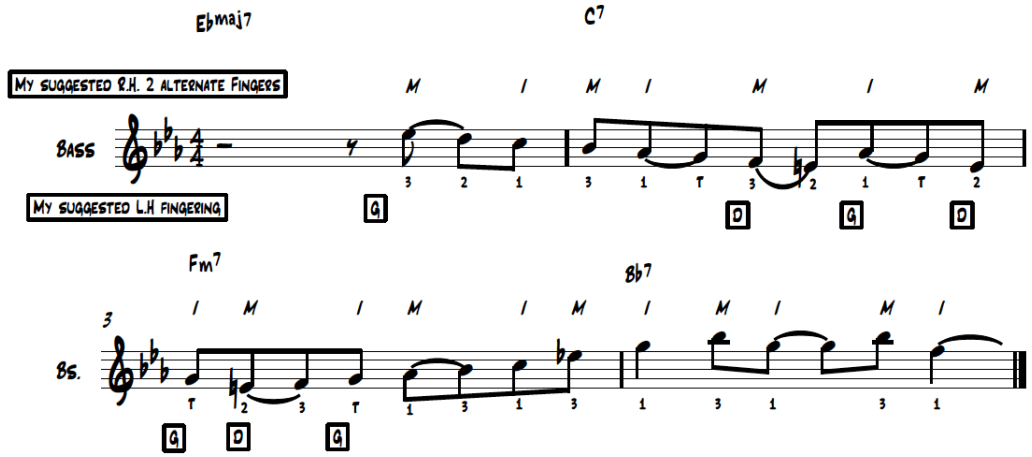


**Figure 160: Patitucci's first four bars of solo on Evidence; adaptation to double bass with suggested right and left hand fingerings by the author.**

After a deeper analysis I concluded that the fingerings in Figure 161 better respect Patitucci's playing. In both cases (Figures 160 and 161) the result in terms of performance are the same, because the articulation is not altered.

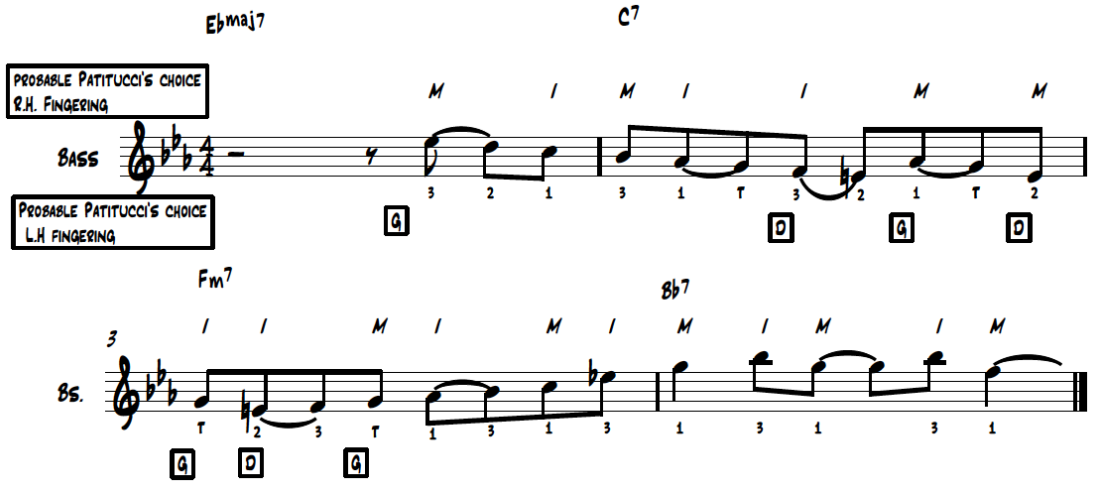


**Figure 161: Patitucci's first four bars of solo on Evidence; adaptation to double bass with probable Patitucci's right and left hand fingerings.**

Since this phrase is very difficult to execute on double bass because of its high register I transposed it one octave lower for teaching and learning purposes (Figure 162); this transposition allows an easier playability on a four string bass too (Figure 163).

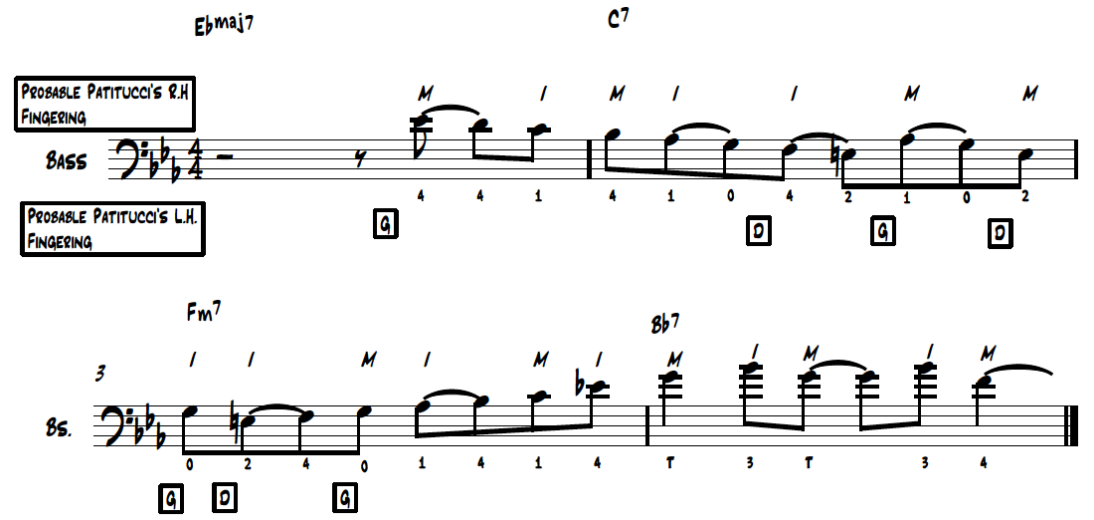


**Figure 162: Patitucci's first four bars of solo on Evidence, one octave lower; adaptation to the double bass with probable Patitucci's right and left hand fingerings.**

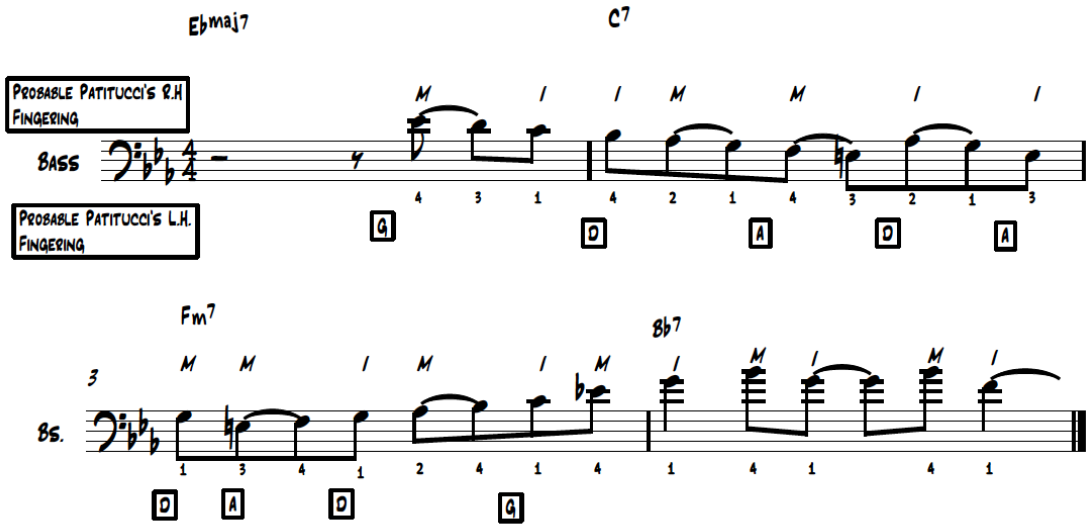


**Figure 163: Patitucci's first four bars of solo on Evidence, one octave lower; adaptation to the four string bass with probable Patitucci's right and left hand fingerings.**

The use of Patitucci's technical devices combined with his improvisational skills in both instruments is surely a great resource for bassists[166] that aspire to improve. For students that already play both instrument using more traditional left/right hand techniques the study of Patitucci's material is surely a solid way to continue digging deeply in the tradition developing linear and intervalic improvisational competences. Internalize all this information will take a long time, however because so many techniques have been investigate in this dissertation some shed over further studies in this field can be introduced.

## 7.5 Further Possibilities

Once all these examples and left/right hand fingering are integrated in our playing habits it is possible to apply some different technique in order to test if it is possible to use them maintaining all the characteristics of Patitucci's playing.

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166 Bassists that play only double bass, only electric (four, five or six string) or that play both electric and double bass.

In the Figure 164 I applied over the I-VI7-II-V7 progression Wolf's modal fingerings in the lower position on the left hand (2011), while for the right hand I used Jimmi Roger Pedersen's *Scandinavian Double Bass Technique* (2009).

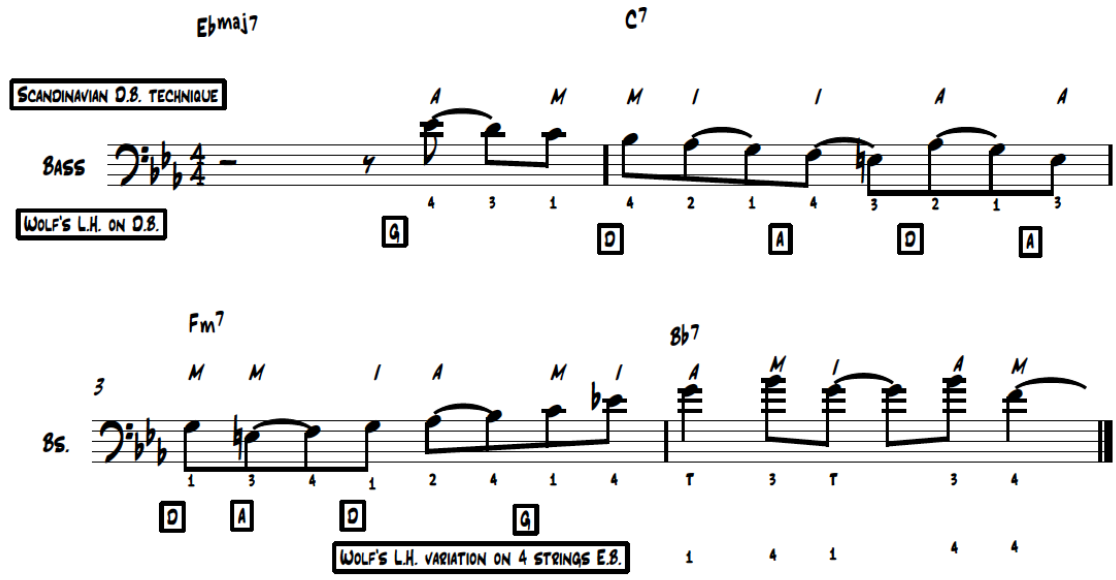


**Figure 164: Patitucci's first four bars of solo on Evidence, author's adaptation to double bass and 4 strings electric bass one octave lower than the original using Wolf's modal fingerings on left hand and the Scandinavian Double Bass Technique on the right hand.**

Notice that the same right/left hand fingerings could be used on the 4 string electric bass, substituting only the last bar fingering (because it is very unusual the use of the thumb position on the electric bass).

