

***Developing new sonic landscapes for improvisation and composition by extended techniques for saxophone such as overtones, timbral fingerings and multiphonics***

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## ***Introduction – The story of my research***

The initial plan for my research was to analyze Pat Metheny's concepts of improvisation over blues forms and incorporating his concepts into my improvisation. During my first year I thought this research would be a good idea until I had a major discussion about it with Paul van Brugge. The discussions conclusion was that this research wouldn't add a significant value to my artistry and that this analysis of Pat Metheny's concepts can be done, out of my own curiosity, in my free time and during my main subject lessons, if I really wanted to do it so badly. Since Paul is both jazz and classical composer in the 21<sup>st</sup> century and he have seen and experienced the development of music, he suggested me to get into extended techniques for saxophone which would give me a significantly bigger value as a performing artist, saxophonist and composer, in this 'modern' world. At first, I was hesitant towards extended techniques for saxophone because I heard they were extremely hard, but after I came to peace with the idea I was able to start seeing some of the benefits extended techniques could provide me.

The question that I formulated and led me to find answers and start my journey was the following:

**How can I develop new sonic landscapes for improvisation and composition by extended techniques for saxophone such as overtones, timbral fingerings and multiphonics?**

The limitation to three techniques is a result of foreseeing, during the course of this research, that the initial focus on more techniques, as was in my original plan, was not reachable and too broad. I also figured out that two of the techniques are related to each other in concepts of sonic imagination and governing principles happening within my oral cavity which gave extra meaning towards this limitation. For example, overtones serve as a good preparatory tool towards the understanding and completion of multiphonics.

My research is divided into two cycles. In the first cycle, due to the characteristics of the composition (Delta City Blues) from my reference recording, I was wondering how could I highlight its characteristics in improvisation. The melody of this composition incorporates overtones as a melodic sonic tool. In my reference recording I didn't incorporate any overtones in my improvisation. The idea of incorporating timbral fingerings was born due to the concepts I heard Michael Brecker, who wrote the composition as well, regularly incorporate in his improvisational lines. The main question at this point was how to incorporate overtones and timbral fingerings into my own concepts of improvisation. In order to reach this goal, I had to first find exercises and charts and practice them. After I got to a better insight into overtones and timbral fingerings, I had to come up with exercises and charts of my own. The findings represent my own way of thinking and with the help of these I got to the written out solo on Delta City Blues. The reason I wrote the solo out was in order to see which notes I found the most convenient for overtones and timbral fingerings to apply to, especially in a C blues form situation. The solo can have the function of an etude as well.

The outcome of the first cycle gave me a better understanding of overtones, especially on governing principles happening in my oral cavity while producing them, my own chart of timbral fingerings and formulation of new ideas towards incorporating them into improvisation. The chart might not be the most extensive one I could provide, but it represents the fingerings that I found and that work for me. It also gave me new rhythmic possibilities in my improvisation, since I would never double notes in a conventional improvisatory situation. Most importantly, as I mentioned before, I managed to highlight the characteristics of Delta City Blues.

The second cycle is about multiphonics and incorporation of them in a jazz quartet. This cycle was a big and more extensive one. Incorporation of multiphonics into improvisation is not new to the world of jazz related music, but notated material (compositions) with them is, since musicians used them mainly as a sonic tool for improvisation. In comparison with the classical world, where many composers tried to notate and incorporate them into compositions, the jazz world still lacks notated material. There is not one composition I would have come across, during my six years of study at Codarts, that would incorporate multiphonics. Also the music that I listened to didn't incorporate them. Therefore, my goal and intentions were to create material myself.

For this cycle I had to do an extensive desk research in order to gather as much information as possible and later on experimentation with the findings and concepts in order to formulate my own.

Since there are too many steps to describe in depth towards the creation of my notated material (composition), at least for this introduction, I will only give a brief description of them to get an idea.

The steps I took were the following:

- 1) Getting to know what multiphonics are, how to learn them and how they are being produced.
- 2) Applying the knowledge learned on the production of multiphonics and creating a personal library.
- 3) Looking into the historical background on the usage of multiphonics in improvisation and composition.
- 4) Looking into the concepts of multiphonic performance practices of Bert Wilson, who seems to be the only saxophonist interested in incorporating them into a jazz harmonic concept. His performance practices and applications are presented in Boyd Allan Phelps's doctoral dissertation.
- 5) Transcription and notation of the multiphonics from my personal library.
- 6) Experimentation with combining the selected multiphonics into an order that will give me an appealing harmonic structure.
- 7) Placement of additional notes to the previous harmonic structure in order to highlight or manipulate a desired harmony or chord.
- 8) Creation of a composition named Roaming Thoughts.

I have to mention that making a catalogue of multiphonics and new ways of notation were not my intention or quest at all and were out of the scope of my research. Also spectral analysis of multiphonics falls out of this scope, since I was only interested in the clearly audible pitches that the multiphonics produced. I didn't pay attention to external composers' needs either, since I wanted to focus only on creating my own music and in the process reveal my own thoughts and methods of application.

Nowadays, there are many multiphonic charts available containing fingerings and their respective pitches, but relying on them is tricky because those are other saxophonist's findings and trying them out on different saxophones (brand, model etc.) might yield different results in pitches. These findings were crucial for my study, where I wanted to incorporate multiphonics as a harmonic structure, and are the reason why I transcribed myself performing the multiphonics in order to see which pitches are actually present with me.

Some other findings, maybe the most important, are that exploring the landscape of multiphonics and creating music with them require a very deep personal path. We have to take into account that what separates each and every one of us, saxophonists or composers alike, is singularity. This singularity includes many personal aspects on looking at music such as, in which musical contexts we apply the multiphonics, what gestures we want to highlight with them and what are our own aesthetic preferences.

As foreseen by Paul van Brugge, this research added to my artistic value enormously. The final result is a work of art and explores multiphonics in ways I never heard or encountered before (in a jazz composition). Dick de Graaf added that this concept might be revolutionary. Don't get me wrong, I'm not trying to say that I'm the first one to incorporate the saxophone as a harmonic instrument in a jazz quartet situation, because I can simply not be sure of that, but the concept most certainly yielded new ways of thinking and approaching multiphonics as a harmonic tool.

Now, after the completion of my research, I'm aware of the fact that my composition might not be performable by others but this fact only highlights the sonic phenomena of the multiphonics.

My only, sincere hope with this research is to inspire future generations, as I was inspired by other researches. Keep in mind that creativity has no boundaries.

## *First Intervention Cycle*

### **Implementation of overtones and timbral fingerings into improvisation**

#### **Reference recording**

**Track 01 Reference recording Albert Kerekes & friends - Delta City Blues (Michael Brecker);**  
<https://goo.gl/GHPft8>

#### **My own feedback:**

**Theme:** Not all the notes were on their right places. This is because the song consists of lots of overtones which are very hard, sometimes even tricky to reach. If you change the position of your throat and tongue or you put too much pressure on the reed even a little bit, another note comes out or it doesn't come out at all.

Overtones are considered as a part of extended techniques. In the reference recording I could play them already good, but I know that back then I didn't completely understand them. Sometimes it was just luck that I was able to hit the right note. But it's also true that at the point of performing this song I was very tired already.

#### **Improvisation:**

I played lots of things, everything was good, except the fact that I didn't use any of the overtones, which I see now is a pity. I've used some false fingerings but mainly on one note, middle C in this case.

#### **Feedback from others:**

**Adam Taylor:** "It is a really strong start and it is very relevant to your research which is good. The reference recording shows that your focus is clear and quite specific."

**Ephraim Neves:** "The theme sounds good and so does your solo. The only thing I found a little disappointing is that you don't use the gimmick of the theme, the large intervals (10ths etc) in your solo."

#### **Jarmo Hoogendijk:**

"Great recording!"

The big intervals in the theme: is that something you could expand on in your improvisations as well? You could expand your language AROUND your ability to play big intervals with conviction and musical sense."

## Data collection

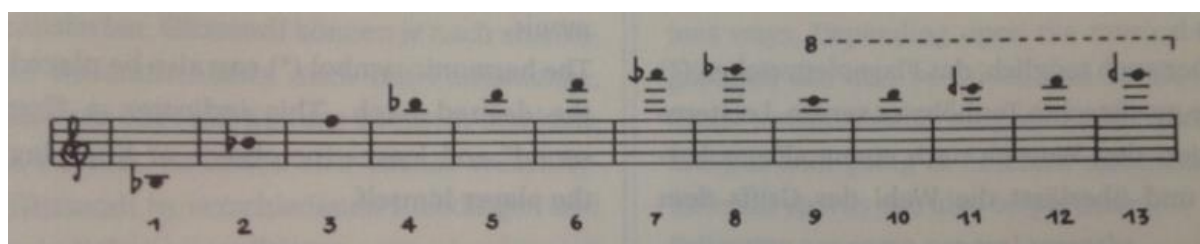
### Overtones

What are overtones?

On most musical instruments, when we play a single note, we are hearing the presence of at least four other notes at the same time. These notes are called overtones. There are also other words for describing overtones such as harmonics and partials, but I will stick to the word overtones.

Overtones are considered as a relatively easy technique to produce on the saxophone. They are achieved by overblowing fundamental notes. The spectrum of overtones, the saxophone can produce, contains of even and uneven overtones. This spectrum of overtones can be achieved and played with the help of embouchure change (more tension) and adjustment of the oral cavity (throat). Generally, the tension of embouchure increases when performing high overtones. The higher the overtone is to be performed, less sound quality is present. The quality of sound becomes more 'airy' and colorless. As mentioned earlier, overtones are achieved by overblowing fundamental notes. These fundamental notes represent the four lowest ones on the saxophone, Bb, B, C and C#, and are the easiest to overblow overtones on. In principle, overblowing on lower sounding instruments such as tenor and baritone saxophones is easier than on higher sounding instruments (Weiss & Netti, 2010).

Here is a diagram showing the overtone spectrum (up till the 13<sup>th</sup>) based on the fundamental note of Bb:



(from Weiss & Netti, 2010 p. 171)

For a better understanding of overtones, I turned towards finding videos which discussed them. A video that caught my attention in particular was Harvey Pittel (part 8) Matching Overtones:

**Track 02 Harvey Pittel (Part 8) Matching Overtones - Presents the Sax Teachings of the Master, Joe Allard;** <https://goo.gl/CqHSJ9>

Matching overtones is an exercise which matches the overtones with the normal fingered notes and was presented to Harvey by Joseph Allard, a legendary saxophone teacher who, next to classical saxophonist, also taught some of the famous jazz saxophonists such as Michael Brecker, Bob Berg, David Liebman and Eric Dolphy, just to name a few.

The whole purpose of this exercise is to get a better understanding of what is happening in your body and how to position your throat and tongue. Positioning the throat and tongue during playing the saxophone are close to the position while singing. That's why it is proposed that imagining the note in advance in your head might help you reach the note faster and more accurately. This exercise should help you improve the intonation as well.

Here is me trying out the exercise:

**Track 03 Matching Overtones;** <https://goo.gl/VZCvuM>

Additional exercises I found on Dave Lineman's website. Saxophone Overtone Exercises by David Demsey (adapted from Joseph Allard):

## Saxophone Overtone Exercises

Instructions: 1. Finger notes in parentheses; play harmonics  
2. Start each note with the breath, not the tongue  
3. Practice slowly, taking time for each pitch to resonate

David Demsey  
(adapted from Joseph Allard)

The Overtone Series

1: Fundamental 2: 1st Partial 3: 2nd Partial 4: 3rd Partial 5: 4th Partial 6: 5th Partial 7: 6th Partial 8: 7th Partial

2:1

3:2

3:1

3:2:1

4:3

<http://davidliebman.com/home/wp-content/uploads/2015/02/demsey-1.pdf>

**Track 04 Saxophone Overtone Exercise (2:1) – Demsey;**  
<https://goo.gl/3PswjY>

**Track 05 Saxophone Overtone Exercise (3:2) – Demsey;**  
<https://goo.gl/wjXJtz>

**Track 06 Saxophone Overtone Exercise (3:1) – Demsey;**  
<https://goo.gl/ejS4lN>

**Track 07 Saxophone Overtone Exercise (3:2:1) – Demsey;**  
<https://goo.gl/Gi8blP>

**Track 08 Saxophone Overtone Exercise (4:3) – Demsey;**  
<https://goo.gl/2sYiYk>

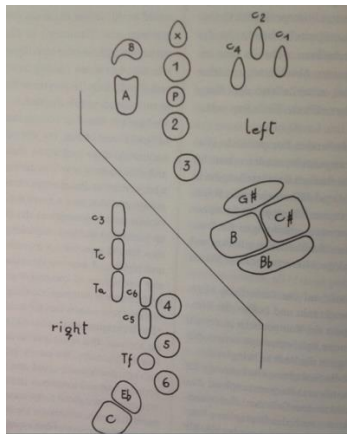
**Reflection on the exercises:** I have to mention that playing the exercises without any articulation, as suggested by Demsey, was extremely hard! As you can hear I had a struggle with the low notes. Actually I never tried to play them without articulation before. I thought that the low notes must have been one of the easiest things to play but I was wrong! I realized that I need to put in much more time into figuring out the position of the throat and tongue playing those notes.

