

BEYOND THE WALL OF SOUND

*'The legendary recording technique of Phil Spector stripped'*

by

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## **Chapter 1. Introduction**

The early sixties was a fruitful era for the modern pop-music. The Gold Star studio in Los Angeles would be one of the most musically influential places of those days. Imagine some of the greatest musicians of that period having recorded here: Brian Wilson, John Lennon, Bob Dylan, The Ronettes, The Righteous Brothers, The Who, The Monkees and of course Phil Spector himself. The popmusic was going through a revolution, and this was one of the places where it all started. It would probably be possible to feel the musical vibration of those days by just being inside that studio. One of the leading sounds of that period was developed by Phil Spector. He called it the wall of sound. It was basically a formula that made use of harmony and music technology in a way to mask definition in the whole. By doing so, it became difficult to distinguish instruments from one another as they form a certain density.

These days, musicians are experimenting to get ‘that unique sound’ of a certain time period with modern plugins. That is why I asked myself: ‘Is it still possible to recreate Spector’s wall of sound with the modern technique?’ All available information that described the creation of the wall of sound was gathered, checked on reliability and afterwards placed in this thesis. With this information collected, it was possible to experiment with the unique sound that Phil Spector used in the sixties. It is expected to find a perfect replica of a Phil Spector song that made use of the wall of sound technique.

After reading and researching so much about the subject, and even ‘being’ Spector while standing in front of twenty musicians to recreate the wall, it gave the glorious feeling of being a part of his time period. On the other side, there was always an underlying skepticism. During the process I felt that imitating had its limits. Because of the historical context, it was impossible to invent, and I would have loved to use this possibility to make something new. That is why I always searched for ways to use the wall of sound technique in the music of today. I am sure that certain elements of the wall of sound technique is still fruitful to use these days. Although Rock ’n Roll is not ‘very today’, people might still respond to the producing-technique used in the music of the sixties.

This thesis is unique and useful because it is the only source where all the aspects of the wall of sound are collected and explained. In addition, the wall of sound will be recreated to answer the question if it is still possible to recreate the sound with modern technology.

## Chapter 2. Methods

To put everything in its place took a lot of time. Simply because there did not exist a complete source that described how the wall of sound was created. The basic information lied scattered around books, articles, internet pages and interviews. Therefore it needed to be gathered. All these small pieces of information could be seen as the core of this thesis: the harmonic and technical analysis.

First thing that needed to be done was checking the reliability of some articles (lots of sources from internet appeared to be incomplete or incorrect). To do this, two songs that represented the wall in its best way were transcribed ('Be My Baby' and 'Walking In The Rain' - performed by The Ronettes and produced by Phil Spector). Because the multitracks<sup>1</sup> of this song were available, the composition could be written down very precise. Afterwards, the transcription was compared to sources regarding to the harmonical part of the wall. In this way it was possible to write down a complete analysis. '*The Producer as Composer*'<sup>2</sup> gave some help in this chapter. Virgil Moorefield, gave a unique look to Spector's use of instrumentation through an approach that was not seen in any other source. A secondary source in the harmonical research were internet forums, often seen as a dangerous way to gain information because of the unfunded and unreliable opinions. Still, the harmonical information found there was still used to form one of the basic chapters. This is because the transcriptions gave insight to analyze and fund certain facts and dismiss myths. In addition I came in contact with one of the colleagues of Jeff Barry, co-writer of the wall of sound songs. Therefore it was possible to ask him about the 'base in fifth-theory'.

The purpose of the technical research was to use it as reference to imitate 'Walking In The Rain'. The reason to imitate this, is to come as close as possible to the historical essence of the wall of sound with the resources of today. Microphones and effects used in the 1960's were examined to understand their technical purpose. '*Recording the Beatles*'<sup>3</sup> gave a great summarized overview of the most popular microphones used in this time period. Although Abbey Road had its own workaround that was difference then the record surrounding in California (or in the US generally), there surely was a relation in the use of the technical equipment. By comparing this with the articles

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<sup>1</sup> The full recording track minus the vocals, strings and overdubs.