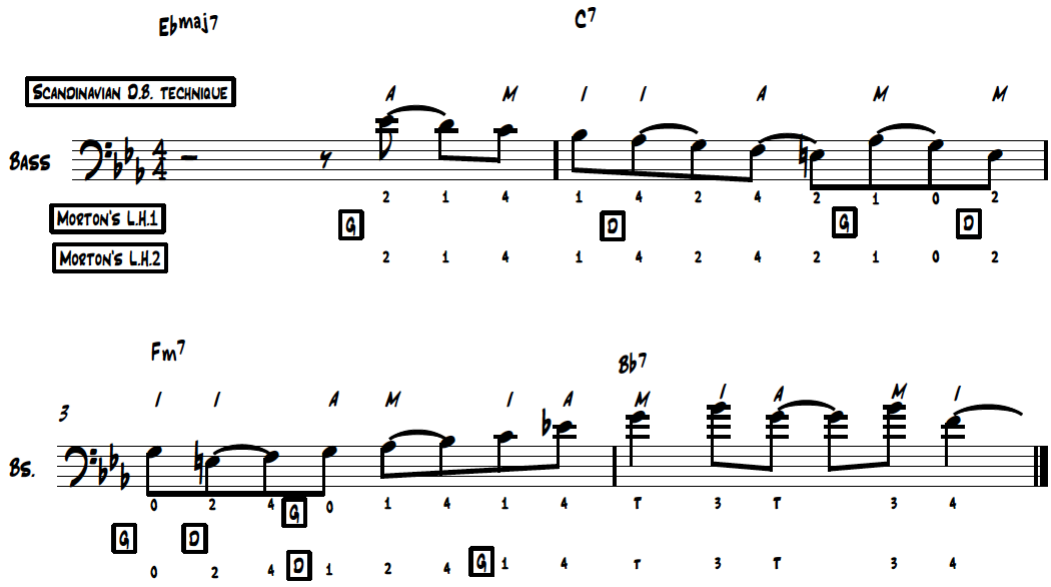


**Figure 165: Patitucci's first four bars of solo on Evidence, author's adaptation to double bass one octave lower than the original using Dr. Mark Morton's strategies on left hand and Scandinavian Double Bass Technique on the right hand.**

In the example above (Figure 165) I adapted Dr. Mark Morton's (1991) concepts to Patitucci's first 4 bars solo devising two different fingerings (lyrical and technical). Patitucci's solo is executed really fast so I used open strings playing two notes per position (as suggested in chapter 2). For the second fingering on bar 3 I used the open hand fingering (Morton, 1991).

Once a left hand fingering is chosen and memorized, the player can test different right hand plucking techniques. It is possible also to see in Figure 166 that using the *Scandinavian Double Bass right hand technique* (2009) with different left hand fingering a new right hand sequence is generated.

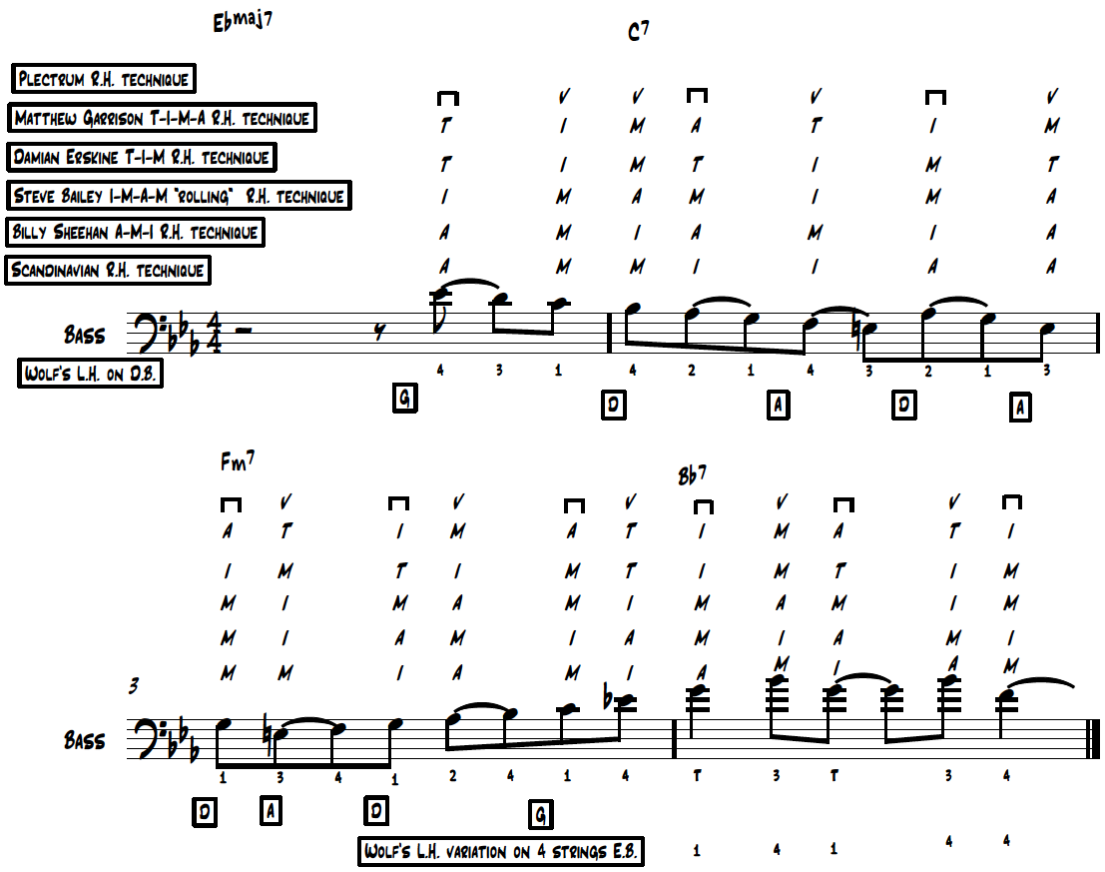


**Figure 166: Patitucci's first four bars of solo on Evidence, author's adaptation to double and electric bass one octave lower than the original using 6 different right hand techniques.**

### 7.5.1 About teaching and learning electric and double bass

In order to play the double bass and the electric bass, the bassist should face the fact that he/she has to double his study schedule in order to fully understand and then master the technical and musical issues that these two different musical instruments present. Because the two instruments are learned at the same time, a sort of confusion could be installed in the learning process. The most important issue regarding novice students is to teach them solid and well-organized techniques in order to avoid confusion.

In the case of John Patitucci, the teaching of both instruments works just fine. Again the success of this task is related to the capacity of the teacher to stimulate the student, creating an individual and personalized teaching program.

As demonstrated in this dissertation, the instruction of Patitucci's way of playing could be the backbone of a future teaching program for advanced bass students[167]. The exercises in this chapter are primary examples of the pedagogical possibilities offered by this study.

Finally, I have to say that in order to maintain all the characteristics of a bass line (in this specific case Patitucci's lines) only a few possible left/right hand fingerings are permitted. In fact, articulation and ornamentation should be preserved choosing where and when to perform a string crossing or a shift in order to maintain the original phrasing coherence. This task requires a very careful listening to the analyzed line that should not to be underrated.

[167] Especially addressed to University level students.

# Conclusions

The purpose of this dissertation is to offer some tools to the bassists who want to play both electric and double bass, using John Patitucci as an exemplar model.

One of the primary questions about playing the two instruments is: how do we approach the learning process for both.

As defined during this study, Patitucci uses the Symandl left hand fingering system[168] and four main right hand positions on double bass. When playing electric, he uses the Symandl's left hand fingering in the lower position of the fingerboard and the four-finger system for the middle/high part of the fretboard; for the right hand he uses two main positions[169].

Are these techniques the answer to those who want to achieve a high level of proficiency in both electric and double bass?

After analyzing a great variety of literature about the electric and double bass, and having the possibility to compare them, I notice that in order to efficiently teach both the instruments it is important to address the student to a highly organized method of left and right hand techniques. In my opinion, the best choice is to approach and consequently teach both instruments as completely different ones (at least for the left hand), using a distinct left hand technique[170]. This choice avoids confusion once one splits all the technical issues into individual and well defined tasks.

The French/German left hand fingering system is the best choice when teaching the double bass because it's technically solid and well organized (at least till the thumb position) as stated by Van de Geyn (2007), Berryman (1997), Reid (2000) and Patitucci

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168 As shown in chapter 2.4.1.

169 As shown in chapter 6.2.

170 As for the right hand it is possible to use the same technique as I explain later.

(2013) (2014) (2015); in fact its dense position grid that divides the fingerboard helps the young bassist to find "where the notes are." Other systems, such as Rabbath, Morton, Pedersen and Wolf's are recommended to intermediate or advanced students, because using a minor number of positions tends to create intonation problems for the less experienced players.

Another motive why one should prefer the 1-2-4 left hand fingering system over the Italian school, is also related to "geographical" and practical reasons: the Billè's method is taught prevalently in Italy as the Symandl's method (in his multiple variations) is taught around the rest of the globe. So it is easier to find texts (in both jazz and "classical" literature) and teachers who specialize on the German/French left hand fingering system. Some bass players (including John Patitucci (2015) and Lew Berryman (1997)) argue that Symandl's left hand fingering system is better than Billè's in terms of intonation, especially on the lower part of the fingerboard[171]. It is possible to notice that my reflection about the left hand double bass technique exactly fits with Patitucci's method of teaching and playing double bass. I agree that this is the best left hand system to teach, especially to novice students starting to learn the double bass. This conviction is strongly supported by the fact that the great majority of professional double bass players and students use this technique as their primary choice (Petzborn, 2010).

Regarding the teaching of the electric bass, I believe that the four-finger system is the best choice for left hand fingering. In fact the presence of the frets dividing the fingerboard, the shorter distance between half tones (comparative to the double bass) and the geometrical division of the fretboard makes the use of this technique easier.

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[171] However some of the most important all-time double bass virtuosos performed and still perform using the Italian fingering system as Giovanni Bottesini, Italo Caimmi, Isaia Billè, Francesco Petracchi and Stefano Scodanibbio among others.

For the right hand[172] I suggest the use of a two-finger rest stroke technique[173] for both instruments as the main technique[174]; this choice matches with Patitucci's right hand playing technique preferences.