## Timbral fingerings (false fingerings)

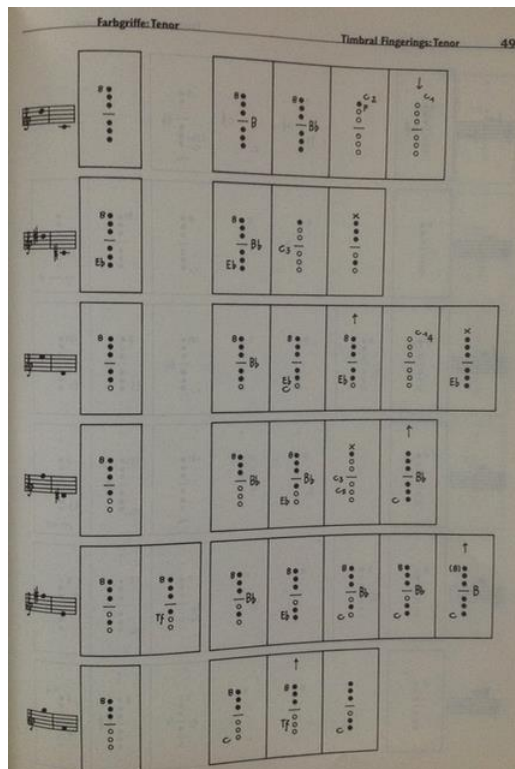
What are timbral fingerings?

In brief, in addition to a standard fingering of a note, additional fingerings exist. These fingerings make it possible to play a certain note with different colorings. These fingerings usually change the pitch of a given note by an eighth tone. Deviations of pitch, from the original notes, are generally very small and can vary according to every saxophone's built and type. A note to composers regarding incorporation of timbral fingerings into compositions is to work in close collaboration with the saxophonist (Weiss & Netti, 2010).

First, for a better understanding of fingerings, below is a saxophone fingering diagram provided by Weiss & Netti (2010, p. 10):



And here are some examples of timbral fingerings provide by Weiss & Netti (2010 p. 49):



Explanation:

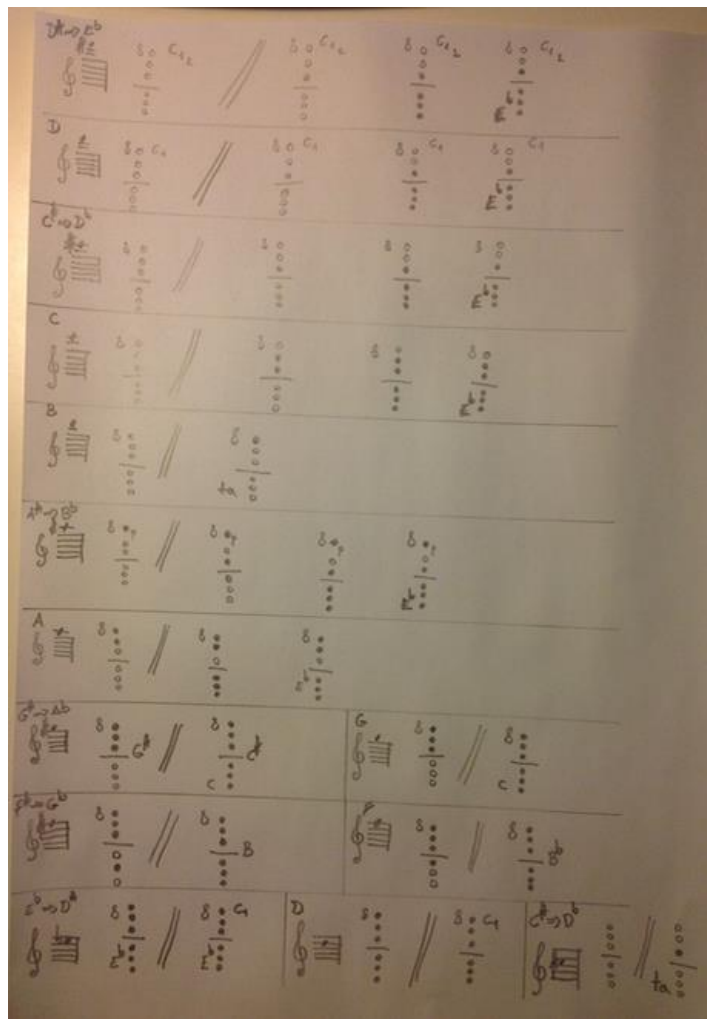
- The black dots indicate the fingerings pressed and the white (open) dots the fingerings left open.
- The fingering on the left side indicates the normal, conventional fingering, and the fingerings on the right the timbral fingerings.
- The list offers a choice up to maximum of five timbral fingerings.
- Arrows indicate the deviation of pitch, from the original pitch, by approximately eight tone higher or lower.



## Interventions

The timbral fingerings suggested by Weiss & Netti were a good reference but most of them are too impractical to use because if I would like to use them in a fast improvisational line they incorporate too many hardly reachable additional keys that have to be pressed. Therefore I thought of designing my own chart of timbral fingerings that would work for me and my instrument (tenor saxophone). These findings are a result of experimentation.

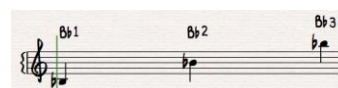
**Track 09 My own timbral fingerings:** <https://goo.gl/sAebPO>



Notes:

- I chose not to make fingerings for all the notes of the saxophone. This is because below A1 and above D#3 timbral fingerings are not commonly used by jazz saxophonists.

- Numbers 1, 2 and 3 refer to the octave in which a pitch is placed and being performed:

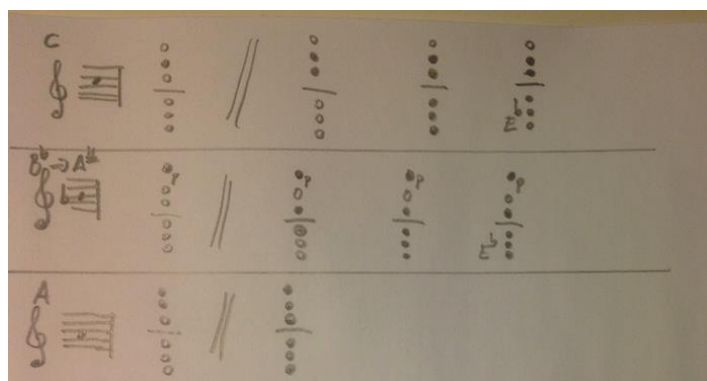


- All the pitches are written in the key of the tenor saxophone, Bb in this case.

Findings:

- I found that overtone fingerings can be applied as timbral ones. This can be seen on notes G#2, G2, F#2 and F2.

- From practical reasons, as it will be later on shown in my written out solo on Delta City Blues, I would suggest using timbral fingerings only on the following notes:



- C3
- Bb3
- A2
- G#2
- G2
- F#2
- F2
- C2

I also came up with some exercises incorporating overtone timbral fingerings.

Here is a C bebop scale incorporating overtone timbral fingerings:

The low notes Bb, B and C serve as fundamental notes and fingering for the upper notes that are actually being produced.



**Track 10 C bebop scale incorporating overtone timbral fingering;** <https://goo.gl/wNXJTW>

Since, in jazz improvisation, we work a lot with embellishing certain important notes of the chord I wanted to see what I can do with the overtone timbral fingerings over a C7 chord.

This is the result: Since the first four notes of the overtone spectrum include only the octave fifth and an octave again, I was able to place embellishments only around the tonic and the fifth degree of the C7 chord.



**Track 11 Embellishment of the tonic and fifth degree of the C7 chord;** <https://goo.gl/QPBXus>

Since we also use lots of chromatic movements, the following two exercises were created:



**Track 12 Chromatic movement from Bb to C;** <https://goo.gl/TP6Va8>



**Track 13 Chromatic movement from Bb to C#;** <https://goo.gl/9NY9UZ>

With all my findings on timbral fingerings and overtones I was ready to incorporate them into my concepts of improvisation. Due to the lack of written out material, except of transcriptions of famous saxophonists by other people, I thought it would be a good idea to document my findings in a written out solo form so that future students interested in these techniques can get inspired by my work.

As I mentioned before, my suggestion of the usage of only eight timbral fingerings on those specific (eight) notes, are the most practical mainly because I found these notes most convenient to connect with normal fingerings.

Below is my written out solo I created. Note that it is written in Bb for tenor saxophone and this is because other saxophones might not get the same results. Timbral fingerings will appear only on those, before mentioned, eight notes.

## WRITTEN OUT SOLO ON DELTA CITY BLUES

ALBERT KEREKES

♩ = 200

2

6

10

14

18

22

Chord symbols: C7, F#7, F7, B7, Em7(b5), A7, Dm7, G7ALT.

2 26 C7 B7

30 C7 B7 Bb7 F#7

34 F7

38 C7 Em7(b5) A7ALT.

42 Dm7 G7ALT.

46 C7 Eb7 Ab7 Db7

50 C7

**Note:** The + sign serves as a tool to notate timbral fingerings. I've adapted this concept of notation from other transcriptions that I've encountered during the course of my study.

## Recordings of the final result and conclusion

In order to hear the difference between the incorporations of overtones and timbral fingerings and the non incorporation of these, I recorded both choruses of the solo separately.

**Track 14 Solo - Chorus one (without any overtones or timbral fingerings);** <https://goo.gl/OJ0zPU>

**Track 15 Solo - Chorus one (with overtones and timbral fingerings);** <https://goo.gl/K62VDk>

**Track 16 Solo - Chorus two (without overtones and timbral fingerings);** <https://goo.gl/zKGAwj>

**Track 17 Solo - Chorus two (with overtones and timbral fingerings);** <https://goo.gl/NEch2t>

### Final recording:

**Track 18 Final recording (two choruses on Delta City Blues);** <https://goo.gl/ahBIvP>

### Feedback from Jarmo Hoogendijk and Dick de Graaf:

#### Dick de Graaf:

“That sounds really nice. The false fingerings on the note of c sound good, also in the upper octave. Also g – a – g – f# – g come out pretty well. I miss a little bit the dynamics that you hear in the playing of for instance Liebman and Steve Grossman. These guys put more accent on the false fingerings. Also Brecker was a specialist. I also suggest to take some time to develop weird sounds in a rubato rhythm using some of the cracks that I included in the attachment. I mean this type of playing in the first place as a training tool, but it can slide be put in practice as an intro or outro of a tune, or just as a way to play rubato over any (odd) rhythm.”

#### Jarmo Hoogendijk:

“This new recording shows well what you are trying to achieve, keep going on. This might be difficult (or not) but try to give motivation for the artistic choices you are making: why a certain extended technique on a certain note in an improvisation. It wouldn't surprise me if, after all, this will also improve your understanding of the blues (one of your initial goals) and give you more tools to express your feelings (blues) through the instrument by using extended techniques on certain notes!”

### Conclusion

I'm really happy with the result of the first intervention cycle. Not only did I get a better overview of the overtones and timbral fingerings, I also created videos and material for future saxophonists to draw from. The fingerings I used in the solo gave me new possibilities, especially rhythm wise. In a normal conventional improvisational situation, I would never double notes. Doubling notes gives a whole new rhythmical scope. With these two techniques I also managed to highlight the characteristics of Delta City Blues which I think is extremely important since every composition has its specific characteristics and not everything fits over them improvisation wise.

## ***Second Intervention Cycle***

### **Multiphonics and application of them into my composition for jazz quartet**

I have been learning and studying conventional jazz saxophone playing for eight years, and I realized that it didn't give me the fullest artistic enjoyment, like the one I had in the beginning of my studies. In order to reach this enjoyment again, and also trigger my creativity, my intentions therefor laid in finding new possibilities to broaden my sonic-sound resources. Due to this curiosity I was able to stumble upon one of the extended techniques called multiphonics.

Multiphonics are something I heard a few musicians use in practice but I didn't know what they were. Therefor I had to do a little desk research before I could start exploring them.

What are multiphonics?

The term multiphonics is used to describe a simultaneous performance of multiple pitches (Murphy, 2013). In general, all woodwind instruments are capable of producing them, so the saxophone is no exception. The saxophone family also has a very rich palette of multiphonic sounds at their disposal. In order to accomplish them there are two possibilities: one is by singing a note next to the one played, or by special fingerings. When using special fingerings adjustment of embouchure, throat and air flow may apply (Taylor, 2012).