<sup>2</sup> Virgil Moorefield, *The Producer as Composer: Shaping the Sounds of Popular Music*. Cambridge MA, 2010

<sup>3</sup> Ryan & Kehew, *Recording the Beatles*. United States 2006

in which Spector's colleagues were interviewed, a detailed overview of the equipment used in the Gold Star Studio with the corresponding information was developed. A complete historical background was formed by reading biographies like 'Wall Of Pain'. The focus laid on creating an overview of Spector's colleagues and musical influences. It was expected to hear certain elements of his influences back in Spector's own music (and was found). The other paragraph gave an overview about the life of Spector. At first it was written as an extra paragraph with the reason to come closer to Spector as an artist. It was expected that it would not contribute to my understanding of the wall, but the opposite happened. The paragraph answered the question why the wall became history and why 'You've Lost That Lovin' Feelin' sounded more dynamic than his previous hits. Finally 'The Wrecking Crew'<sup>4</sup> gave some new insights. It was studied for biographical reasons, but in the end it ended up being useful for photographic research.

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<sup>4</sup> Denny Tedesco. *The Wrecking Crew* - 101 min. Documentary, 2008

## Chapter 3. Biography & Historical Background

In this chapter, Spector's biography will be researched. This first paragraph will give a brief overview about Spector's life regarding the wall of sound. This will be fruitful in the next chapters when some of his work will be researched. The second paragraph will overview his musical influences and colleagues in this period. The time period in this chapter will not go further than 'River Deep, Mountain High', as this song is often seen as Spector's wall of sound climax.

### **3.1 Biography**

**3.1.1 Gold Star** Phil Spector was born December 26 1940 in Bronx, New York and grew up in West-Hollywood throughout the 50's. As fond as he was of music, he started hanging around local studios hoping to learn about recording techniques. At a young age, he was welcomed at Gold Star, a studio in Santa Monica that was established in 1950 by Dave Gold and Stan Ross. Spector was very persuasive and because of that Ross took him under his wing to learn the finest techniques in the studio. At the age of 17 he collected enough money to record his first song. Ross, who sat as audio-engineer confessed that some of Spector's ideas were out of the range of even his experience<sup>5</sup>. With a record deal at Era Records and later at Imperial Records, Spector had a chance to experiment and create his own sound. In this period he wrote and produced 'To Know Him Is To Love Him'. From this moment on Phil Spector decided to focus on producing and less on performing and songwriting.

**3.1.2 Before the wall** Although LA was known as the entertainment capital of the world, New York was the place where all the important publishers, record companies and studios were located. So when Spector had a chance to work as protégé producer/songwriter for Leiber and Stroller in New York he took it immediately. Leiber and Stroller both worked under Atlantic Records. At this label, Spector released a few singles where the experimentation of dubbing, echoing and pre-bouncing was used frequently. His approach was to first perfect his rhythm track (drums, piano, bass, sax, guitars), dub it all down to one track, then add strings and vocals<sup>6</sup>. Obviously this can be seen as the start of creating the wall of sound. Atlantic records was not the place to experiment though, and in 1961 he left the company to set up his own record label 'Philles Records' together with Lester Sill.

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<sup>5</sup> Dave Thompson, *Wall of Pain*. London 2003. 25

<sup>6</sup> Dave Thompson, *Wall of Pain*. London 2003. 53

**3.1.3 Building The Wall of Sound** Spector remained in New York to scout talent for his label. A few months later he found it in the form of ‘The Crystals’, a black Brooklyn girl group. At this moment, Spector proved himself with songs like ‘He’s A Rebel’, ‘Da Doo Ron Ron’ and ‘And Then He Kissed Me’ reaching the top charge. The Crystals were established as ‘Philles’ number one selling point with the sound of the wall already clearly audible on these songs. Another great example is ‘Zip-A-Dee-Doo-Dah’ a song Spector recorded and produced late ’62 and hitting no.8 on the Billboard Hot 100 in ’63<sup>7</sup>. By the end of March ‘The Ronettes’ signed with Spector. The girl group had the same roots as ‘The Crystals’.

In the mid 60’s the US was in the grip of the British invasion. Bands like ‘The Rolling Stones’, ‘The Who’, ‘The Kinks’ and ‘The Beatles’ invaded the US charts, leaving America’s own music industry in total chaos. The cutting sound of the guitars was the new sound where people responded to. This was quite in contrast with Spector’s production technique to create a sound where guitars couldn’t be separated from the whole. Funny enough Spector was there the moment the invasion took place, right behind the Beatles when they landed at Kennedy Airport. Spector had to come up with something incredible to rebuild his demolished wall, and he did. ‘You’ve Lost That Lovin’ Feelin’ was Phil Spector’s answer to the invasion. The song (performed by ‘The Righteous Brothers’) reached the first place in the Billboard hot 100, and is known to be one of the best examples of the wall of sound.