Looking closer to the data collected during my investigation, it is evident that the use of the right hand on both instruments is practically the same. This is significant, because the right hand could be considered "the" connection between double bass and electric bass playing; giving the "pulse" to bass lines and improvised phrases. Patitucci's right hand technique confirms this hypothesis; in fact when he uses the index and middle finger while playing both instruments, his approach is almost the same. When playing ascending passages, Patitucci alternates his index and middle right hand fingers; when descending, he alternates the fingers as if playing on the same string and "rakes" with the same finger while crossing between adjacent strings[175]. This posture similarity is more evident when looking at the pictures below (Figure 167) where I just rotate the image of Patitucci's right hand playing the double bass 90º degrees clockwise. Of course there are some minor differences due to the fact that the double bass is vertically played and the electric horizontally, but the images support my theory.

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172 Or plucking hand for left handed bass players.

173 Chapter 5.3.

174 The only remark is that while playing walking bass lines on double bass is preferable playing with only the index finger as Brown (1999) suggests or with the stationary fingers (Carter, 1998).

175 As shown in chapter 6.

**Figure 167: Comparison between Patitucci's double bass (left) and electric bass (right) right hand posture, from ArtistWorks Online Jazz Bass School.**

According to all the information collected, it is also possible to state that moving the right hand towards the bridge or in the direction of the fingerboard causes a variation in terms of tone, definition and even volume on both instruments; however as shown in Figure 167, it is verifiable that in order to play fast passages or solos on the double bass using the two fingers at 90º degrees in respect to the fingerboard, the movement of the right hand toward the bridge is limited. The dynamic palette of sound production in this case is reduced.

As stated and shown in chapter 6, John Patitucci is a model as performer on both instruments; musically speaking he perfectly knows how to apply all the most commonly used techniques to his bass lines and improvisations.

The great difference between his playing on double bass and electric bass is his utilization of a six string bass while playing electric. As seen in chapter 6, the construction of his walking lines on electric bass and on double bass is quite similar. Yet when comparing his playing while soloing and/or playing chords on both instruments, matters are quite different. The use of the higher register on the six string bass, gives to Patitucci's solos some components that are missing on his double bass playing. His sound on the six string electric bass is more guitar-like, but he maintains his personal style of playing (as

stated in this dissertation articulation, ornamentation and accents are Patitucci's playing fingerprints). When performing chords[176] (a technique that he explores extensively on his six string electric bass) this difference between the two instruments is more tangible, making his playing on the electric even more distinct from the double bass. All these differences are reduced when Patitucci plays on a four string electric bass because the range between the two instruments is similar. In this case, differentiating between the two instruments (especially when talking about phrasing and walking bass lines) becomes more difficult. It seems understandable that because the player is the same artist, while performing on electric and double bass, some of the ideas are shared on both instruments (as demonstrated in chapter 6). However the key is the ability to highlight the differences between the two instruments.

Normally when a trained electric bassist starts to perform on double bass, the tendency is to play the acoustic instrument as the electric one, transposing and emulating the technical and musical knowledge previously acquired for the electric bass. The same problem could occur when a double bassist starts on the electric instrument. This approach issue is something that few bassists successfully solve; John Patitucci is one of those who effectively and successfully achieved this.

Patitucci's example is very important for many reasons; the most evident is his wise use of technical and musical knowledge on electric and double bass. He applies a common ground for his playing on both instruments: the entire heritage of what he has learned and developed over his already long career as electric and double bassist. The result is a mixture of all these ingredients, maintaining the sound[177] and characteristics of each instrument unaltered.

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176 This technique should be analyzed in further studies on John Patitucci.

177 Sound is normally related to the use and position of the right hand (chapter 6.4.3.)

One of the goals of this research is to apply of some of Patitucci's techniques and vocabulary, here analyzed, to the learning and teaching of electric and double bass. However, the study of Patitucci's bass lines and improvisations is advised to intermediate and advanced players who already possess a firm knowledge of both instruments due to the demanding technical requirements Patitucci's playing presents. Additionally, the application of other left hand techniques[178] is related to the student deep knowledge of the fingerboard of both instruments.

With the double bass, the absence of references creates problems of intonation when trying to discover the right note. On the electric bass, the presence of frets and the consequent geometrical subdivision of the fingerboard could cause that the bassist would base his playing only on visual references[179]; forgetting in this case the real importance of knowing where the notes are. To resume, left hand fingering positions are important to "find" the notes in an early stage; then they became simply tools used by the player in order to choose the best solutions to serve musical purposes. This is the main reason why almost none of the jazz methods reviewed here have written left hand fingerings. At this point the question is: why it is so important to notate Patitucci's fingerings? The answer is that fingerings (related to both hands) are the direct cause of articulations, accents and ornamentation; so in order to copy and study Patitucci's playing,[180] it is urgent to know how he fingers his lines. At the same time, as I argue in chapter 6, the opposite process is valid too: knowing exactly all the parameters referred to in respect to Patitucci's lines (articulations, accents and ornamentation), it is possible to write down some of the

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178 As Gary Willis' left hand technique on electric bass or Morton, Rabbath, Pedersen and Wolf's left hand technique on double bass.

179 As in the case of the use of universal fingerings.

180 Consequently this could be applied to others bassists who both play electric and double bass.

probable fingerings that he uses to achieve certain results while using only audio references[181].

This affirmation opens other possibilities regarding the application of the methodology here used to other electric/double bassists and even to other jazz instrumentalists[182].

## Future Work

The next step will be the development of a complete pedagogy for the teaching of the electric and double bass, a program based on some of the left and right hand techniques here analyzed, with John Patitucci's playing as primary example. First, the focus should be on the study of the players who inspired him, then proceed through a deep study and implementation of his playing in jazz field. The application of this teaching program to a sample of aspiring electric/double bass players will be the first objective of this new study.

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181 As Cd tracks, mp3 et al.

182 With the limitations due to the characteristics of each individual instrument.

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# Glossary

Upright Bass = Double Bass

**L.H. = Left Hand**

All the left hand fingerings are written below the staff (only alternative fingerings are placed on top)

B = B sting (on five, with low B or six string electric bass)

E = E string

A = A string

D = D string

G = G string

C = C string (on five with high C or six string electric bass)

0 = open string

1 = index finger

2 = middle finger

3 = annular finger

4 = little finger (pinky)

0A = open A string

1G = a note played utilizing the index finger on the G string

XD = a ghost note played utilizing any left hand finger on the D string

0-3 = play harmonic with the third finger

1-2-3 = index, middle and annular finger

1-2-3-4 = index, middle, annular and little finger = four-finger system = Franke system

1-2-4 = index, middle and little finger = Simandl's left hand fingering = Nanny's left hand fingering = German/French School of left hand fingering

1-3-4 = index, annular and little finger = Billè's left hand fingering = Italian School of left hand fingering

H.P. = half position (is the first position in Simandl's left hand fingering, while Billè uses half position between others positions too)

I to XI = first position to eleventh position (Simandl's left hand fingering)

T = thumb position

TA = play with the thumb on the A string

To = T+ = play the harmonic with the thumb

+ 0
4 = 4 = play the harmonic with the little finger

_ = shift position forwards (Billè's left hand fingering)

‾ = shift position backwards (Billè's left hand fingering)

I to VII = first position to seventh position (Billè's left hand fingering)

I to IIX = first position to eight position (Nanny's left hand fingering)

I to VI = first to sixth section or position (Rabbath's left hand fingering for all the range of the instrument)

1-2 = it is possible to use the index or the middle finger

**R.H. = right hand**

All the right hand fingerings are written on top of the staff

T = thumb finger

I = index finger

M = middle finger

A = annular finger = ring finger

P = little finger = pinky finger

Rake = Drops = Falls Down = a technique that permits to the player to move from one string to an adjacent one (this could be a jump of more then one string) using the same right hand finger.

Stationary Fingers = Big Finger = B = the use of both index and middle finger togerther

A-M-I = right hand progression using ring finger, middle finger, and index finger alternating

Rolling = I-M-A-M = right hand progression using index finger, middle finger, and ring finger and again middle finger alternating

Floating Thumb = technique that lets the thumb move basically following the plucking finger in order to mute the strings that are not played

Middle/Pinky anchor = this technique lets the thumb on the lowest string (muting it) and floats with the middle and pinky fingers, following the plucking finger

Rest Stroke = the plucking finger hits the string and then "rest" on the adjacent string below. In the "rest stroke" pluck, the knuckles (or more specifically the base joint of the fingers) are responsible for the mechanics of the movement, while the string is plucked with the fleshy part of the finger pad area

Free Stroke = the string is plucked with the tip of the finger, and the main movement is performed by the medial joints and only in a small part by the base joint

Double Thumping = the thumb is used to downstroke and upstroke as a pick would do; pressing the thumb down and up improves playing efficiency, doing in one whole movement on the two different actions