Next two questions occurred after I read the definition: From which literature I should draw from and how to learn multiphonics?

The first step I took was through my saxophone teacher at the time, Nils van Haften, who contacted Ties Mellema (great classical saxophonist) and asked him which literature to draw from and how to learn them.

Ties suggested two books:

1. Hello Mr. Sax, Londeix.
2. Sons multiples saxophones, Daniel Kientzy.

Ties added that: "This book is the most complete and for all saxophones".

What Ties suggested about learning multiphonics was the following:

"If a multiphonic doesn't work, it could mean two things: you have to study more or try another one".

The first book I examined was Jean-Marie Londeix's Hello! Mr. Sax or Parameters of the Saxophone (1989). While examining the book I realized that, although it's a great resource for several techniques, it didn't include much description on how to produce multiphonics except that next to a requirement of special technique of fingerings sometimes embouchure changes are required (Londeix, 1989). The book also didn't include multiphonics for the baritone saxophone which was the instrument I wanted to focus on.

After finding the second book Daniel Kientzy's *Les Sons Multiples* (Paris: Editions Salabert, 1982), it seemed at first that this book was a much better resource of multiphonics and this was mainly because it included multiphonics for the baritone saxophone as well. Even though the book includes the baritone saxophone its description on production of multiphonics in the explanatory note is unclear.

In addition to those two books suggested to me I've seen a great potential, as already earlier in the first intervention cycle, in the book from Marcus Weiss & Giorgio Netti *The Techniques of Saxophone Playing* (2010). This book is a very intriguing one since it's written by a classical saxophonist (Weiss) collaborating with a composer (Netti). Like the book by Kientzy, this book also provides numerous multiphonic fingerings. The only difference is that Weiss and Netti included a very nice summary on the performance of multiphonics and some practice tips. They explain what happens during the production of multiphonics while applying special fingerings and their view of them.

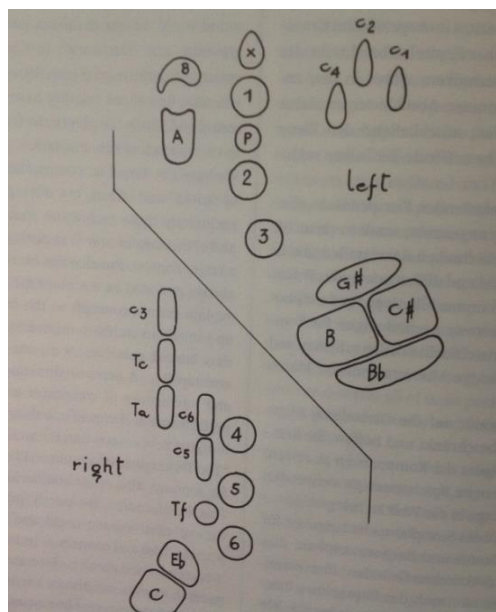
Firstly, Weiss & Netti describe multiphonics as complex sounds, rather than chords. (Weiss & Netti, 2010)

They also describe what happens while performing multiphonics.

When applying special fingerings there is usually a hole or break at a certain place in the tube, unlike when playing 'normal notes' where all holes are closed, which creates a vibrating relationship between the two simultaneously oscillating tubes. In this case special fingerings indicate that the saxophone is subdivided into two separate tubes. The upper tube is seen as a combination from the mouthpiece till the break which usually determines the lowest (fundamental) tone in the multiphonic and the lower tube is seen as the core or body of the saxophone and functions as a filter of that fundamental tone. The fundamental tone can be easily recognized from the fingering and the other tones occurring next to it are usually slightly altered partials of the natural overtone spectrum of that fundamental tone. (Ex.1) Taking in account the previous statement we can see a large number of multiphonics as a distorted overtone spectrum. When the lower (filter) tube becomes longer than the higher tube, the fundamental tone is not necessarily the lowest one any more. (Ex.2) (Weiss & Netti, 2010)

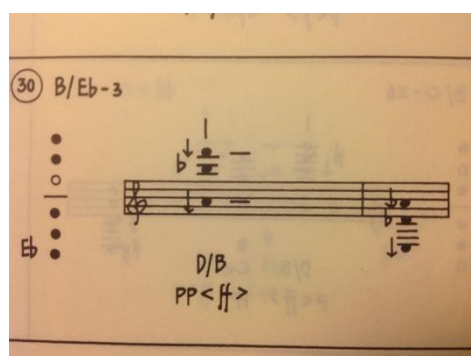
For a better understanding of the examples below is a saxophone diagram of fingerings from the book: (Weiss & Netti, 2010 p.10):

Left indicates the fingerings played by left hand and right indicates fingerings played by right hand.





Ex.1 (Weiss & Netti, 2010 p.105; Multiphonic n. 30)



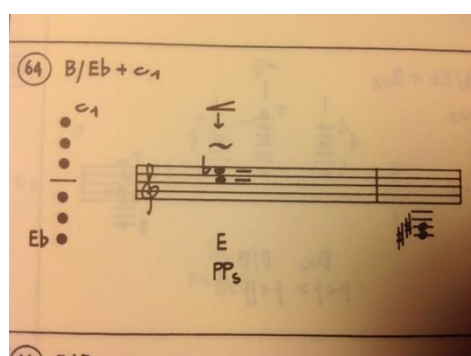
The black keys represent the notes fingered (pressed) and the white key the note left open.

In this example the tube breaks at the G note (not pressed note) which means that the upper tube's fundamental-lowest note according to the fingering becomes an A note. This can be seen in the picture as well.

The other two notes, as mentioned before, are the distorted versions of the fundamentals overtone spectrum. In the normal overtone series, the two other notes should be an A and an E, but in this case

there is a Bb and F.

Ex.2 (Weiss & Netti, 2010 p. 109; Multiphonic n. 64)



This is the special case including the longer lower tube which means that there is no break in between. As we can see almost all the notes are closed and according to the fingering we should get an Eb as a fundamental note but instead there is a C.

Some practice tips provided by Weiss & Netti (2010):

- Multiphonics require special embouchure position, lip tension and throat position.
- The entire sound of the multiphonic can be often opened by focusing on certain partials. If one can find the strongest partial of the total sound, one can try and enter through that partial.
- Low/fundamental tones and sounds are usually played by a sub-tone sound or with less lip pressure and mouthpiece. Fuller sounds with a larger spectrum are usually played by more lip pressure and open throat. High sounds are played by more lip pressure and a more closed throat (nasal).
- Generally, the notated dynamics below the multiphonic indicate how difficult the sound is to produce. If the dynamic is fixed at only one range, for example at pp or only f, production of the sound requires a high degree of accuracy from the embouchure. (See Ex.2 above)
- When coming across an unstable sound where for example the sound moves back and forth between the partials, one can affect it by very slightly closing the open key in the fingering. This movement or slight closure should stabilize the unstable sound. This method can be applied to narrow intervals as well.
- During conventional saxophone playing one learns to compress the air stream and direct the blowing in order to obtain a dense radiant sound. Some multiphonics require the exact opposite because the directed air stream automatically stresses out the stronger tones and suppresses the other ones. Therefore a less directed, weaker 'passive' or 'diffused' blowing is advised.
- It is advisable, while practicing, to include one's own thoughts and symbols for a better understanding and memorization of the particularities of creating individual multiphonics.



Although Weiss & Netti provided useful information on how to approach and practice multiphonics, I was wondering if there are any more easily understandable tips on how to learn and approach them. With this curiosity in mind I found an interesting doctoral essay by Matthew J. Taylor where he was interested in how saxophone educators in The United States and France teach extended techniques.

In brief, he compared methods and identify common ideas or practices that could be pedagogically useful by interviewing eight college level professors in The United States and three in France.

The study of his is focusing on four extended techniques. I was interested only in the part including multiphonics.

As Taylor (2012 p. 48) says, “each multiphonic presents its own set of challenges that must be overcome”.

In the end, mastery of studying multiphonics means understanding a set of governing principles: physiological and aural implications (Taylor, 2012).

Here are the tips and methods I found important and interesting (Taylor, 2012 p. 51-52):

- 1) Rhonda Taylor says the following: “I ask students to finger the multiphonic and voice the individual pitches: almost always, certain pitches speak more easily, and the challenge is to find a tongue/throat compromise position that allows the full multiphonic to speak.”
- 2) Marie-Bernadette Charrier takes Rhonda’s approach further and says the following: “Practicing multiphonics begins by isolating each pitch in the multiphonic, playing it, and memorizing each sound’s position (in the throat). The student must learn to control each pitch of a multiphonic independently, and for me, there is always one pitch that allows me to balance the multiphonic, and it is up to everyone to find that for him or herself.”
- 3) Geoffrey Scott Deibel confirms Charrier’s approach and adds: “Multiphonics are sometimes similar to altissimo in that you have to voice more towards a certain note to make the chord sound.”

I forgot to mention that the participants in Matthew’s essay were classically trained saxophonists. There was an interesting discussion, although not so much related to the actual production of the multiphonics, about what is the best time to introduce them to students. I think it’s very important from the pedagogical point of view to talk about these aspects.

There was a disagreement between the French and American participants, where the French suggested integration of the study of multiphonics already with beginning saxophonists, whereas American participants believe one should start working on them in early undergraduate degree. This disagreement can be explained by the logistical difference in music education between the two countries. Firstly, in The United States it’s not common to seek for private lessons and even less common to be trained as a beginner saxophonist by a college-level professor. In France, however, where students begin their solfeggio training early and enter conservatory at a young age, it is not uncommon for a college-level professor teaching them. In general French participants claim that introducing multiphonics in an early stage lead to a greater flexibility of the embouchure. Serge Bertocchi, who teaches first year students says the following: “Most multiphonics will imply a specific mouth-tongue position to be performed. The student will get the idea that he is not playing only with his fingers: sound production is an association of ear and memory” (Taylor, 2012 p.49).

## **Importance of equipment for production of multiphonics and the impact of using different saxophones (soprano, alto, tenor and baritone) on these techniques**

Professional level equipment in good working condition usually contributes to the success of production. If the saxophone, one is using for the production, is full of leaks or is out of adjustment it can affect the successful production and create potential problems such as problems with splitting partials. Despite these problems, one can make any setup work. The production might be easier on more open mouthpieces and softer reeds. What is important to take into account is that most of the multiphonic charts were created by using early Selmer Mark VI model saxophones which means that a large number of multiphonics often don't work on newer instruments (Taylor, 2012).

Fingerings of multiphonics, on certain types of the saxophone family, generally don't translate to other sizes of saxophones. When dealing with changes between the saxophones it is advised to turn towards experimentation and consultation with books such as Kientzy, Londeix and Weiss and Netti (Taylor, 2012).

Although it's generally not possible to translate fingerings to other sizes of saxophones the technique of production should be the same on all types of saxophones (Taylor, 2012).

## **Applying the knowledge learned on the production of the multiphonics and making a selection of multiphonics in order to create a personal library**

Since I'm not a classically trained saxophonist, who would probably look up multiphonics mostly for performance requirements of specific pieces, I thought it would be a good idea to make a selection and create a personal library of them for myself to draw from later on in the application of these.

Combined with Kientzy's and Weiss and Netti's charts, I went through 217 multiphonics that were at my disposal.

After loads of time spent on production and experimentation, the criteria for the selection of 22 out of 217 multiphonics was the following:

- Stableness (more or less stable)
- All partials were audible and clear
- The dynamic specter mainly low (with a few exceptions)
- Nice and interesting appeal to my ears

It is very important to highlight, for now, that at this point I wasn't concerned with the fact of getting the same partials or pitches out of the multiphonics, as they were written in the books, but rather with the actual production of them.

As it was advised by Weiss and Netti (2012), for a better understanding and memory of the particularities of creating individual multiphonics, I included my own symbols and thoughts in the notes next to every multiphonic.

For a better personal understanding, I made a sketch collection, and I copied/wrote the selection of 22 multiphonics down on a music sheet by hand in order to gain space for remarks.

### **The fingering chart I used to write down the fingerings**

The fingering charts are taken from Kientzy's *Les Sons Multiples*. I will be using his chart throughout this research on multiphonics because they seem to me the most convenient (Appendix 3).

Here is the first page, from my sketches collection on production of multiphonics, with the first six examples (for the others see Appendix 4):

NO. 1  
(Kinstry)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \end{matrix} A$

$\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  ← strongest note;  
- aim towards the A  
and you'll get the full  
sounding multiphonic!

NO. 2  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 7 \end{matrix} A$

(Kinstry)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - open throat  
- drop jaw → no embouchure  
pressure at all!  
② → target note

NO. 13  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \end{matrix}$

(Kinstry)  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$  → target the G  
- it's an octave of the C  
so adjust your throat position

NO. 17  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \end{matrix} E^b G$

(Kinstry)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - diffused blowing  
- less embouchure  
- imagine blowing inbetween  
the reed and mouthpiece!