By the age of 25, Spector decided to leave the music industry with one big bang. He wanted to go crazy one more time. So for a rumored cost of \$25,000 he leased Ike and Tina Turner from the Warner Label and gathered songwriters to start writing ‘River Deep - Mountain High’. For some reason the record never found a home in America, but in the UK the song reached No. 3. River Deep - Mountain High is seen as Spector’s ultimate masterpiece, where the wall of sound can be heard in its full glory. Apart from the positive reactions there was also some criticism. The technology would not have been able to keep up with Spector letting the musicians ‘drown’ in all the reverbs.

**3.1.4 After The Wall** Philles Records quietly closed its doors. Off the radar Spector still produced some records (and even movies). But with the featherlight production of the song ‘Black Pearl’, Spector proved that the wall was as much ancient history for himself as it was to anyone else.

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<sup>7</sup> [https://en.wikipedia.org/wiki/List\\_of\\_Billboard\\_Hot\\_100\\_top\\_10\\_singles\\_in\\_1963](https://en.wikipedia.org/wiki/List_of_Billboard_Hot_100_top_10_singles_in_1963) (accessed May 20, 2015)

### **3.2 Influences & Colleagues**

*'When I started out, there was no such title as 'record producer'. I invented that word and I honestly believe that I did not know I was creating a legend. I just did what I honestly felt was right and I will continue to do it until the very day that I die'<sup>8</sup>. - Phil Spector*

The music producer wasn't fully discovered, and obviously Phil Spector was one of the first. Because of this, Spector was hard to influence by people in the music industry. Producers and songwriters who influenced him the slightest became his colleagues.

**3.2.1 Musical influences** At an early age Spector had an insatiable urge to play the guitar, so he took jazz-guitar lessons. During a performance of Ella Fitzgerald, the 15 year old Spector discovered guitar player Barney Kessel. By playing in gigs in the LA-Blues circuit, Kessel became one of the hottest young guitarists on the jazz scene. As a young guitar player himself Spector had a big admiration for Kessel, and started listening everything he had done. It was Kessel that finally gave Spector the idea to visit studio's around town to work as protégé. Spector's musical influences also included the Latin genre (percussion in particular). In lots of his hit-songs, a continuous rattle is audible from the maracas, shakers, bells and gourds.

The first real exposure that may have been an inspiration for the wall of sound, might have been the collaboration with Leiber and Stroller. When Spector was working as a protégé, they were already doubling instruments to get a fuller sound. Though there might have been similarities between one of Spector's trademark to the wall of sound and the doubling technique Leiber and Stroller used, they drew a clear distinction between them. *'Phil was the first one to use multiple drum kits, three pianos and so on. We went for much more clarity in terms of instrumental colors, and he deliberately blended everything into a kind of mulch. He definitely had a different point of view.'*<sup>9</sup> An unexpected harmonical influence can be found a century earlier. Richard Wagner (1813 - 1883) was a German composer. Spector himself gathered big groups of musicians to record his songs, making the sound fuller than it had been originally. He called this a *'Wagnerian approach to Rock & Roll: little symphonies for the kids'*<sup>10</sup>. The often heavy melancholic or heroic themes of Wagner might contradict the happy pop songs of Spector, but the influence of Wagner lies in the

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<sup>8</sup> Dave Thompson, *Wall of Pain*. London 2003. 22

<sup>9</sup> Virgil Moorefield, *The Producer as Composer* 2005. 10

<sup>10</sup> Mick Brown, *Tearing Down the Wall of Sound: The Rise and Fall of Phil Spector*.



function of the harmony. In a public paper <sup>11</sup>, the comparison between Wagner's 'Ride of the Valkyries'<sup>12</sup> with Leonard Cohen's 'Memories'<sup>13</sup> (produced by Spector) is researched. At first sight those songs seem to be each other's opposites, but the function of Spector's choir has a close resemblance to Wagner's woodwind. Also the function of Wagner's low brass is the same as Spector's leitmotif played by brass ensemble.

**3.2.2 Colleagues** As protégé, Spector first worked at the Gold Star Studio's, where he met Stan Ross and David Gold. In the literature they were never described as influential to the young Spector. They took him under their wings and (according to Lester Sill) '*He absorbed everything we did like a sponge*'<sup>14</sup>. Some of the literature describes how Phil Spector knew exactly where he wanted to be. Although he was able to work for the producing duo 'Leiber and Stroller' at Atlantic Records, their relationship is more described as a collegial one<sup>15</sup>. Even though other sources describe Leiber and Stroller being the first inspiration to the wall of sound. '*Leiber and Stroller were already working with multiple instrumentalists in their rhythm section*'<sup>16</sup>. Of course this was seen as one of Spector's main trademark to the wall of sound. After Atlantic, together with Lester Sill he started his own record label called 'Philles'. At the age of 21 he bought Sill's stock of the company, being America's youngest record producer.