Td = thumb down = downstroke

Tu = thumb up = upstroke

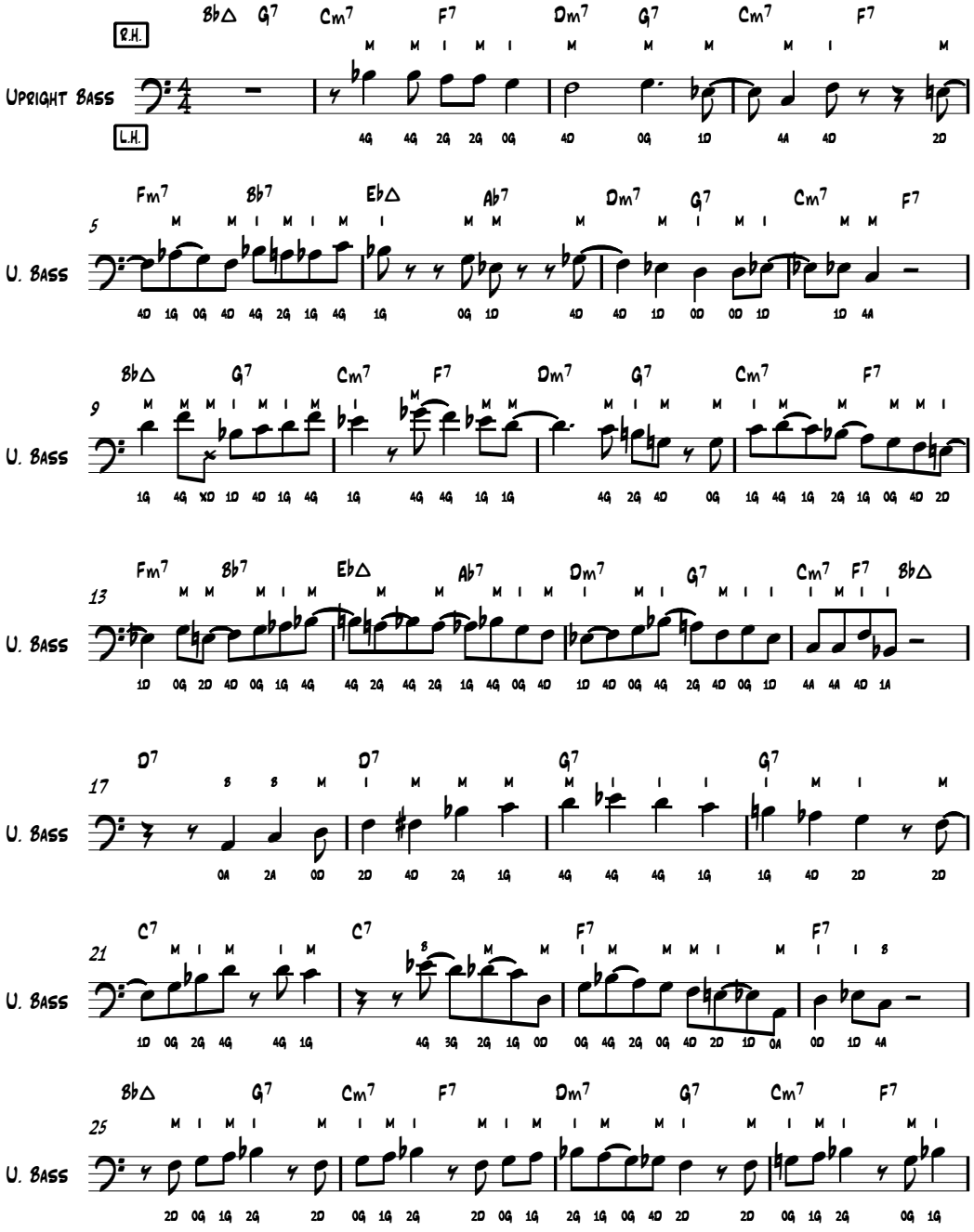
PO = pull-off

HO = hammer-on

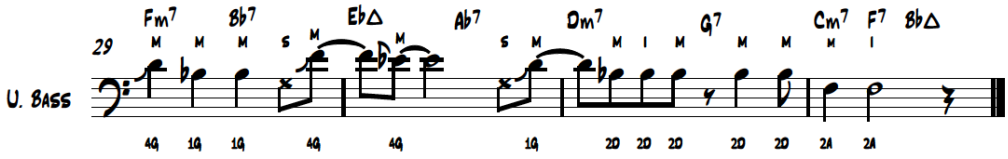
# Appendix A

**Patitucci's one chorus solo on "Do You" – Double Bass –**

**From http://artistworks.com/john-patitucci**



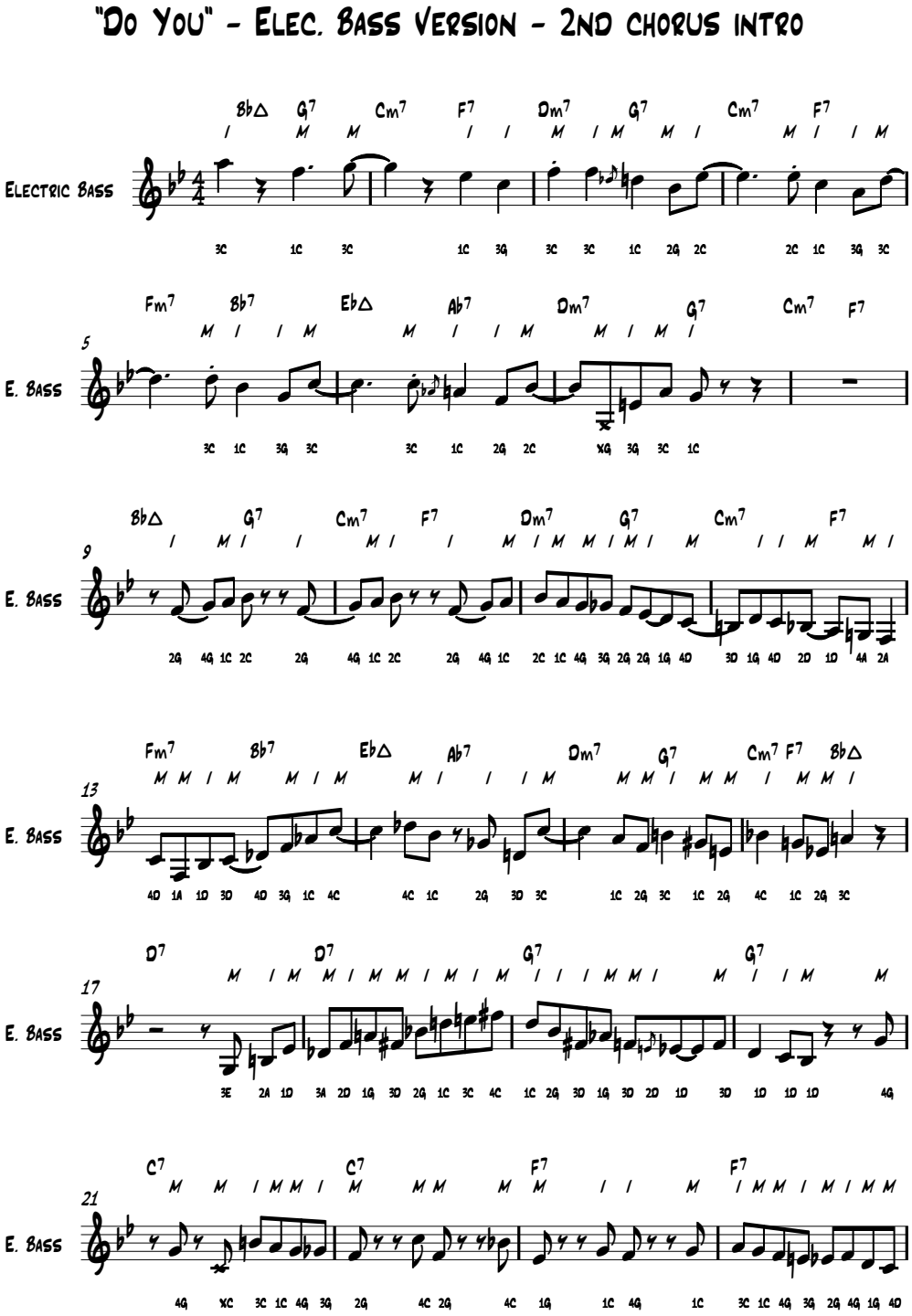
2



# Appendix B

**Patitucci's second chorus solo on "Do You" – 6 String Electric Bass -**

**From http://artistworks.com/john-patitucci**



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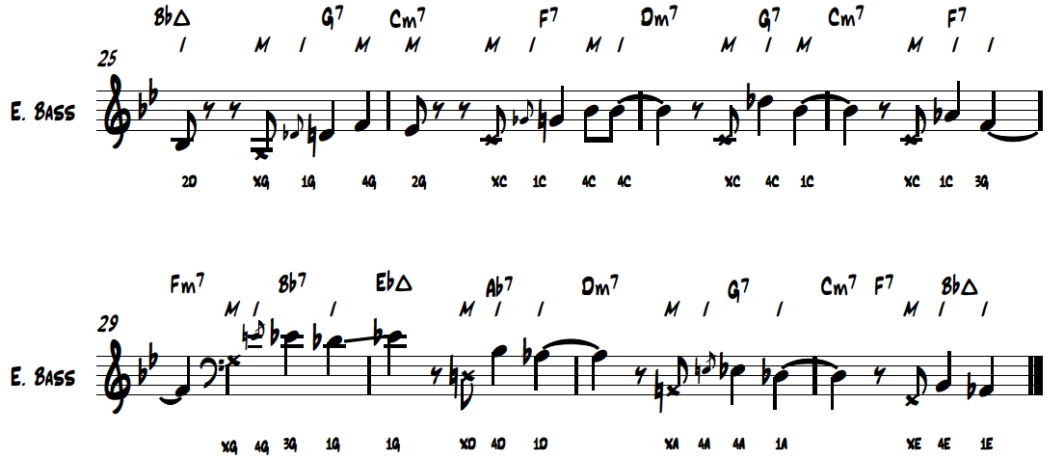
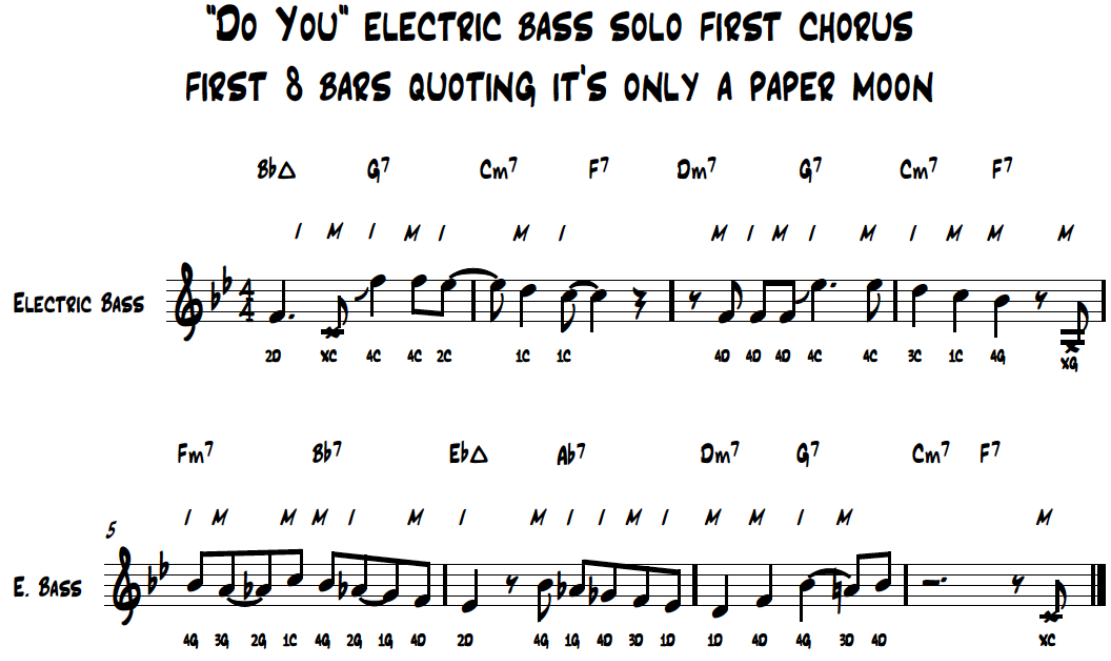