NO. 20  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \\ 7 \end{matrix} A C_3$

(Kinstry)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - high throat position!  
- imagine playing in  
altissimo register

NO. 23  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$  FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \end{matrix} A C_3$

(Kinstry)  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$  same principle

**Note:** These examples above are written in the key of Eb because this is the key of the baritone saxophone.

Here are the recordings of my selected multiphonics:

**Track 19 Daniel Kientzy – Multiphonic No.1;**  
<https://goo.gl/OTzzm6>

**Track 20 Daniel Kientzy – Multiphonic No. 2;**  
<https://goo.gl/X01iFV>

**Track 21 Daniel Kientzy – Multiphonic No. 13;**  
<https://goo.gl/K21khQ>

**Track 22 Daniel Kientzy – Multiphonic No. 17;**  
<https://goo.gl/SDjgbZ>

**Track 23 Daniel Kientzy – Multiphonic No.20;**  
<https://goo.gl/GqhPWL>

**Track 24 Daniel Kientzy – Multiphonic No.23;**  
<https://goo.gl/t9xAXs>

**Track 25 Daniel Kientzy – Multiphonic No.28;**  
<https://goo.gl/nDe7KQ>

**Track 26 Daniel Kientzy – Multiphonic No.30;**  
<https://goo.gl/nfDruC>

**Track 27 Daniel Kientzy – Multiphonic No.31;**  
<https://goo.gl/B61u12>

**Track 28 Daniel Kientzy – Multiphonic No.35;**  
<https://goo.gl/41ksB9>

**Track 29 Daniel Kientzy – Multiphonic No.36;**  
<https://goo.gl/JEzLnu>

**Track 30 Daniel Kientzy – Multiphonic No. 37;**  
<https://goo.gl/njyXw1>

**Track 31 Daniel Kientzy – Multiphonic No. 59;**  
<https://goo.gl/U2EkOn>

**Track 32 Daniel Kientzy – Multiphonic No. 60;**  
<https://goo.gl/Wsrtht>

**Track 33 Daniel Kientzy – Multiphonic No. 67;**  
<https://goo.gl/KyjHti>

**Track 34 Daniel Kientzy – Multiphonic No. 66;**  
<https://goo.gl/dI7ZQW>

**Track 35 Weiss & Netti – Multiphonic No. 7;**  
<https://goo.gl/0BWrwq>

**Track 36 Weiss & Netti – Multiphonic No. 18;**  
<https://goo.gl/XBr91>

**Track 37 Weiss & Netti – Multiphonic No. 37;**  
<https://goo.gl/0gKS8E>

**Track 38 Weiss & Netti – Multiphonic No. 63;**  
<https://goo.gl/NPcfaz>

**Track 39 Weiss & Netti – Multiphonic No. 64;**  
<https://goo.gl/3dUaIO>

**Track 40 Weiss & Netti – Multiphonic No. 67;**  
<https://goo.gl/oQBwVZ>

## Conclusions on the production of multiphonics

The conclusions I could draw, with the help of the tips for production from the first chapter, were the following:

- Generally, when a multiphonic consists of partials that have an “open position” (this refers to intervallic wideness), like multiphonic No. 1 from Kientzy (see page 1 above), the easiest to reach that multiphonic is by focusing on the target or strongest note.
- All multiphonics require “diffused” or less direct blowing.
- Finding the right throat and embouchure combination is essential for every multiphonic.
- Some multiphonics, such as No. 20 from Kientzy, require a high throat position which translates to a throat position used while playing in altissimo register.
- Multiphonics take a great deal of time to master. Patience, experimentation and getting used to the sound and production are essential.

The conclusions are my own reflections on the process and they work best for me. Like Taylor (2012 p. 48) said, “each multiphonic presents its own set of challenges that must be overcome”. Therefore, pedagogically speaking, it’s very hard to generalize and pinpoint the right way towards production of the multiphonics. Tips on how to approach them are very useful, but the most essential part is for one to experiment with multiphonics, by adjusting throat, air and embouchure, and in the end find the way that works best for them.

## Historic background on the usage of multiphonics in composition and improvisation

Predictably, production of simultaneous sounds on woodwind instruments has been around since ancient times. Some examples of woodwind instruments that were used in those times include: Arabian Mijwiz (Arabic reed pipe), Greek Aulos and Egyptian Zummara (Aerophone). In Western music, however, the development of such techniques incorporated into compositions and improvisation only took place recently. The development started in the 70's in contemporary classical compositions and in jazz music, earlier in the 60's in the free jazz, avant-garde and free improvisational era (Snekkestad, 2016).

The first major classical work written for saxophone using multiphonics seems to be Edison Denisov's *Sonate* for alto saxophone and piano, from 1970. In jazz however, strikingly, exploration and usage of multiphonics in improvisation seems to go back into the early 60's, ten years before Edison Denisov's *Sonate*. Important examples of musician starting with application of multiphonics include John Coltrane, Pharaoh Sanders and Albert Ayler during the 60's; and Peter Brotzmann and Evan Parker later on in the 70's (Snekkestad, 2016).

The first use of multiphonics in jazz can be heard on John Coltrane's track *Harmonique* (track 26) from his album *Coltrane Jazz* (1961). Although Coltrane used only two multiphonics in the piece, he is considered as a pioneer in exploring the melodic capabilities of the multiphonics (Harrison, 2012).

Academically speaking, the first book exploring multiphonics for woodwinds was written by Bruno Bartolozzi, *New sounds for woodwind* (1967). Since his book doesn't provide much information on the performativity aspects of performing multiphonics, it was most probably meant to encourage classical composers to start using them in their compositions and give them inspiration towards understanding them. Even though the saxophone is not included in his book, it arguably stands in close relationship to the other instruments explored in the book which are clarinet, oboe, bassoon and flute (Snekkestad, 2016).

Since Bertolozzi, there have been many classical composers incorporating the usage of multiphonics in their works and the way they started using them changed drastically in the last forty years. As Weiss & Netti (2010 p. 57) say in their description: "What began as the use of opaque blocks of sound functioning as contrast or even interference within the flow of monodic music has developed, in certain cases, into material that has become fully integrated within the musical discourse".

This development can be seen in many ways. One of the earlier works such as Jidrich Feld's *Sonata* (1990) uses multiphonics almost entirely in the interest of creating a special effect, where he in the third movement requires more of a textural change to the fundamental note rather than getting specific partials to sound above that fundamental note. In this same manner of using the multiphonics as more of a timbral effect rather than a specific intervallic structure, works such as Sal's *Sax* (1995) and *Screaming 229a* (1996) were written by Joe Cutler. As blocks of sound, as mentioned by Weiss & Netti above, multiphonics can be found in works such as Edison Denisov's *Sonate* for alto saxophone and piano (1973), Nicolaus A. Huber's *Aus Schmerz und Trauer* (1982) and Ryo Noda's *Mai* (1975). They used multiphonics as blocks of sound interrupting the line of music. These blocks of sound mean for example connecting a monodic line with a multiphonic where the monodic pitch is also part of the multiphonic. Some other composers like Fuminori Tanada took a different approach towards the treatment of multiphonics. In his work *Mysterious morning III* (1996) Fuminori develops his descending theme of trills and tremolos in the middle voices of the multiphonic while the top and the bottom notes always stay the same. His composition is a good example of isolation of single pitches within the multiphonic. Another example of composition focusing on common pitches between multiphonics is Luciano Berio's *Sequenza VII* (1969). Other work such as Christian Lauba's *Neuf Etudes*, movement *Savane* (1996) features a usage of multiphonics of various types in order to create an ever contracting set of intervals throughout his piece and by applying these creating an illusion of a melodic line (Harrison, 2016).

Seemingly the only written resource for the application of multiphonics in the genre of jazz is Boyd Allan Phelps's Doctoral Dissertation entitled *A Thesaurus of Saxophone Multiphonics and a Guide to their Practical Application* (1998). The dissertation is based on a close collaboration with clarinetist, saxophonist and composer Bert Wilson who was a master in multiphonics, also in extended techniques in general, and is recognized as a major contributor to the art of modern saxophone performance, incorporating multiphonics into improvisation and composition.

Boyd's intentions, with this study, lied in cataloguing the usage of multiphonics alongside conventional jazz harmony, serving for both performers and composers in order to give a reference towards evaluation of specific multiphonics and their chordal implications. Moreover, the study offers a conceptual harmonic ordering of the saxophone multiphonics potential and wishes to encourage performers and composers into the use of these within a tonal style of music. This concept is mainly drawn from the artistic practice of Bert Wilson.

As mentioned earlier where Weiss & Netti think of multiphonics as complex sounds, rather than chords, Boyd disagrees with their statement. He explains that there has been a general confusion towards the usage of multiphonics by contemporary composers and performers. He states that while virtually all published material and studies organize multiphonics according to peculiarities of execution, fingering position and pitch, composers and performers failed to discuss multiphonics according to their true nature, as chords (Phelps, 1998).

While the timbre of multiphonics is often complex and is a result of multiple spectra being produced, thinking of multiphonics as chords and application of them alongside conventional jazz harmony might be problematic. The majority of multiphonics has intonation issues compared to tempered music situations, making the number of perfectly tuned multiphonics that would fit into the context of jazz harmony few. How Phelps tries to get around this problem is by willing to ignore these intonation problems, suggesting that multiphonics have rather a timbral nature instead of requiring an exact tuning (Snekkestad, 2016).

## **The concepts of multiphonic performance practices of Bert Wilson**

As mentioned before, Boyd Allan Phelps's dissertation is based on a close collaboration with Bert Wilson. The whole study is based on Wilson's findings throughout his career and present multiphonics that were found, by him, the most reliable and had a tonal application. Other saxophonist might not get the same results of production of the desired sonorities as Wilson did, but this is due to the fascinating and mysterious nature of producing multiphonics where the factors of variables such as equipment and personal predispositions are present.

Wilson created three categories of tonal multiphonics and added sub-sets to each category (Phelps, 1998):

1) Split tone multiphonics (two pitches sounding simultaneously)

Sub-set A: Multiphonics that generate pitches at an intervallic relation of sixth and sevenths.

Sub-set B: Lip trills using multiphonic fingerings that generate two predominant partials and embouchure movement in order to create a tremolo effect.

Sub-set C: Contrapuntal application of split tones (playing melodic patterns of partials while sounding their shared upper partials).

2) Double stops (containing two partials from the same natural harmonic series)

Sub-set A: Fixed double stop multiphonics (using standard fingering)

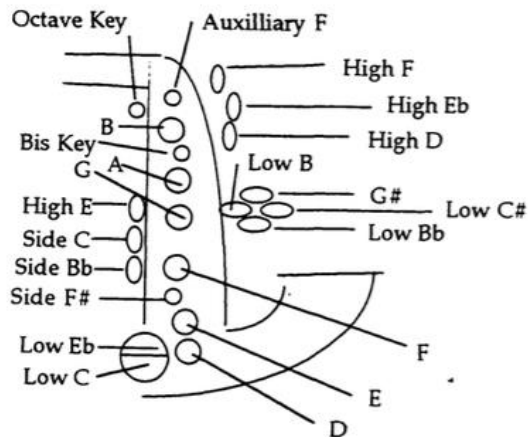
Sub-set B: Contrapuntal double stop multiphonics (movement in contrary motion)

3) Multiple chord tone multiphonics (three or more pitches)

Sub-set A: Fixed multiphonics generating three or more pitches.

Sub-set B: Contrapuntal multiphonics (chord tone multiphonics in which additional partials can be played)

For the understanding of examples, below is the graphic that was used to describe the fingerings (Phelps, 1998 p. 10):



## Split tones

### Sub-set A: Multiphonics that generate pitches at an intervallic relation of sixth and sevenths

Producing split tones require selected fingerings employed in the second and third octave of the saxophone. They are two tones sounding simultaneously containing two predominant pitches that, by the intervallic relation, define a key center or tonality. Sometimes embouchure changes might be applied to help the sonorities to be realized (Phelps, 1998).

Example 1 (Phelps, 1998 p. 18):

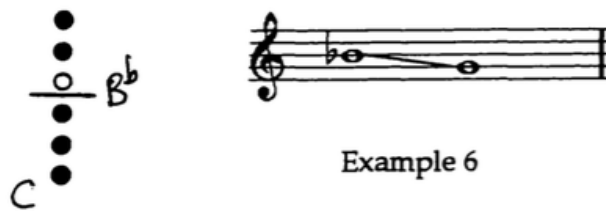


As we can see, although the fingering suggests that an A note should sound as a fundamental note, the open E key (or vent as Phelps describes it) additionally breaks the tube and dominates the sonority as a fundamental. When applying embouchure change such as lowering it, a C note will sound defining a key center or tonality of C.