**Patitucci's first chorus solo on "Do You", first 8 bars – 6 String Electric Bass -**

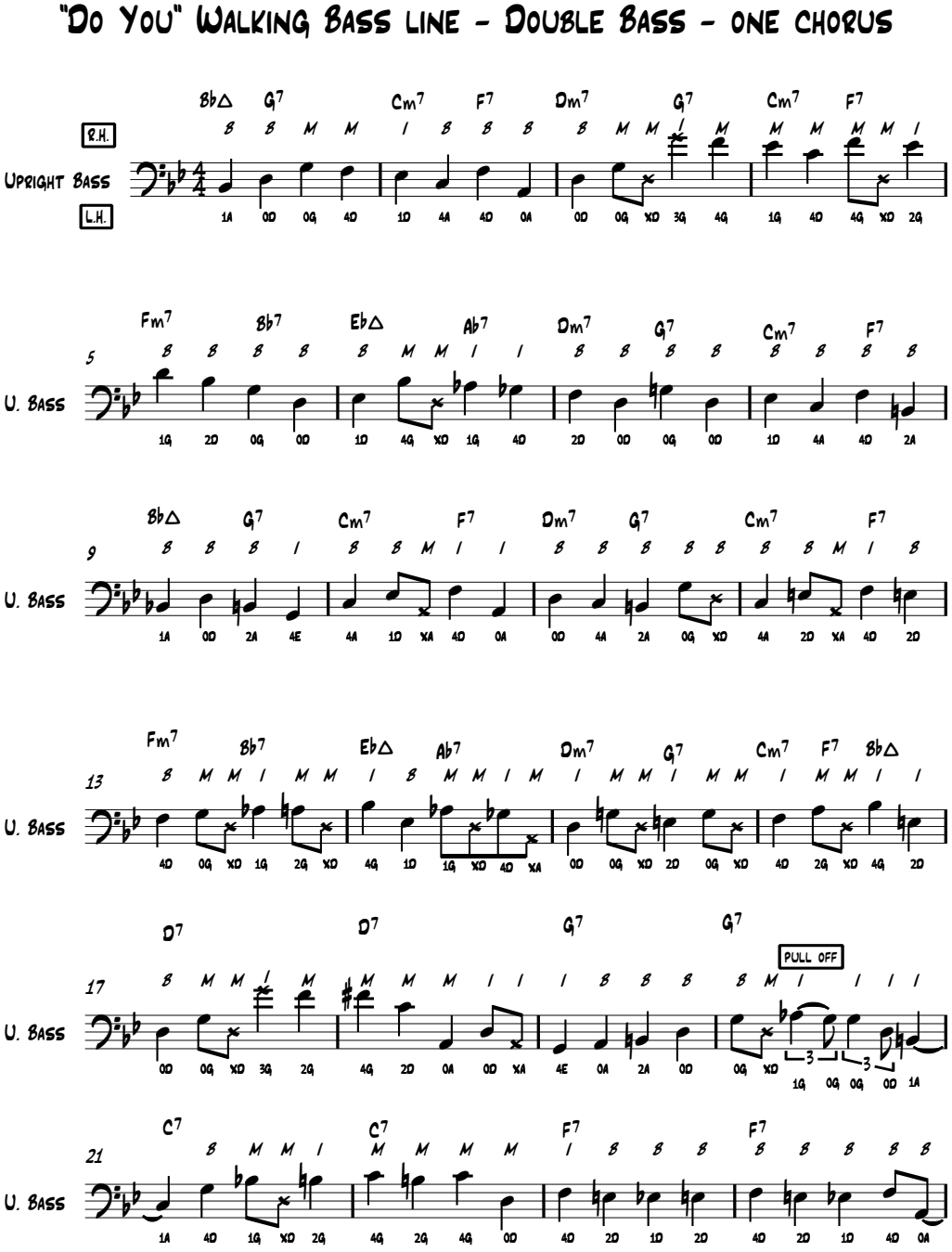
**From http://artistworks.com/john-patitucci**



# Appendix C

**Patitucci's one chorus walking bass line on "Do You" – Double Bass -**

**From http://artistworks.com/john-patitucci**



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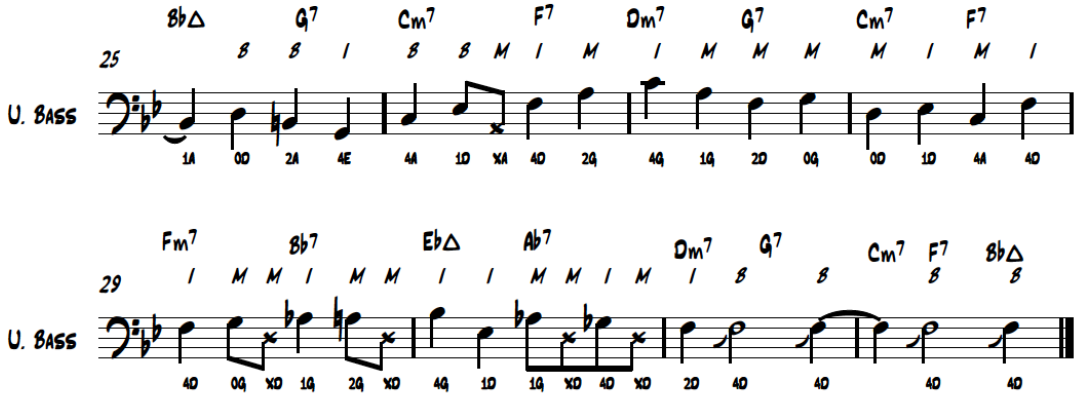
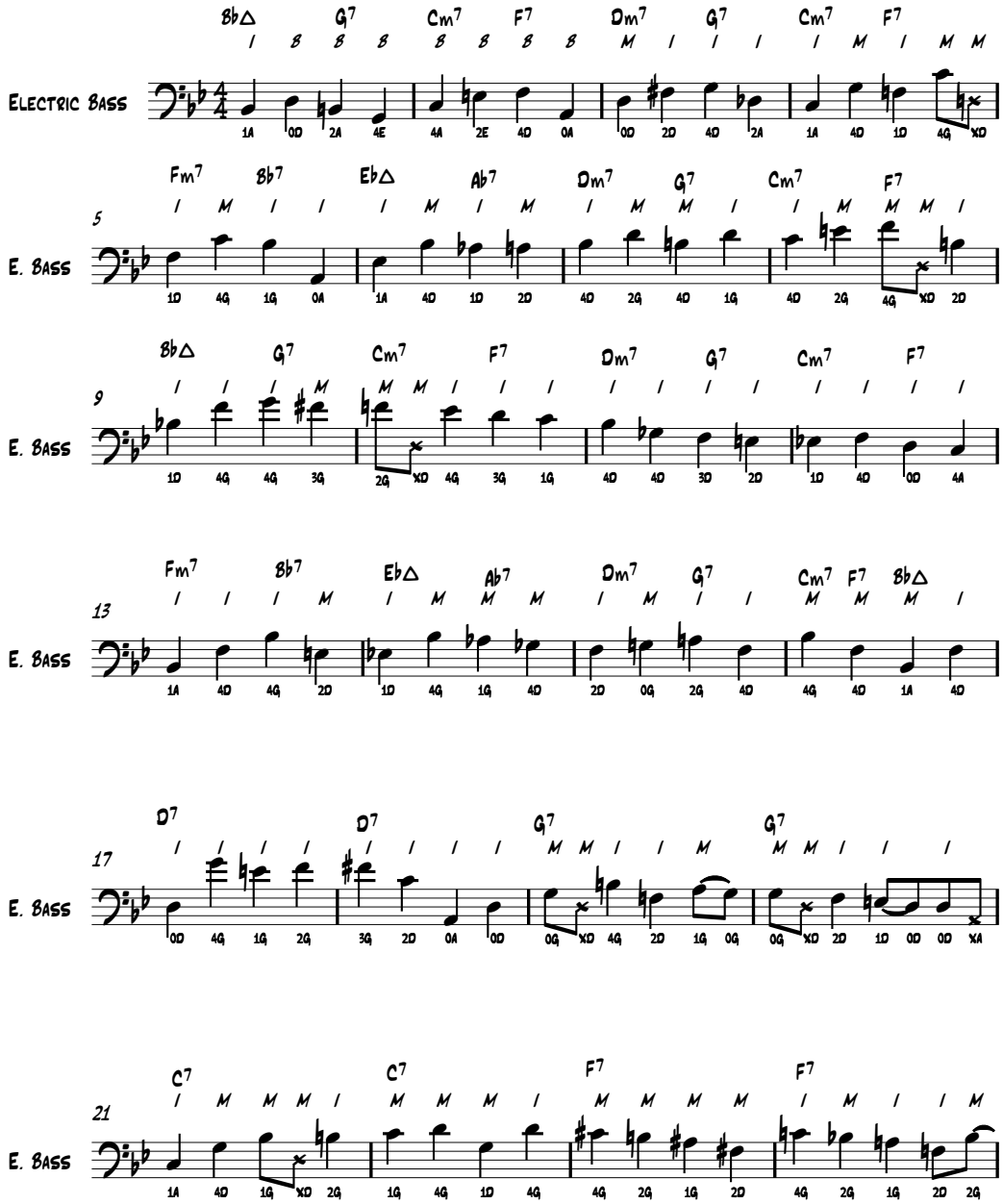