### Sub-set B: Lip trills

Lip trill is a technique commonly used by jazz saxophonists. Although it does not produce two or more pitches occurring simultaneously Wilson puts it under the discussion of multiphonics as an extension of the split tone technique. The lip trill is achieved by venting a fingering (leaving open a key) that produces two sets of harmonics alternating with each other. It is an effect close to the tremolo (Phelps, 1998).

Example 6 (Phelps, 1998 p. 22):



Example 6

### Sub-set C: Contrapuntal application of split tones

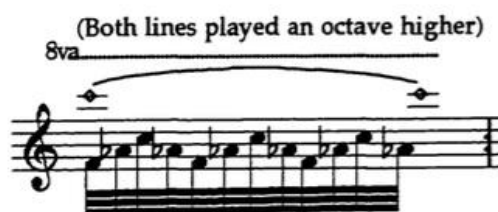
This practice involves sustaining a pitch that is shared in the upper partials of the fundamental pitch while rapidly arpeggiating a minor triad on this fundamental pitch (Phelps, 1998).

First is an example of the partial; Example 29 (Phelps, 1998 p. 28):



Example 29

Followed by the minor triad application; Example 32 (Phelps, 1998 p. 29):



Example 32

Wilson suggest the usage of minor triads on notes F, E, Eb and D. He finds these most dependable and responsive on the saxophone.

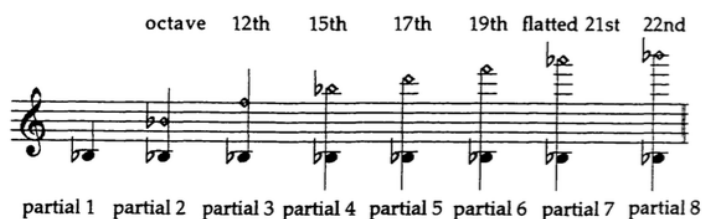


## Double stops

### Sub-set A: Fixed double stop multiphonics

The term double stop most commonly derives from the technique of playing two notes at the same time and is used by string players (Phelps, 1998). The examples that Wilson provided Phelps are actually related to the overtone or harmonic series of a fundamental note on which I worked in my previous cycle. The only difference is that here a production of two notes at the same time is necessary.

Example 40 (Phelps, 1998 p. 34):



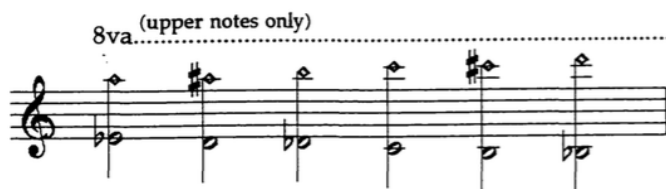
Example 40

Examples of Bert Wilson using double stops can be heard on track 1 (Endless Fingers) and track 6 (Love Heals) from his album Bert Wilson & Rebirth – Endless Fingers (Arabesque Recordings, 1997).

### Sub-set B: Contrapuntal double stops

This concept is based on the previous usage of two notes sounding simultaneously only, as the name already suggests, with an extension of applying a contrapuntal approach (Phelps, 1998).

Example 47 (Phelps, 1998 p. 38):



Example 47

This example might be a bit confusing at first, since if we look at the first note and its partial, there is an irregularity in the pitch of the overtone series. In a normal situation where the fundamental note is an Eb the 3rd partial should be a Bb. In this case there is an A which raises the question, why is there an A?

This is due to the enormous flexibility in intonation in the upper range of the saxophone where the upper partials can be manipulated. This technique is considered as a difficult one and can be realized through patient practice of the exercise below (Phelps, 1998):



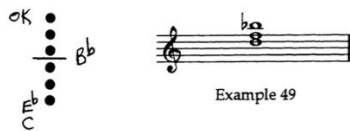
Example 48

## Multiple chord tone multiphonics

### Sub-set A: Fixed multiphonics

Of all previous concepts this concept is the easiest to interpret as chords since it includes three or more pitches. A great deal of tonal imagination is necessary to produce these multiphonics. In order to boost this tonal imagination Wilson suggests to, first play the components of the multiphonic on the piano while holding down the sustain pedal, and later play them on the saxophone. This method should help the saxophonist aurally define the components of the desired sonority (Phelps, 1998).

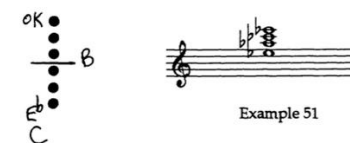
Here are some examples of multiple chord tone multiphonics (Phelps, 1998 p. 41):



Example 49



Example 50

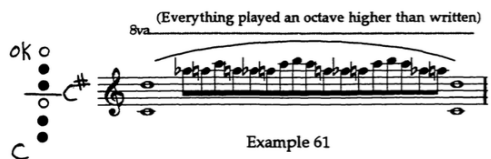
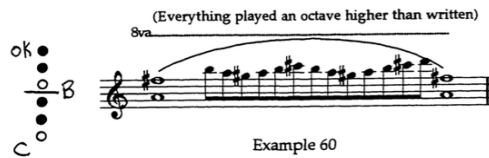
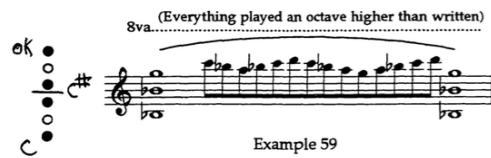


Example 51

### Sub-set B: Contrapuntal multiphonics

In addition to the fixed multiphonics, Wilson extended these with a contrapuntal application where the saxophonist should first play the multiphonic and later on purposely move notes in between, around and above by changing the embouchure pressure (Phelps, 1998).

Examples of such practice (Phelps, 1998 p. 45):



## Application of multiphonics as part of a chordal structure by Phelps

Phelps documented Wilson's multiphonics as a thesaurus and presented ways of how the multiphonics can be incorporated within a jazz harmonic context. His intentions were to give an overview and useful reference for evaluation of harmonic and chordal implications of specific multiphonics in order to serve as a model for further development by future performers, composers and teachers. He documented the notes deriving from the multiphonic with hollow note heads, while the darkened tones represent the chord tones which are not being played but serve as a tool for defining the chord. Moreover, the examples of chords provided are shown in close position in order to assist with the recognition of a certain multiphonic as a sonority within a given chord. The association between each multiphonic within a given chord is presented in the following ways (Phelps, 1998):

- The multiphonic components include notes that can be associated with the triad of the chord and share at least one common note with this triad.
- The multiphonic is an extension to the triad of the chord.
- The components of the multiphonic represent non chordal tones which can be seen as upper structure or timbral extension, for example a #11, 9 or 13 of the given chord.

Here is an example (Phelps, 1998 p. 51):

**C Major Chords**

$C^6$     $C^{Maj7}$     $C^{Maj7} \begin{smallmatrix} (13) \\ (\sharp 11) \\ (9) \end{smallmatrix}$

Fingerings:

ok ●  
E ○

ok ●  
C ○

ok ●  
B ○

ok ●  
C ○

Multiphonic Application:

The image shows musical notation for C Major chords and their multiphonic applications. At the top, three chords are shown on a treble clef staff:  $C^6$ ,  $C^{Maj7}$ , and  $C^{Maj7}$  with extensions (13), (11), and (9). Below this, four fingerings are listed, each with a circled 'ok' and a vertical stack of notes (solid black dots for natural, open circles for flat). The fingerings are: 1) E (open circle), 2) C (open circle), 3) B (open circle), and 4) C (open circle). To the right, four staves show the multiphonic application of these fingerings, with notes placed on the staff lines to represent the resulting sound.


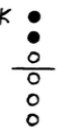
Example 62

In these examples the multiphonics are associated as part of only one group of chord structures, in this case C major chords.

Phelps took the previous approach further with associating certain multiphonic components within several other chordal applications. He believes that with the examples provided it allows the performer or composer to, not only exploit the harmonic qualities of a certain multiphonic but utilize the textural possibilities as well (Phelps, 1998).

Example 141 (Phelps, 1998 p. 169-171):

OK ●  
F ○

**Multiphonic:**  **Fingering:** 

**Chordal Application**

C<sup>6</sup> C Maj<sup>7</sup> C Maj<sup>7</sup> (<sup>#5</sup>) C Maj<sup>7</sup> (<sup>b5</sup>)

C<sup>7</sup> C<sup>7</sup> (<sup>b5</sup>) C<sup>7</sup> aug C<sup>#</sup> min<sup>#7</sup>

C<sup>#</sup> dim<sup>7</sup> D min<sup>7</sup> (<sup>9</sup>) D<sup>7</sup> (<sup>9</sup>) D<sup>7</sup> (<sup>9</sup>) (<sup>b5</sup>)

\*non-chord tone

Example 141

D<sup>ø7</sup> (<sup>9</sup>) D<sup>7</sup> aug (<sup>9</sup>) E<sup>b7</sup> (<sup>13</sup>) (<sup>b9</sup>) E<sup>7</sup> aug

F Maj<sup>7</sup> F min<sup>7</sup> F<sup>#7</sup> (<sup>b5</sup>) F<sup>#</sup> ø<sup>7</sup>

G<sup>7</sup> sus<sup>4</sup> (<sup>13</sup>) G min<sup>6</sup> (<sup>11</sup>) A<sup>b</sup> Maj<sup>7</sup> (<sup>#5</sup>) A<sup>b7</sup> aug

A min<sup>6</sup> A min<sup>7</sup> A min<sup>#7</sup> B<sup>b</sup> Maj<sup>7</sup> (<sup>#11</sup>) (<sup>9</sup>)

Example 141 continued.

B<sup>b7</sup> (<sup>#11</sup>) (<sup>9</sup>) B<sup>b7</sup> (<sup>9</sup>) (<sup>b5</sup>) B<sup>b7</sup> ø<sup>7</sup> (<sup>9</sup>)

Example 141 continued.

## **My own ideas and application of multiphonics into composition in a jazz quartet situation**

In the past forty years there have been some 'obstacles' that had to be overcome regarding the incorporation of multiphonics into compositions. Even though there have been numerous studies and charts done on them it is very hard for a composer to rely only on these charts. Like mentioned before, a big part of the production of multiphonics depend on several variables such as instrument, personal predispositions and cetera. These 'obstacles' may seem a grave defect at first but on the contrary they might be a necessary tool to prevent composers from writing in abstract, without any knowledge and experience of this sound phenomena. Moreover, even if composers do possess theoretical knowledge, it is hard to foresee the exact timbral result of any sound combination in advance. Since all those variables are present it is advised for the composer to collaborate with the performer until he is familiar with the sound material he wishes to use (Bartolozzi, 1967).

An example of these 'obstacles' can be linked to Christian Lauba's *Neuf Etudes* (1996), movement entitled *Savane*, where Lauba in his performance directions requests the saxophonist to respect the written intervals and find fingerings that represent those intervals for his own instrument. Lauba most probably didn't take the variables, mentioned in the previous paragraph in consideration, since finding and changing fingerings by the saxophonist himself might not yield same intervallic results as he wanted. In most cases fixing one note will alter another one (Harrison, 2012).

The previous two paragraphs are important facts but do not apply to me. In my case the 'obstacles' aren't present because I am fortunate enough to be both, the performer and composer in one. The fact of being both was a huge advantage and help for my application of the multiphonics into composition.

Although Phelps provided significant information of multiphonics incorporated into chord structures, there is no example of them used in an actual composition. This fact, next to my desire to try and apply multiphonics in a composition by myself, additionally motivated me to document my results in order to provide a composition in a written form.

Before I start with the description of the steps I took, I would like to give an overview of my motivation and ideas on incorporating multiphonics.

One of the purposes of doing a combined Masters, saxophone and composition, was for me to get into the world of composition and trying to write enough music for being able to record an album after these two years of study, containing only original works. Till now, this study boosted my creativity and opened a whole new view on music.

In general, my project is based on writing for my jazz quartet including an electric bass and a piano. Since the quartet includes the piano (tempered instrument) I was thinking of finding a way, instead of trying to find a combination of both saxophone and piano performing chords together, to replace its role as a harmonic instrument by the saxophone. Multiphonics seemed the perfect tool towards the completion of this task. I thought this concept would solve, or at least reduce the major issues of multiphonics sounding out of tune. This project/research made me explore techniques that I could never dream of using and implementing before.

The steps I took towards the creation of my composition were the following:

- 1) Transcription and notation of the 22 selected multiphonics from my 'personal library' performed by myself. If possible, trying to add a chordal function by looking at the partials.
- 2) Experimentation with combining the selected multiphonics into an order that will give me an appealing harmonic structure (done on piano).
- 3) Adding extra notes in order to highlight or manipulate a desired harmony or chord. This is an addition to the previous harmonic structure (done on piano). These notes were later added to the electric bass.
- 4) Final result (whole composition) – *Roaming Thoughts*

## **Transcription and notation of the 22 selected multiphonics from my ‘personal library’ and their chordal function**

As mentioned in the chapter selection of multiphonics (see page 17) at first I wasn't interested in the analysis of partials or pitches of a fingering, since that part was only focusing on the production aspects of the sound. I was aware of the fact of not necessarily getting the same partials out of a certain fingering, compared to the books I was working with. In brief, I wasn't focusing on this aspect of producing same partials at all. This aspect of variables has been highlighted several times in other researches stating the differences in instrument, mouth piece, reed etc.

At this point I think it is important to highlight the equipment I used:

- Yanagisawa Baritone Saxophone - B-991
- Yanagisawa Rubber Mouthpiece – opening 7
- Rico Royal Reeds (Blue) – hardness: 3 or 3,5

Important remarks towards the understanding of the following examples:

- The comparison between my findings and production of partials compared to Kientzy and Weiss & Netti is irrelevant and out of the scope of my research.
- Notation of the given partials is an approximate pitch. I didn't see any use in notating partials with their microtonal aspects as they are provided by Kientzy and Weiss & Netti. I chose to go with the examples for notation of Phelps.
- The numeration of multiphonics only serve a purpose for me to know which fingering applies to the multiphonic.
- In multiphonic number 13 (Kientzy) I made a mistake. The first example shows the notes of the original fingering and the second example the 'wrong' fingering. I call it 'wrong' because I accidentally pressed the wrong key which produced a whole new multiphonic. The advantage is that they have the same structure. This example, second 'wrong' version, is also on the recording under My selected multiphonics, Multiphonic No. 13 (Kientzy).
- The question marks, next to the letters or alone, stand for: unable to define the exact chord from looking at the partials.
- The way of determining the approximate pitches is made by relating to the piano.
- All pitches are written in concert key.

Concert sound of fingerings from Kientzy:

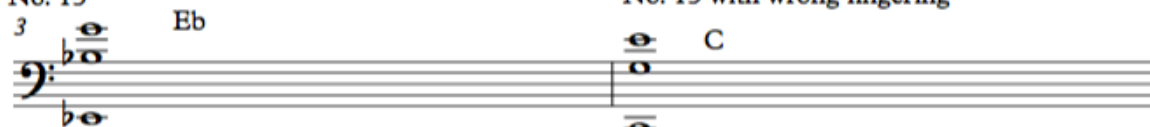
No. 1



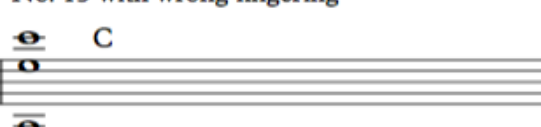
No. 2



No. 13



No. 13 with wrong fingering



No. 17



No. 20



No. 23





No. 28

8 G#dim

No. 30

9 G?

No. 31

10 ?

No. 35

11 ?

No. 36

12 ?

No. 37

13 B7/ F#

No. 59

14 C (add 9)/ G

No. 60

15 C7/G

No. 66 3

16 Gmin6

17 No.67 Edim/G

Concert sound of fingerings from Weiss and Netti:

No. 7

18 F#

No. 18

19 A

No. 37

20 ?

No. 63

21 Ebmin?

No. 64

22 Cdim/Eb

No. 67

23 C#dim/E

## Experimentation with combining the selected multiphonics into an order that will give me an appealing harmonic structure

At this point, where I had the approximate pitches transcribed, I had to come up with a harmonic structure for my composition. This was done by experimentation with different combinations of the transcribed multiphonics.

The harmonic structure below contains only 13 out of the 22 multiphonics. Why only 13? Because I couldn't find an appealing combination with the other 9.

The combinations were put together with the help of the piano.

No. 17 (Kientzy)	No. 7 (Weiss)	No. 59 (Kientzy)	No. 36 (Kientzy)
------------------	---------------	------------------	------------------

5 No. 17 (Kientzy)	No. 7 (Weiss)	No. 59 (Kientzy)	No. 37 (Kientzy)
--------------------	---------------	------------------	------------------

9 No. 67 (Weiss)	No. 17 (Kientzy)	No. 37 (Kientzy)	No. 2 (Kientzy)
------------------	------------------	------------------	-----------------

13 No. 13 (Kientzy) with wrong fingering	No. 1 (Kientzy)	No. 13 (Kientzy) with wrong fingering	No. 1 (Kientzy)
---	-----------------	--	-----------------

17 No. 13 (Kientzy) with wrong fingering	No. 60 (Kientzy)	No. 59 (Kientzy)	No. 63 (Weiss)
---	------------------	------------------	----------------

2  
21 No. 13 (Kientzy)  
with wrong fingering No. 37 (Kientzy) No. 1 (Kientzy) No. 20 (Kientzy)

25 No. 1 (Kientzy) No. 67 (Weiss) No. 66 (Kientzy) No. 36 (Kientzy)

29 No. 17 (Kientzy) No. 7 (Weiss) No. 59 (Kientzy) No. 36 (Kientzy)

33 No. 17 (Kientzy) No. 7 (Weiss) No. 59 (Kientzy) No. 37 (Kientzy)

37 No. 67 (Weiss) No. 17 (Kientzy) No. 63 (Weiss) No. 1 (Kientzy)

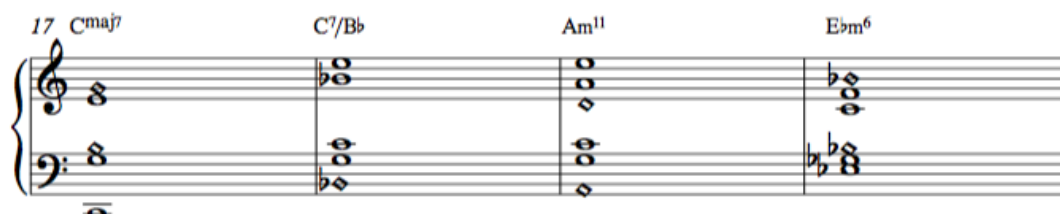
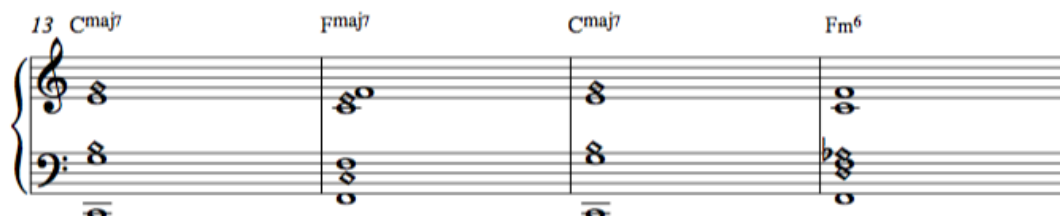
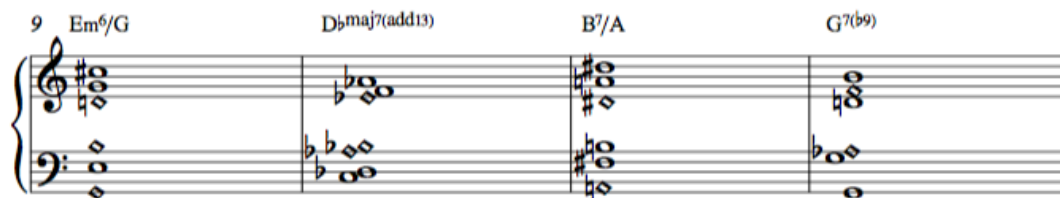
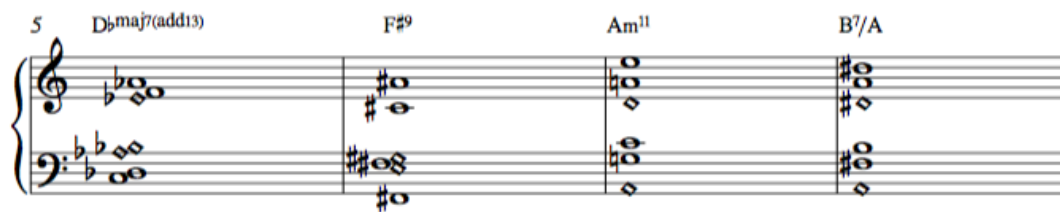
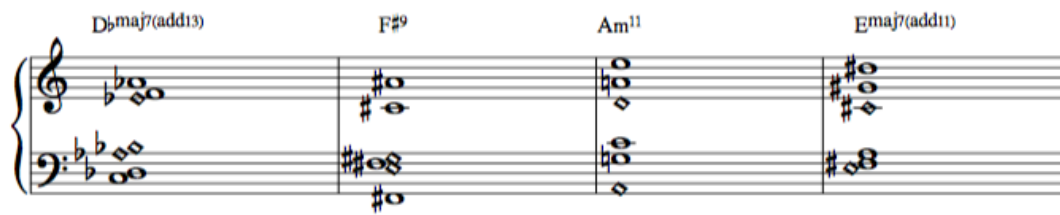
## Adding extra notes to the previous harmonic structure in order to highlight or manipulate a desired harmony or chord

In this stage, as suggested by Phelps in example 141 (page 28), I utilized the textural possibilities in which certain multiphonics can be placed. Since most of the multiphonics have an open harmonic position, they gave me plenty of space for textural manipulation.

The reason I chose to add extra notes to the notes of multiphonics was mainly because I found most of the multiphonics harmonically too undefined by themselves.

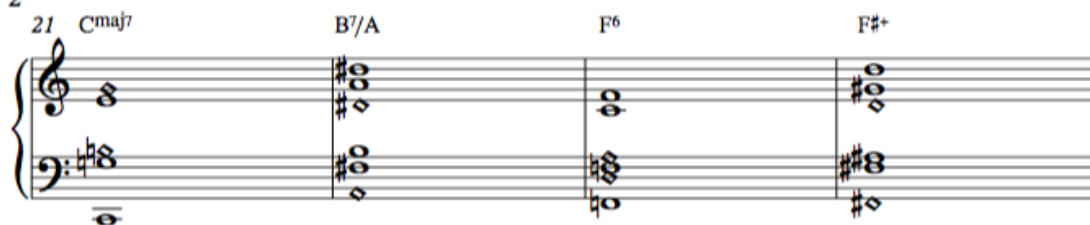
The additional notes are written with a **diamond shape**.

These additional extra notes (diamond shape) were later on, in the composition, added to the electric bass's part.

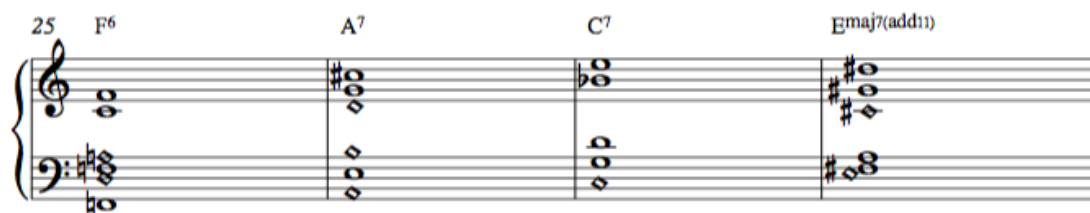


2

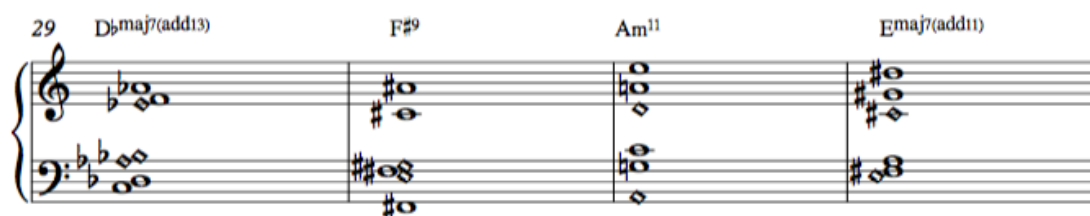
21 Cmaj7 B7/A F6 F#+



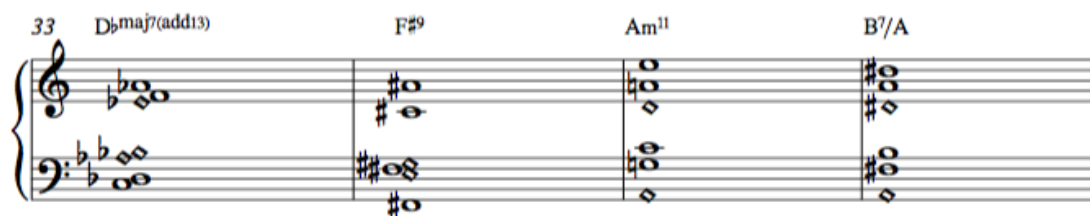
25 F6 A7 C7 Emaj7(add11)



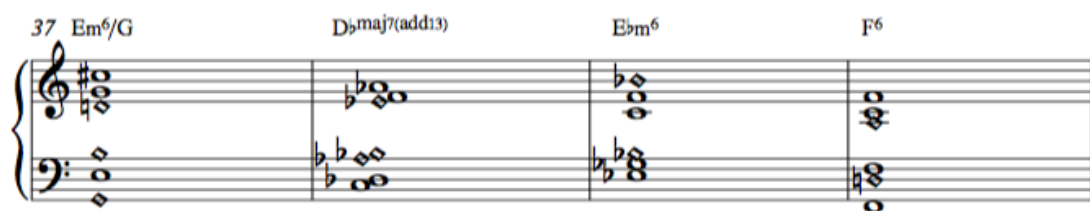
29 Dbmaj7(add13) F#9 Am11 Emaj7(add11)



33 Dbmaj7(add13) F#9 Am11 B7/A



37 Em6/G Dbmaj7(add13) Ebm6 F6



## Final result

The final result of the second cycle is a newly born composition of mine deriving from research and experimentation, incorporating multiphonics in a way that they define harmony. Due to the multiphonics sonic nature, combined with a tempered instrument (piano), I got to the idea of naming the composition *Roaming Thoughts*. *Roaming Thoughts* can be found in the appendices (Appendix 5).