25
U. Bass
B♭△ G7 Cm7 F7 Dm7 G7 Cm7 F7
29
U. Bass
Fm7 B♭7 E♭△ A♭7 Dm7 G7 Cm7 F7 B♭△

# Appendix D

**Patitucci's one chorus walking bass line on "Do You" – 6 String Electric Bass -**

**From http://artistworks.com/john-patitucci**



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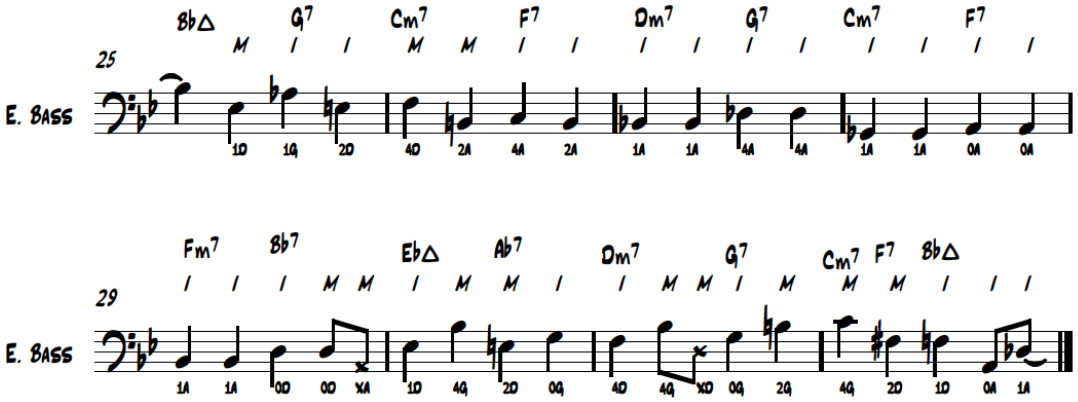
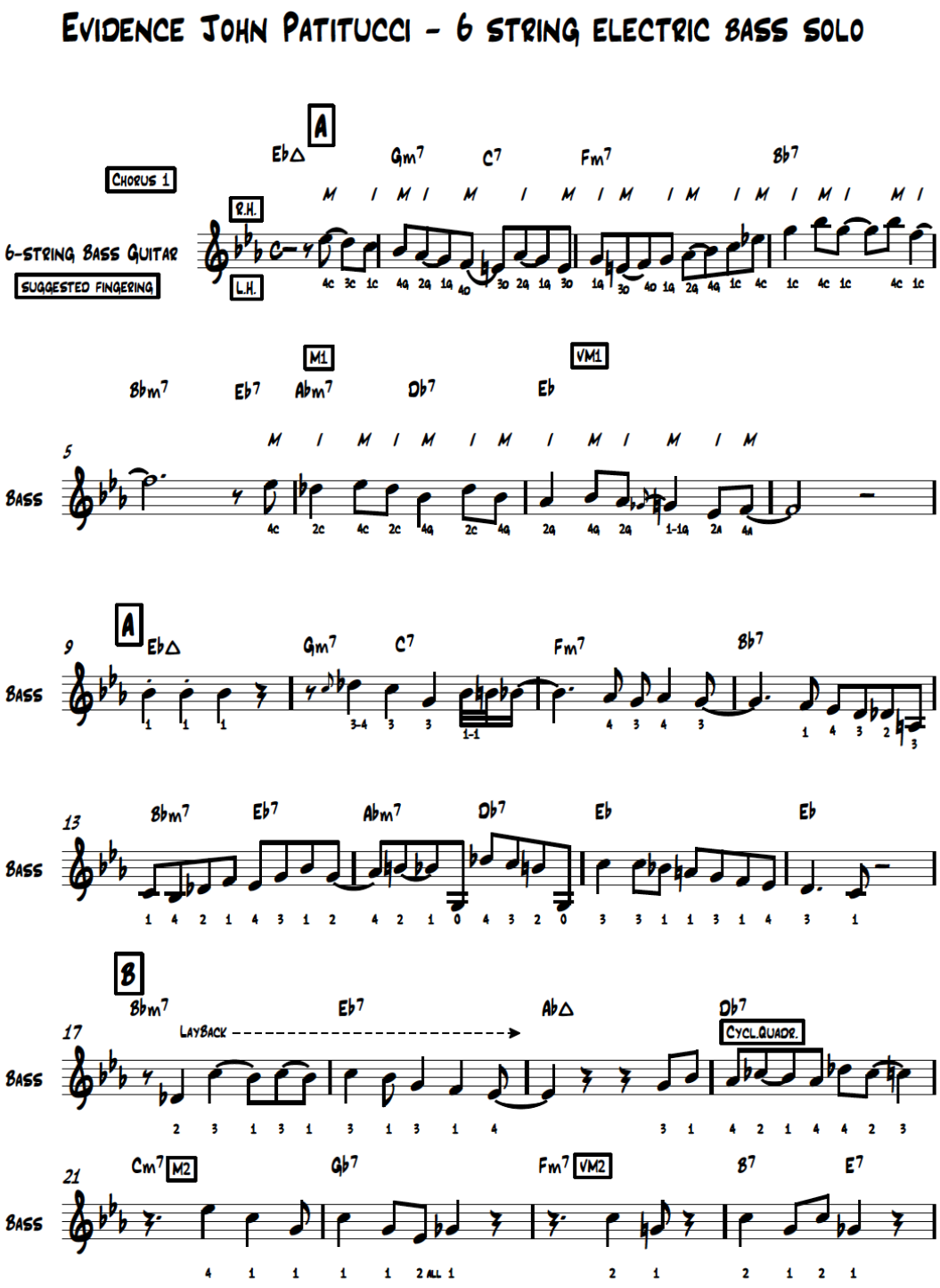

25
E. Bass
B♭△ G7 Cm7 F7 Dm7 G7 Cm7 F7
29
E. Bass
Fm7 B♭7 E♭△ A♭7 Dm7 G7 Cm7 F7 B♭△

# Appendix E

**Patitucci's solo on Evidence from his Cd "Line By Line" – 6 String Electric Bass -**



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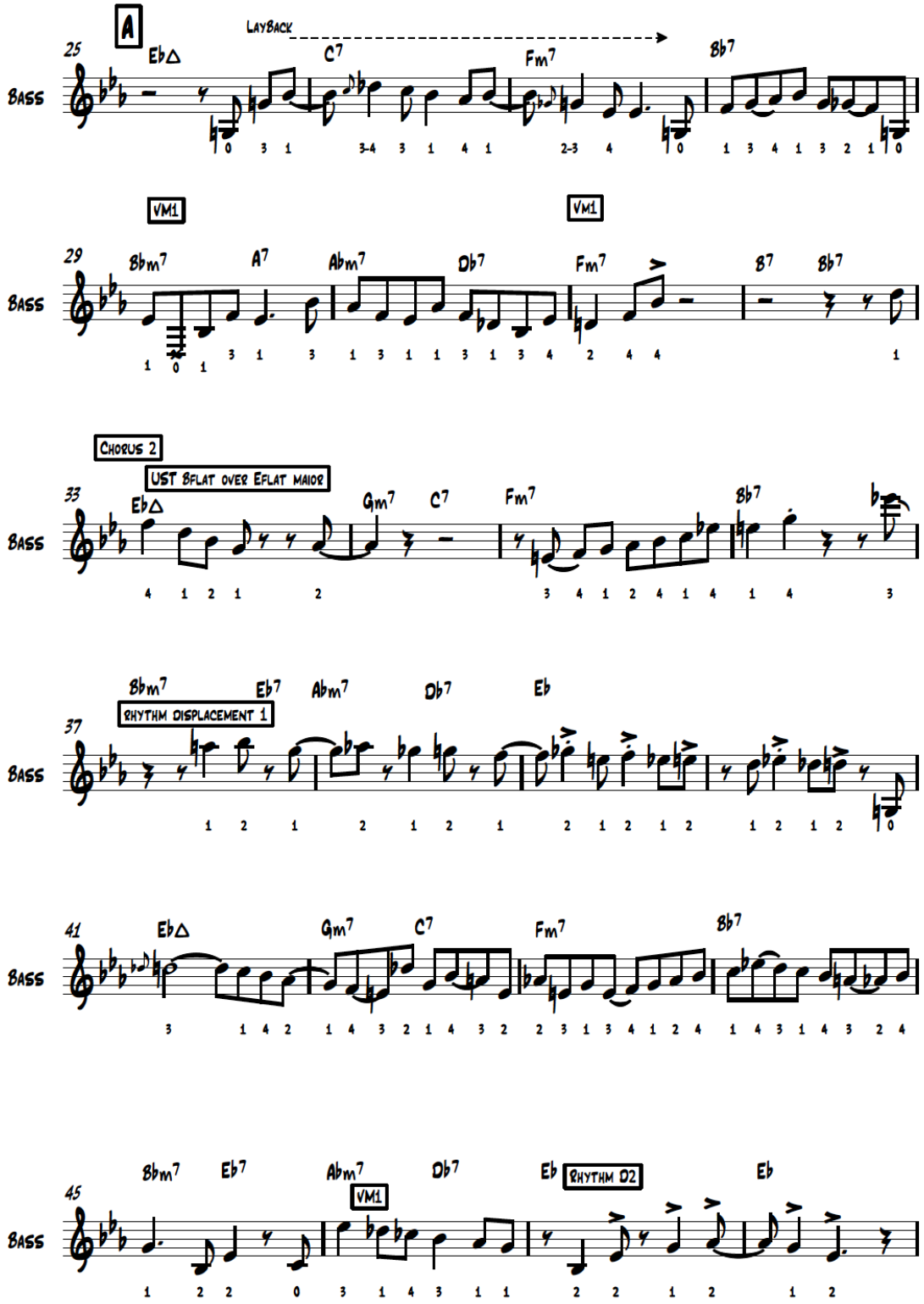
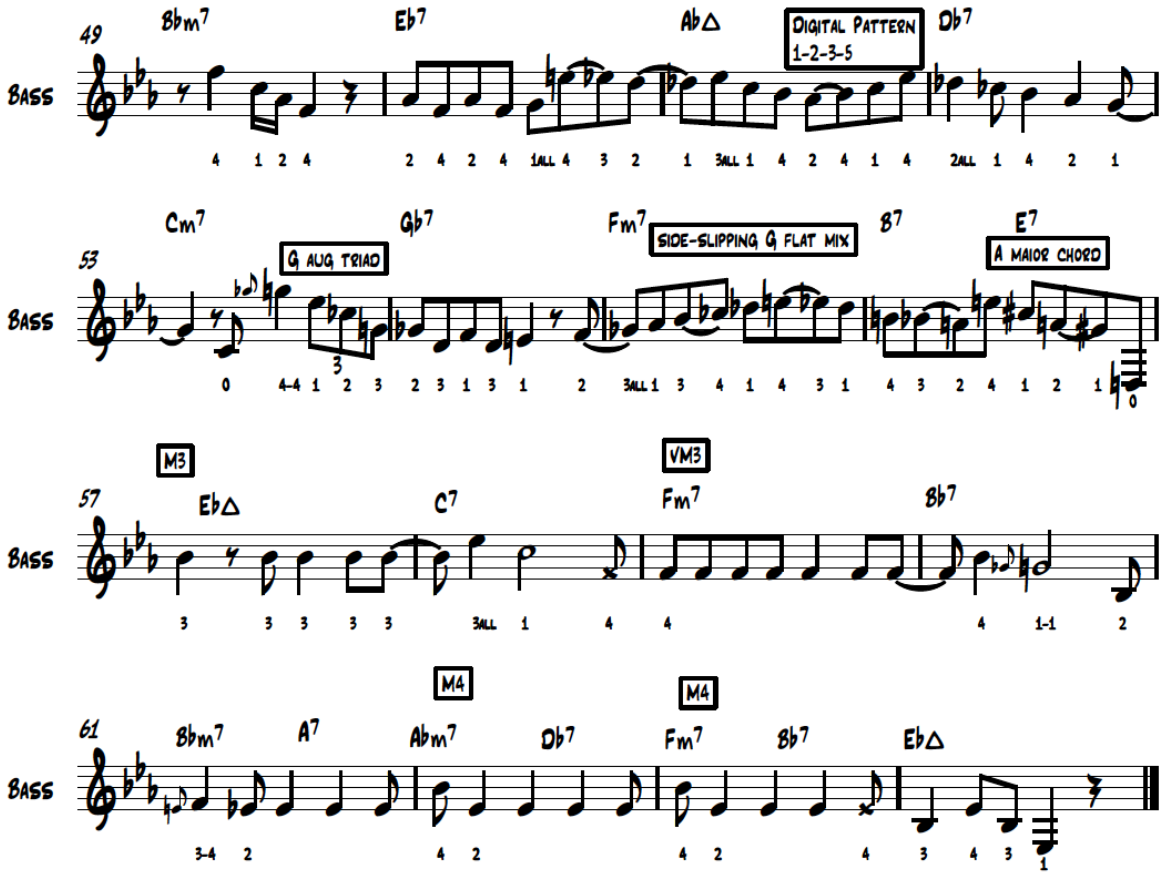
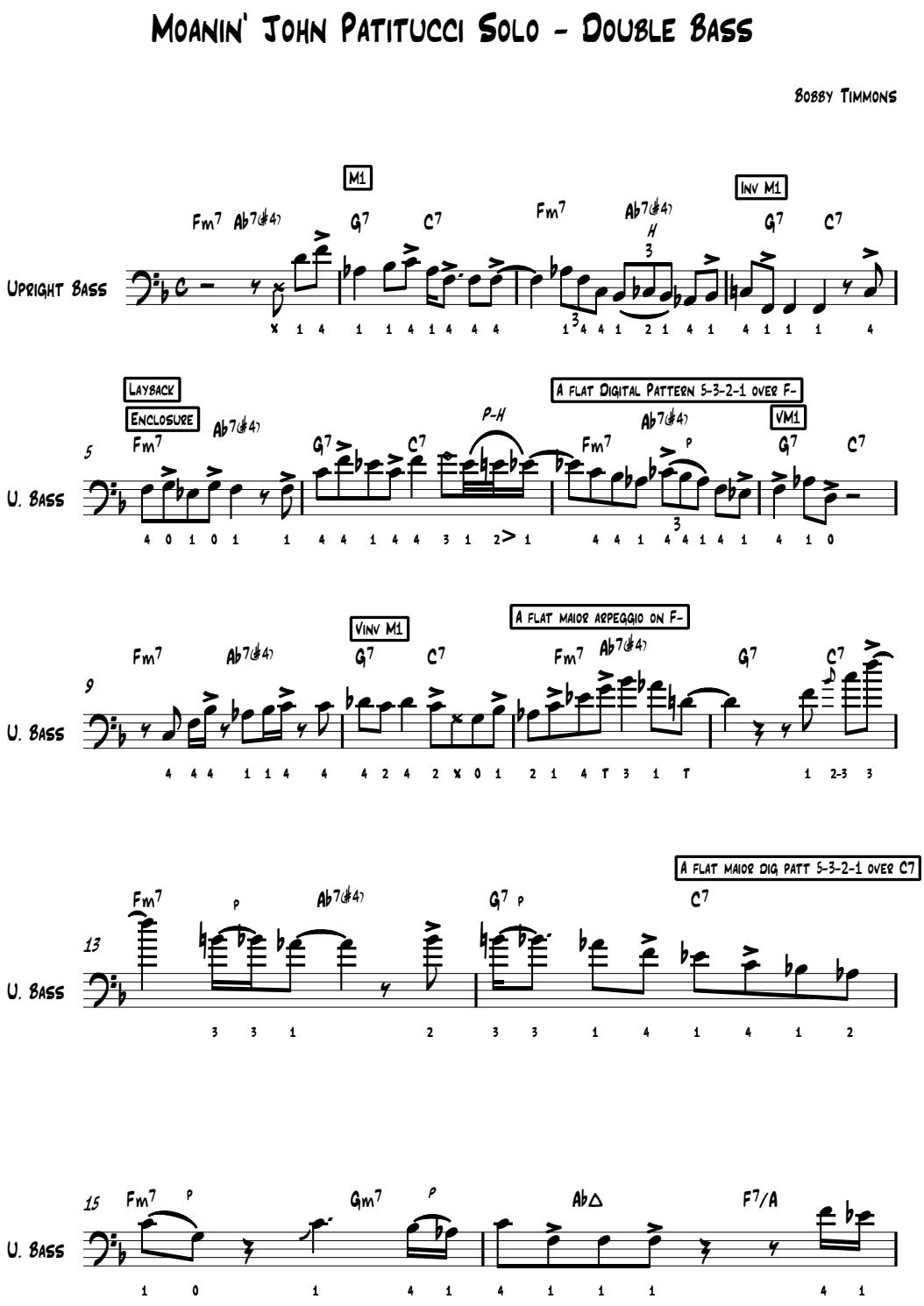