Here is the recording of Roaming Thoughts:

**Track 41 Roaming Thoughts;** <https://goo.gl/Lo3sgq>

### A brief explanation of Roaming Thoughts:

- The chordal/harmonic structure from the previous chapter serves as ‘the core’ of my composition (with few adjustments and rhythmical variations). It can be seen in parts A, B and C.
- The addition of extra notes from the previous chapter above was added to the electric bass’s part. In order not to get only steady chords throughout the composition I decided to not use all of the extra notes, except in the B part and bars 33-35 where I intentionally wanted these extra notes to be present. This resulted into a rhythmically more flexible bass line in part A. This bass line usually contains at least one of the extra notes (Ex. 1).

Ex. 1:

These are the first four bars from the chordal/harmonic structure from the previous chapter with extra notes:

First system of musical notation showing four chords: D<sup>9</sup>maj<sup>7</sup>(add13), F<sup>#</sup>9, A<sup>m</sup>11, and E<sup>7</sup>maj<sup>7</sup>(add11). The notation is written on a grand staff (treble and bass clefs).

And these are the first four bars from A part of Roaming Thoughts:

We can clearly see the presence of the extra notes (except the C# in the second bar which is not there in the chart above).

- Since the piano doesn't play the role of a harmonic instrument, at least not as playing chords, I gave it a melodic function. The melody was created with a floating rhythmical concept.
- Generally, the drums function as an addition to the piano or pianos left hand part, and for coloring.

# ***Bibliography***

## **Books:**

- Bartolozzi, Bruno (1967) *New Sounds for Woodwind*, p. 59-60. London, Oxford University Press.
- Kientzy, Daniel (1982) *Les Sons Multiples Aux Saxophones* (Salabert Editions)
- Londeix, Jean-Marie (1989) *Hello! Mr. Sax, or Parameters of the Saxophone*, p. 31. Paris, Alphonse Leduc & Cie.
- Weiss & Netti, Marcus & Giorgio (2010) *The Techniques of Saxophone Playing*, p. 36; 135-137; 170-171. Kassel, Barenreiter-Verlag Karl Votterle GmbH & Co.

## **Internet (thesis's and dissertations):**

- Harrison, Iain (2012) *An exploration into the uses of extended techniques in works for the saxophone, and how their application may be informed by a contextual understanding of the works themselves*, p. 22, 45-49. Doctoral thesis, University of Huddersfield.
- Murphy, Patrick (2013) *Extended Techniques for Saxophone: An Approach Through Musical Examples*, p. 18. Doctoral thesis, Arizona State University.
- Phelps, Boyd Allan (1998) *A Thesaurus of Saxophone Multiphonics and a Guide to their Practical Application*, p. 1; 16-51; 168-171. Doctoral dissertation, University of Washington.
- Snekkestad, Torben (2016) *The Poetics of a Multiphonic Landscape*, p. 19-28. Reflections on the project, The National Norwegian Artistic Research Fellowship Programme.
- Taylor, Matthew J. (2012) *Teaching Extended Techniques on the Saxophone: A Comparison of Methods*, p. 19; 157-183. Open Access Dissertations, Paper 772.

## **Internet (videos and other links):**

- Harvey Pittel (part 8) Matching Overtones: <https://www.youtube.com/watch?v=mD6pfo7Hi-I>
- Saxophone Overtone Exercises by David Demsey (adapted from Joseph Allard): <http://davidliebman.com/home/wp-content/uploads/2015/02/demsey-1.pdf>



## *Appendices:*

### **1) Track list of audio/video recordings on the USB flash drive:**

Track 01 Reference recording: Albert Kerekes & friends - Delta City Blues (Michael Brecker); <https://goo.gl/GHPft8>

Track 02 Harvey Pittel (Part 8) Matching Overtones - Presents the Sax Teachings of the Master, Joe Allard; <https://goo.gl/CqHSJ9>

Track 03 Matching Overtones; <https://goo.gl/VZCvuM>

Track 04 Saxophone Overtone Exercise (2:1) – Demsey; <https://goo.gl/3PswjY>

Track 05 Saxophone Overtone Exercise (3:2) – Demsey; <https://goo.gl/wjXJtz>

Track 06 Saxophone Overtone Exercise (3:1) – Demsey; <https://goo.gl/ejS4lN>

Track 07 Saxophone Overtone Exercise (3:2:1) – Demsey; <https://goo.gl/Gi8blP>

Track 08 Saxophone Overtone Exercise (4:3) – Demsey; <https://goo.gl/2sYiYk>

Track 09 My own timbral fingerings; <https://goo.gl/sAebPO>

Track 10 C bebop scale incorporating overtone timbral fingering; <https://goo.gl/wNXJTW>

Track 11 Embellishment of the tonic and fifth degree of the C7 chord; <https://goo.gl/QPBXus>

Track 12 Chromatic movement from Bb to C; <https://goo.gl/W9r9iI>

Track 13 Chromatic movement from Bb to C#; <https://goo.gl/22lAOR>

Track 14 Solo - Chorus one (without any overtones or timbral fingerings); <https://goo.gl/OJ0zPU>

Track 15 Solo - Chorus one (with overtones and timbral fingerings); <https://goo.gl/K62VDk>

Track 16 Solo - Chorus two (without overtones and timbral fingerings); <https://goo.gl/zKGAwj>

Track 17 Solo - Chorus two (with overtones and timbral fingerings); <https://goo.gl/NEch2t>

Track 18 Final recording (two choruses on Delta City Blues); <https://goo.gl/ahBIvP>

Track 19 Daniel Kientzy – Multiphonic No.1; <https://goo.gl/0Tzzm6>

Track 20 Daniel Kientzy – Multiphonic No. 2; <https://goo.gl/X01iFV>

Track 21 Daniel Kientzy – Multiphonic No. 13; <https://goo.gl/K21khQ>

Track 22 Daniel Kientzy – Multiphonic No. 17; <https://goo.gl/SDjgbZ>

Track 23 Daniel Kientzy – Multiphonic No.20; <https://goo.gl/GqhPWL>

Track 24 Daniel Kientzy – Multiphonic No.23; <https://goo.gl/t9xAXs>

Track 25 Daniel Kientzy – Multiphonic No.28; <https://goo.gl/nDe7KO>

Track 26 Daniel Kientzy – Multiphonic No.30; <https://goo.gl/0gKS8E>

Track 27 Daniel Kientzy – Multiphonic No.31; <https://goo.gl/B61u12>

Track 28 Daniel Kientzy – Multiphonic No.35; <https://goo.gl/41ksB9>

Track 29 Daniel Kientzy – Multiphonic No.36; <https://goo.gl/JEzLnu>

Track 30 Daniel Kientzy – Multiphonic No. 37; <https://goo.gl/njyXw1>

Track 31 Daniel Kientzy – Multiphonic No. 59; <https://goo.gl/U2EkOn>

Track 32 Daniel Kientzy – Multiphonic No. 60; <https://goo.gl/Wsrtht>

Track 33 Daniel Kientzy – Multiphonic No. 67; <https://goo.gl/KyjHti>

Track 34 Daniel Kientzy – Multiphonic No. 66; <https://goo.gl/dI7ZQW>

Track 35 Weiss & Netti – Multiphonic No. 7; <https://goo.gl/0BWrwq>

Track 36 Weiss & Netti – Multiphonic No. 18; <https://goo.gl/lXBr91>

Track 37 Weiss & Netti – Multiphonic No. 37; <https://goo.gl/nfDruC>

Track 38 Weiss & Netti – Multiphonic No. 63; <https://goo.gl/NPcfaz>

Track 39 Weiss & Netti – Multiphonic No. 64; <https://goo.gl/3dUaIO>

Track 40 Weiss & Netti – Multiphonic No. 67; <https://goo.gl/oQBWVZ>

Track 41 Roaming Thoughts; <https://goo.gl/Lo3sgq>

## 2) Network

**Jarmo Hoogendijk** – research coach, guidance on the research process

**Dick de Graaf** – saxophonist, monitored the last stage of the second cycle, gave suggestions towards my performance of multiphonics

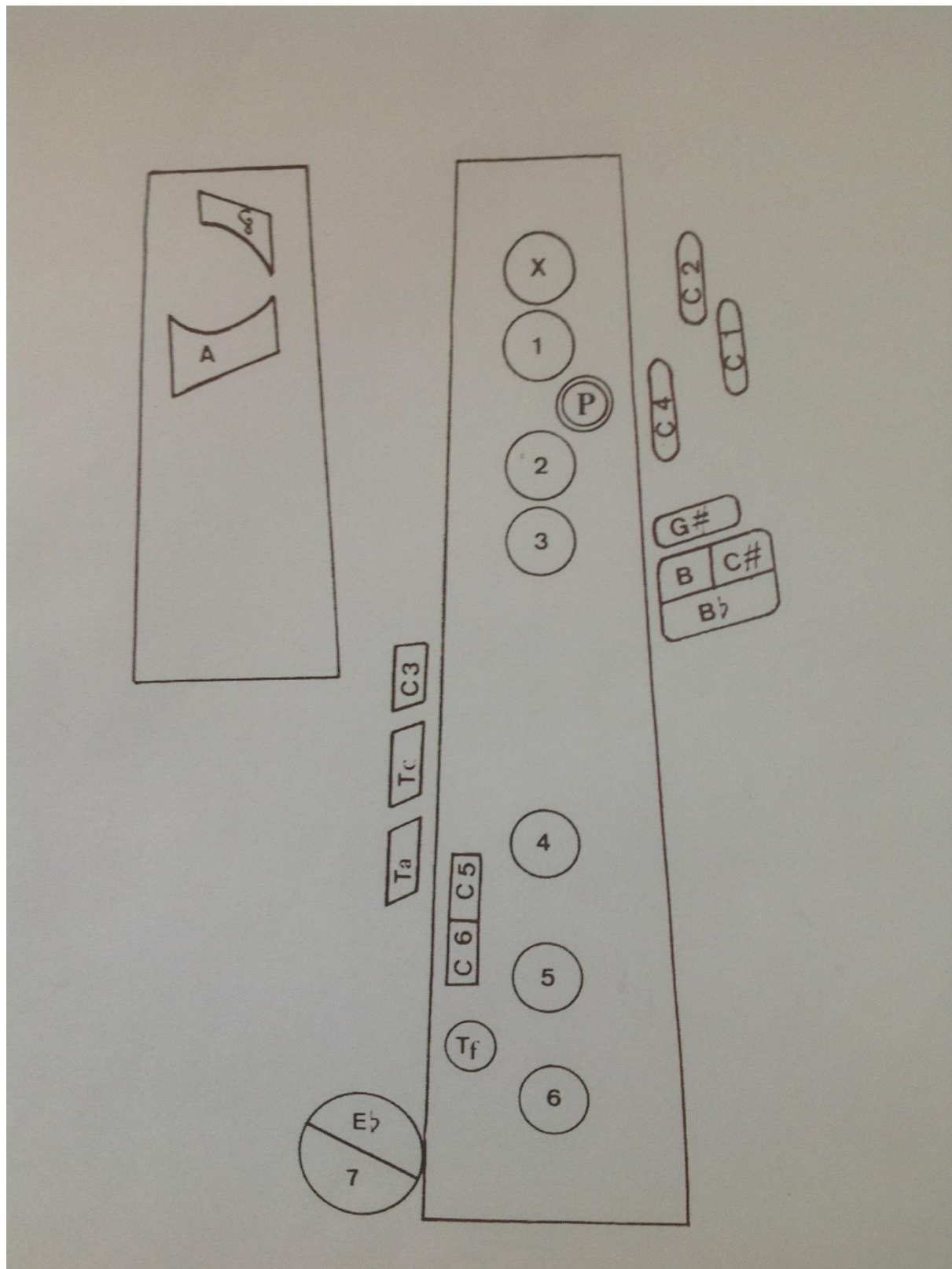
**Paul van Brugge** – composer, monitored the development of my composition *Roaming Thoughts*

**Nils van Haften** – saxophonist, monitored the selection of my multiphonics for my personal library

**Ties Mellema** – saxophonist, suggested me books to draw from in the beginning stages of my second cycle and provided tips for production on multiphonics

The reason why the number of my network isn't bigger is because, during the course of my research, I found out that multiphonics are a very personal study and don't require much external manipulation in sense of expert visits. At least not in my case, where I can say that I as a master student knew enough about conventional saxophone playing in order to understand and figure out how to produce multiphonics myself, just by information provided in the studies I went through. The other reason is, as mentioned in the conclusion on production of multiphonics that pedagogically speaking, it's very hard to generalize and pinpoint the right way towards production of the multiphonics. Tips on how to approach them are very useful, but the most essential part is for one to experiment with multiphonics, by adjusting throat, air and embouchure, and in the end find the way that works best for them.

### 3) The fingering chart of Daniel Kientzy



#### 4) Sketches collection on production of multiphonics

**NO. 1**  
(Kintory)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$   $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$   $\rightarrow$  strongest note;  
- aim towards the A  
and you'll get the full  
sounding multiphonic!

FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \end{matrix} \begin{matrix} A \\ \\ \\ \\ \\ G \end{matrix}$

**NO. 2** ( $\text{#} & \text{+}$ )  
(Kintory)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - open throat  
- drop jaw  $\rightarrow$  no embouchure  
pressure at all!  
 $\odot \rightarrow$  target note

FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 7 \end{matrix} \begin{matrix} A \\ \\ \\ \\ \\ \end{matrix}$

**NO. 13**  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$   
(Kintory)  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$   $\rightarrow$  target the G  
- it's an overtone of the C  
- so adjust your throat position

FINGERING:  $\begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \end{matrix} \begin{matrix} \\ \\ \\ \\ \\ \\ G \end{matrix}$

**NO. 17**  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$   
(Kintory)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - diffused blowing  
- less embouchure!  
- imagine blowing inbetween  
the reed and mouthpiece!

FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \end{matrix} \begin{matrix} \\ \\ \\ \\ E \end{matrix}$

**NO. 20**  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$   
(Kintory)  $\begin{pmatrix} \text{#} & \text{+} \end{pmatrix}$  - high throat position!  
- imagine playing in  
altissimo register

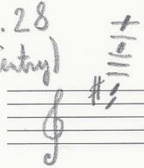
FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \\ 7 \end{matrix} \begin{matrix} A \\ \\ C_3 \\ \\ \end{matrix}$

**NO. 23**  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$   
(Kintory)  $\begin{pmatrix} \text{b} & \text{+} \end{pmatrix}$  same principle

FINGERING:  $\begin{matrix} 1 \\ 2 \\ 4 \\ 5 \\ 6 \end{matrix} \begin{matrix} A \\ \\ C_3 \\ \\ \end{matrix}$



NO. 28  
(Kinty)

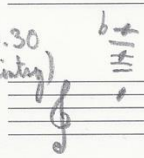


- high throat position  
- imagine playing  
in altissimo register

FINGERING:

$\frac{1}{2}$   
A  
6  
5 C3  
7

NO. 30  
(Kinty)



same principle

FINGERING:

$\frac{1}{2}$   
3 A  
7 C3

NO. 31  
(Kinty)



same again

FINGERING:

$\frac{1}{2}$   
A  
7 C3

NO. 35  
(Kinty)

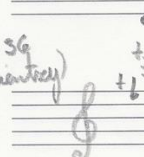


again

FINGERING:

X  
2  
G#

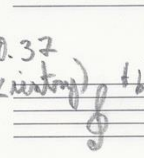
NO. 36  
(Kinty)



FINGERING:

X  
2  
7

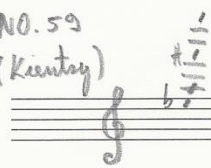
NO. 37  
(Kinty)



FINGERING:

X  
2  
5  
5

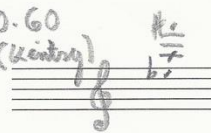
NO. 59  
(Kientz)



- high throat position  
- lower jaw

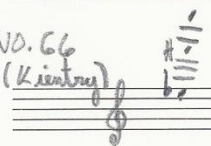
FINGERING:  $\begin{array}{c} 1 \\ 3 A \\ \hline 5 \\ 6 G5 \\ 7 \end{array}$

NO. 60  
(Kientz)



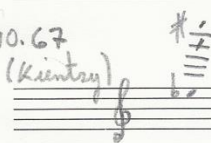
FINGERING:  $\begin{array}{c} 1 \\ 3 A \\ \hline 5 \\ 7 G5 \end{array}$

NO. 66  
(Kientz)



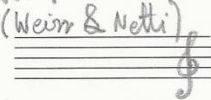
FINGERING:  $\begin{array}{c} 1_p \\ \hline G5 \end{array}$

NO. 67  
(Kientz)



FINGERING:  $\begin{array}{c} 1 \\ \hline G^\sharp \\ C5 \end{array}$

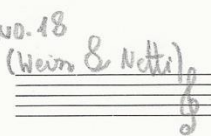
NO. 7  
(Wein & Netti)



- low throat position  
← target note

FINGERING:  $\begin{array}{c} 1 \\ 2 \\ 3 A \\ \hline 4 \\ 5 \\ 6 E^\flat \end{array}$

NO. 18  
(Wein & Netti)



← target note

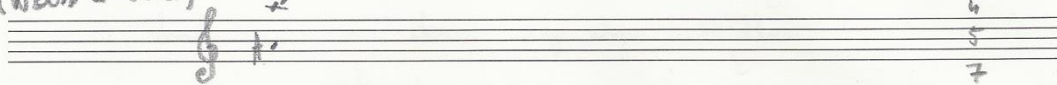
FINGERING:  $\begin{array}{c} 1 \\ 2 \\ 3 B \\ \hline 5 \\ 6 \\ 7 \end{array}$

NO. 37  
(Heim & Netti)

$\sharp \frac{1}{2}$

- high throat position

FINGERING: 1 3 B $\flat$



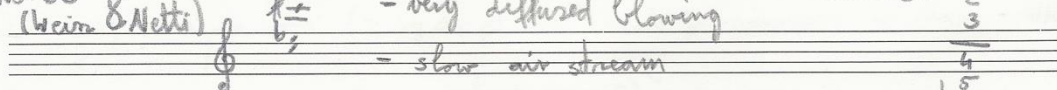
NO. 63  
(Heim & Netti)

$\sharp \frac{1}{2}$

- very diffused blowing

- slow air stream

FINGERING: 1 C $\sharp$



2 3  
4 5  
6 7

NO. 64  
(Heim & Netti)

$\flat \frac{1}{2}$

FINGERING: 1 C $\sharp$



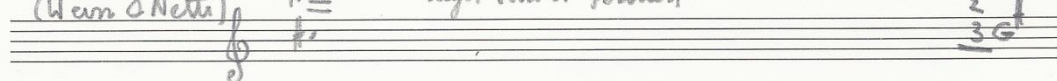
2 3  
4 5  
6 7

NO. 67  
(Heim & Netti)

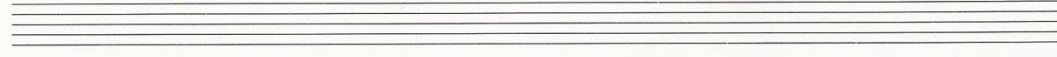
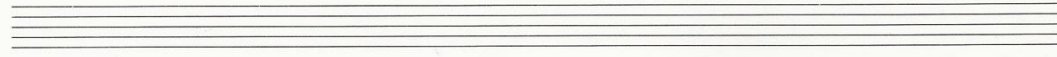
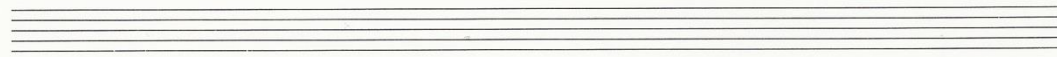
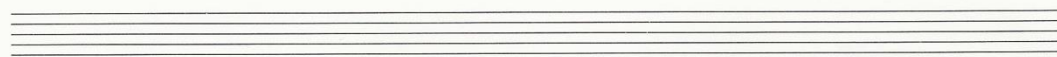
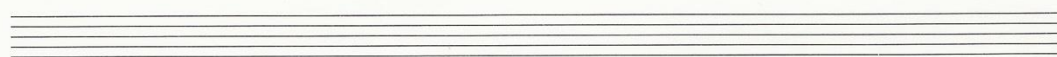
$\sharp \frac{1}{2}$

- high throat position

FINGERING: 1 C $\sharp$



2 3  
4 5  
6 7





## 5) Composition Roaming Thoughts

### ROAMING THOUGHTS

ALBERT KEVEKES

INTRO ♩ = 50

PIANO

*pp*

*pp*

*pp*

*pp*

*pp*

*pp*

INTRO

SASS

*p*

7

PNO.

*pp*

*pp*

*pp*

*pp*

SASS

MALETS

Dr.

*p*

11 D<sup>b</sup>Maj7 F<sup>#</sup> Am7 E<sup>b</sup>Maj7 E<sup>b</sup>m<sup>6</sup>

SARI. SAX.

*pp*

SARI. SAX.

*pp*

PNO.

SASS

Dr.

16

PNO.

*p*

Ped.

SAX.

*p*

DR.

20 D<sup>b</sup>maj7 E<sup>b</sup>maj13 E<sup>b</sup>m<sup>6</sup> F7(b9#4)

SARL. SAX.

*mp*

SARL. SAX.

PNO.

*mp*

Ped.

SAX.

*p*

A

24 D<sup>b</sup>maj7 F<sup>b</sup>9 Am7 E<sup>b</sup>maj13

SARL. SAX.

*mp*

SARL. SAX.

PNO.

*mp*

SAX.

*mp*

28 D<sup>b</sup>maj7 F#<sup>b</sup> Am7 B7/A

SARL. SAX. *mf*

SARL. SAX. *mf*

PNO. *mf*

BASS *mf*

DR. *mf*

32 Em<sup>b</sup>/G D<sup>b</sup>maj7 B7/A G7(b9)

SARL. SAX.

SARL. SAX.

PNO.

BASS

DR.

4

36

SARL. SAX. *mf* Cmaj7 Fmaj7 Cmaj7 Dm7(b9)

SARL. SAX. *mf*

PNO. *mf*

BASS *mf* Cmaj7 Fmaj7 Cmaj7 Dm7(b9)

DR. *mf*

40

SARL. SAX. Cmaj7 C7/Bb Am7 Ebm6 Cmaj7 G7/A

SARL. SAX.

PNO.

BASS Cmaj7 C7/Bb Am7 Ebm6 Cmaj7 G7/A

DR.

43  $F^b$   $F^b+$   $F^b$   $G7^{\text{dim}}/A$   $C^7$   $E^{\text{maj}}11$  5

SARL. SAX.

SARL. SAX.

PNO.

BASS

DR.

46  $C$   $D^{\text{bmaj}}7$   $F^b$   $A^{\text{m}}7$   $E^{\text{maj}}11$

SARL. SAX.

SARL. SAX.

PNO.

BASS

50 D<sup>b</sup>maj7 F#<sup>o</sup> Am7 B7/A

SARL. SAX. *mf*

SARL. SAX.

PNO. *mf*

SASS *mf*

DR. *mf*

54 Em<sup>9</sup>/G E<sup>o</sup>maj11 D<sup>b</sup>maj7

SARL. SAX.

SARL. SAX.

PNO.

SASS

DR.

57 Outro

PNO. *pp*

*pp*  
Ped. \_\_\_\_\_

Outro

BASS *p*

61 D<sup>9</sup>ma7

RI. SAX. *p*

RI. SAX.

62 E<sup>7</sup>ma11

63 E<sup>7</sup>m6

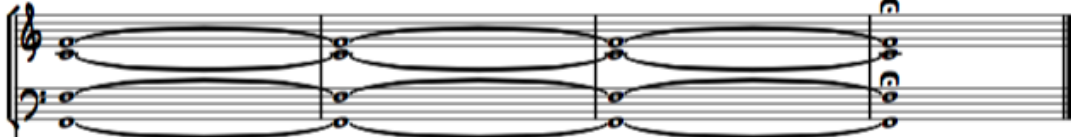
PNO. *p*

Ped. \_\_\_\_\_


BASS *p*

Dr. *p*

64 F f7(9)(#4) F#(11) F7(9)(#4)

SARL. SAX. 

SARL. SAX. 

PNO. 

Ped. 

BASS 

Dr. 