A
LAYBACK
25
Bass
Eb△
C7
Fm7
Bb7
VM1
VM1
29
Bbm7
A7
Abm7
Db7
Fm7
B7
Bb7
CHORUS 2
UST BFLAT OVER EFLAT MAIOR
33
Eb△
Gm7
C7
Fm7
Bb7
Bbm7
Eb7
Abm7
Db7
Eb
RHYTHM DISPLACEMENT 1
37
41
Eb△
Gm7
C7
Fm7
Bb7
Bbm7
Eb7
Abm7
Db7
Eb
RHYTHM D2
Eb
VM1
45

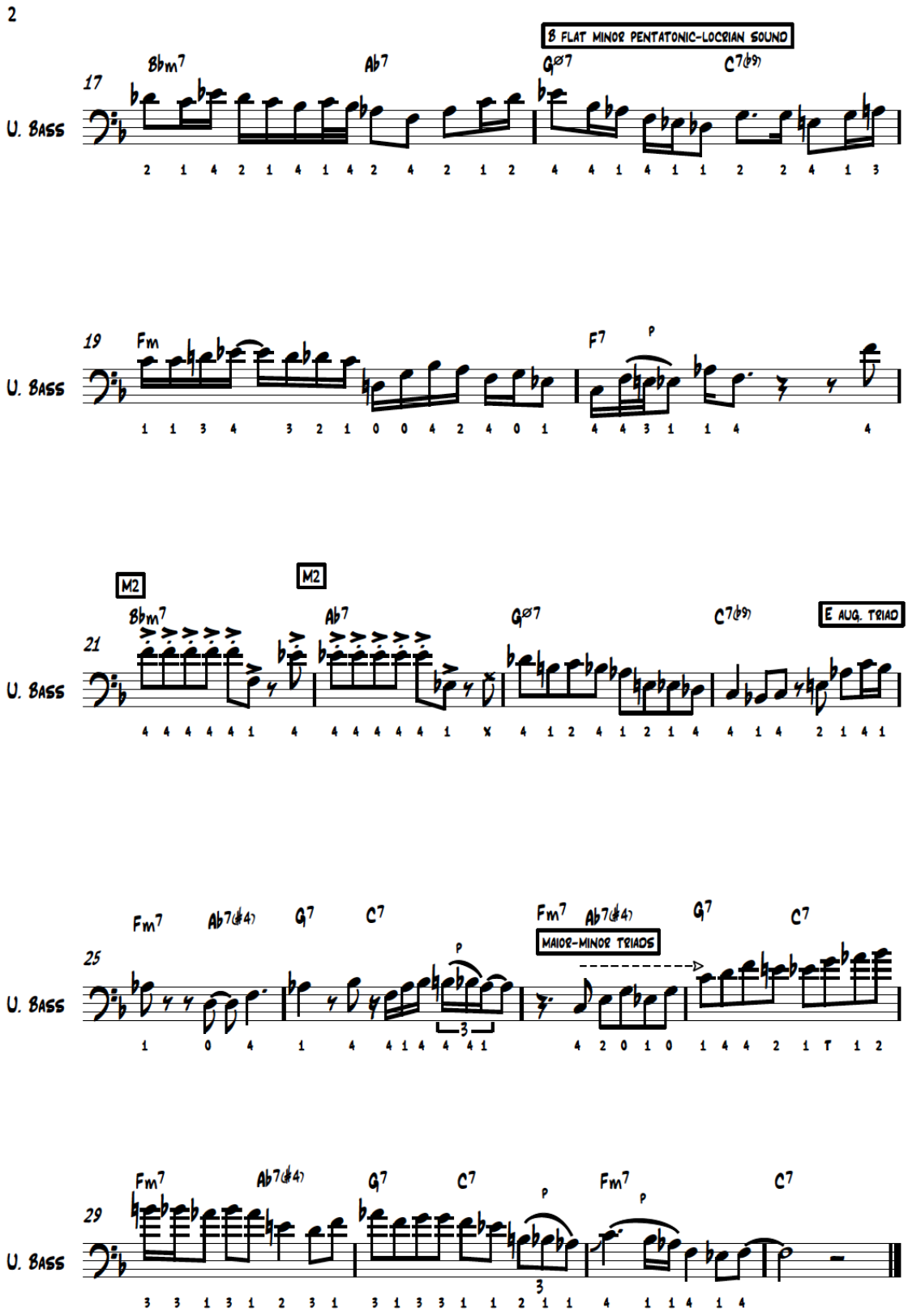
3


49
Bbm7
Eb7
Ab△
DIGITAL PATTERN
1-2-3-5
Db7
BASS
53
Cm7
G AUG TRIAD
Gb7
Fm7
SIDE-SLIPPING G FLAT MIX
B7
E7
A MAIOR CHORD
BASS
M3
57
Eb△
C7
VM3
Fm7
Bb7
BASS
M4
M4
61
Bbm7
A7
Abm7
Db7
Fm7
Bb7
Eb△
BASS

# Appendix F

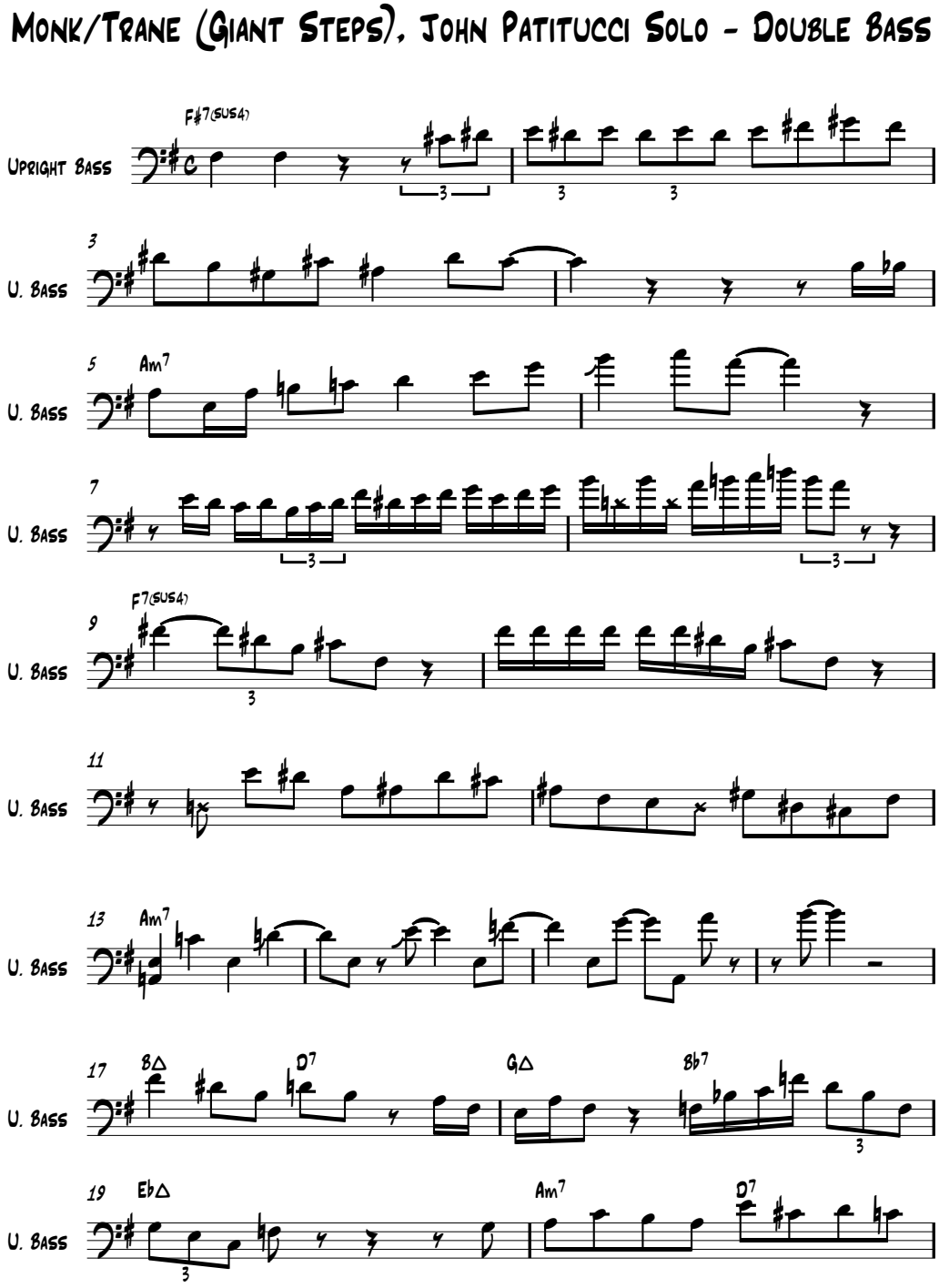
**Patitucci's solo on Moanin', from Eldar Djangirov's recording Eldar – Double Bass**

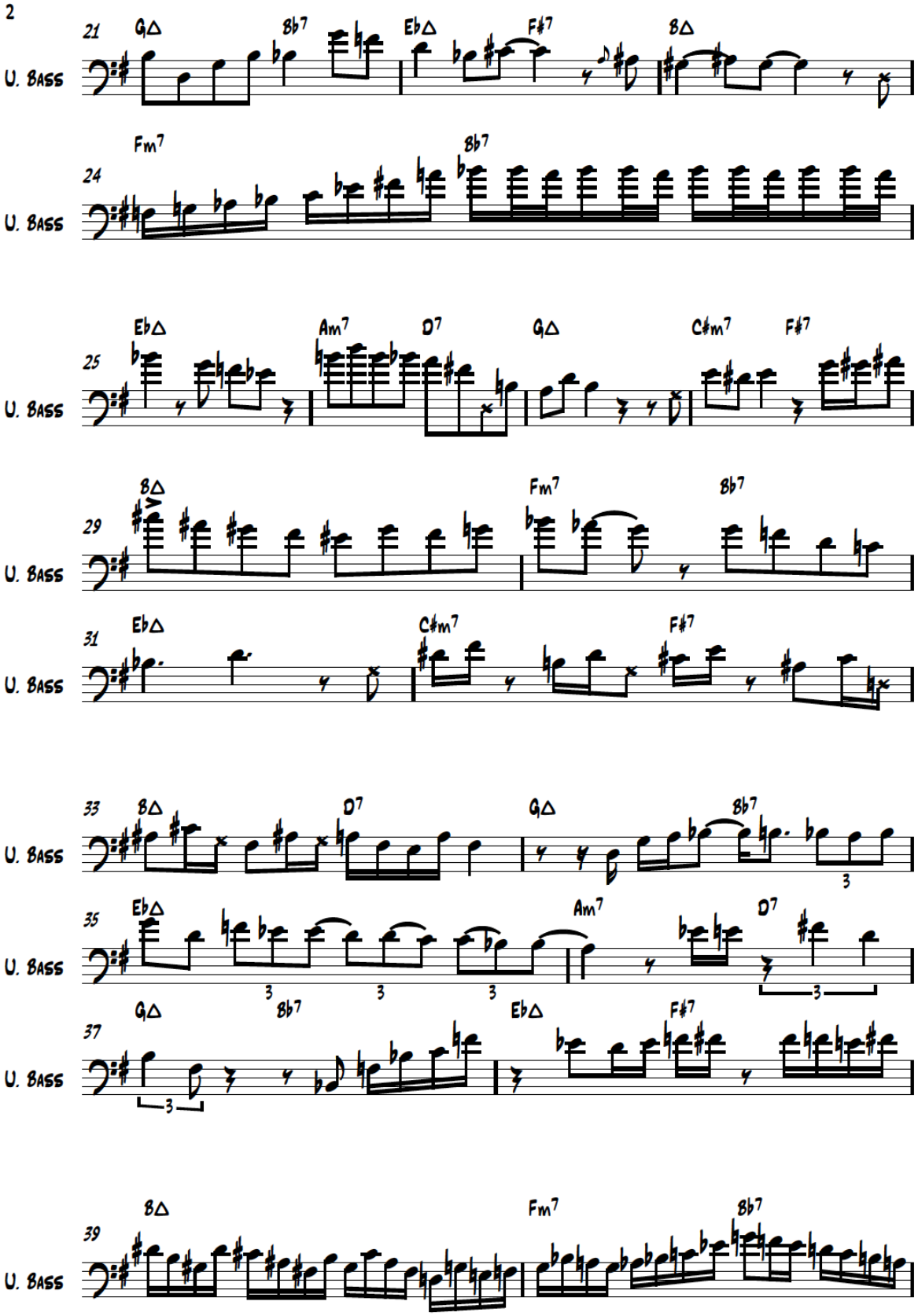


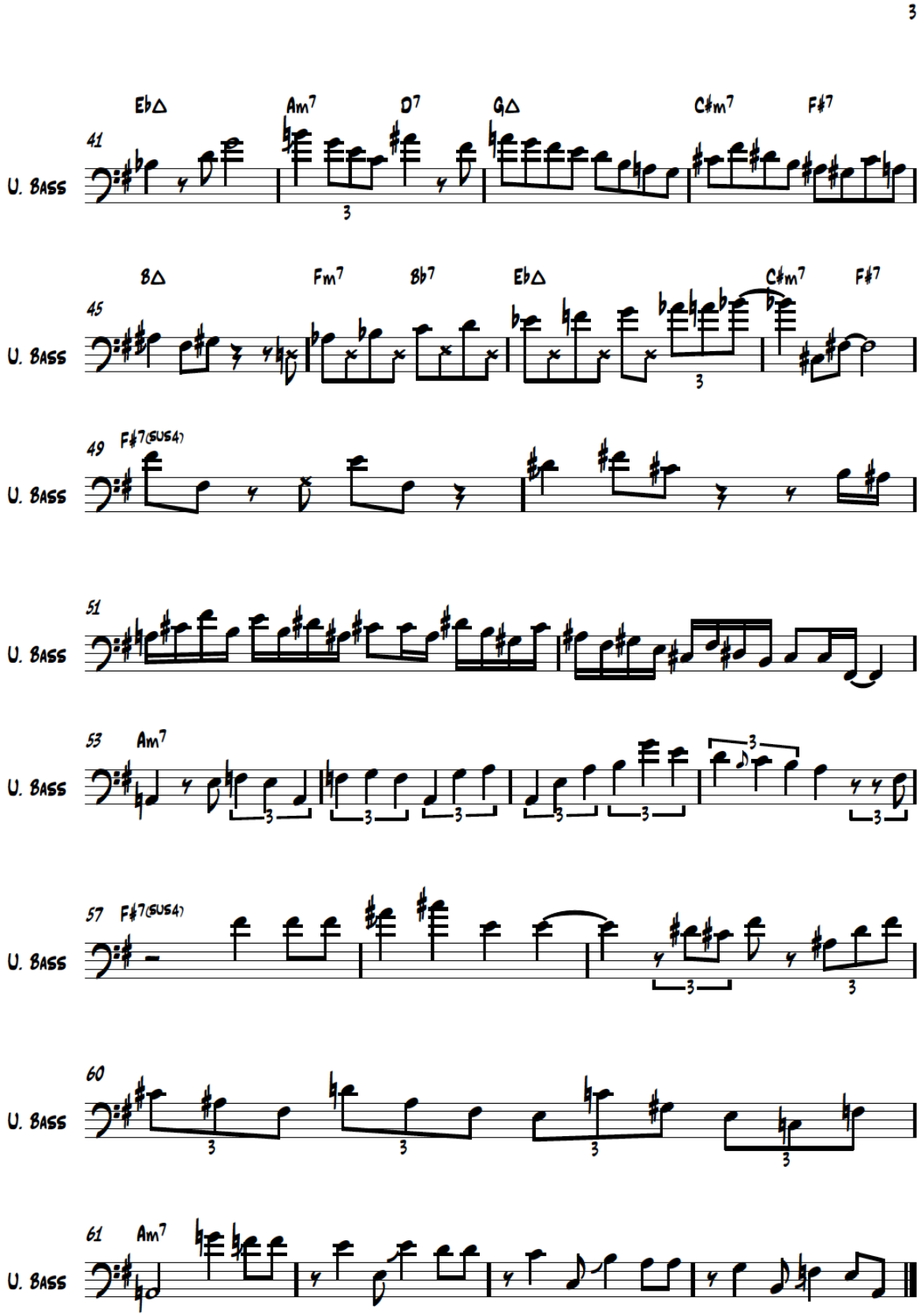

2
17
Bbm7
Ab7
B FLAT MINOR PENTATONIC-LOCRIAN SOUND
Gø7
C7(b9)
U. BASS
19
Fm
F7
P
U. BASS
M2
M2
21
Bbm7
Ab7
Gø7
C7(b9)
E AUG. TRIAD
U. BASS
25
Fm7
Ab7(♯4)
G7
C7
P
Fm7
Ab7(♯4)
MAJOR-MINOR TRIADS
G7
C7
U. BASS
29
Fm7
Ab7(♯4)
G7
C7
P
Fm7
P
C7
U. BASS

# Appendix G

**Patitucci's solo on Monk/Trane, from his recording Remembrance – Double Bass -**




2
21
GΔ
B♭7
E♭Δ
F♯7
BΔ
U. Bass
24
Fm7
B♭7
25
E♭Δ
Am7
D7
GΔ
C♯m7
F♯7
29
BΔ
Fm7
B♭7
31
E♭Δ
C♯m7
F♯7
33
BΔ
D7
GΔ
B♭7
35
E♭Δ
Am7
D7
37
GΔ
B♭7
E♭Δ
F♯7
39
BΔ
Fm7
B♭7


3
41
E♭△
A♭m7
D7
G△
C♯m7
F♯7
U. Bass
45
B△
Fm7
B♭7
E♭△
C♯m7
F♯7
U. Bass
49
F♯7(SUS4)
U. Bass
51
U. Bass
53
Am7
U. Bass
57
F♯7(SUS4)
U. Bass
60
U. Bass
61
Am7
U. Bass