To work with Spector was described as '*exciting, frustrating and even a little sad at times*' by Dion DiMucci. '*...It seemed to me that he was afraid of failure*'. Although known for his outbursts, George Harrison marvelled that Spector was a lot easier to work with than he had been led to believe by hearsay. Spector had a job to do, and as long everybody let him do it, he was happy<sup>17</sup>.

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<sup>11</sup> <https://musicneverdies.wordpress.com/2009/03/11/the-wagner-in-spectors-pop/> (accessed August 2, 2015)

<sup>12</sup> Richard Wagner, *Ride of the Valkyries* by. CD no.1

<sup>13</sup> Leonard Cohen, *Memories*. CD no.2

<sup>14</sup> Dave Thompson, *Wall of Pain*. London 2003. 38

<sup>15</sup> Dave Thompson, *Wall of Pain*. London 2003

<sup>16</sup> Virgil Moorefield, *The Producer as Composer: Shaping the Sounds of Popular Music*. Cambridge MA, 2010

<sup>17</sup> Dave Thompson, *Wall of Pain*. London 2003. 136

## Chapter 4. Harmonical Analysis

In this chapter a harmonical analysis will be made by studying two songs in which the wall of sound can clearly be heard. This information will be fruitful to both recreate this technique as to observe in which way the harmony will contribute to the wall. The chapter will be subdivided in a way, each song will have its own paragraph. Per song there will be searched for mutual harmonical aspects by comparing the key, meter, instrumentation, arrangement, structure and timbre by which the wall is being used.

### **4.1 Walking in the Rain (The Ronettes 1964)**

Key: B-flat major

Meter: between 107 and 109 beats per minute

Instrumentation: bass-guitar, lead and backing vocals, drums, glockenspiel, brass section, piano, harpsichord, (transistor) organ, electric guitar, acoustic guitar, tubular bells, sleight bells and other small percussion.

Because of the dense sound it is hard to define harmony and instruments. By listening to the multi tracks<sup>18</sup>, doing photographic research<sup>19</sup> and listening closely to techniques that are expected to be used, it was possible to deduce the hidden musical parts. ‘Walking In The Rain’ is a 2:35 minute R&B song written by Phil Spector, Barry Mann and Cynthia Weil.

**4.1.1 Function of the choir** The lead vocals are accompanied by three backing vocals who are most of the time arranged as tetra chords. They also have the important role to sing the ‘hook’ of the song [figure 1]. In the bridge of the song (bar 59) the backing vocals have a major role as they have a part of the main vocal line asking the lead-singer a question: ‘Johnny?’ [figure 2]. Though some of the harmony was hard to hear, the backing vocals accompany the lead vocal in a dominant way. In this way the vocals in ‘Walking In The Rain’ distinguish themselves from the function that is expected of the choir; long notes sung as background layer.

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<sup>18</sup> Phil Spector, *Walking in the Rain multitracks*. CD no.3

<sup>19</sup> Appendix A - page 33



**Figure 1** - Walking In The Rain bar 59, page 56:  
The choir distinguish themselves from their function in the wall.



**Figure 2** - Walking In The Rain bar 1, page 47:  
Hook of the Song sung by vocals

**4.1.2 Combination of instruments** A remarkable function of the wall is represented in the relationship between the tubular bells and the electric guitar. These two instrument with a total different timbre are combined and molded together as one sound. The lower sound of the guitar resonates perfectly together with the high tubular bell and its sharp attack. Spector uses this 'new sound' in two different ways. First, together with the choir he lets them play licks in unison [figure 3]. Second, whole notes played by the tubular bell combines the chord of the acoustic guitar [figure 4]. This effect blends together because it is always the highest note of the chord that is doubled.

Another function of combining instrument into a new sound is the doubling of the same instruments. By researching pictures taken during Spector's studio sessions<sup>20</sup>, guitar players are in groups of 3 or more. The audio file at 1:34<sup>21</sup> learns us that the classical guitar doubles the electric guitar playing the chords in a different voicing. The aspect of combining sounds intensifies together with reverberation, which will be researched in chapter six.

**Figure 3** - Walking In The Rain bar 38, page 53:  
Tubular Bells and Electric Guitar.

**Figure 4** - Walking In The Rain bar 42, page 54:  
Tubular Bells and Acoustic Guitar

<sup>21</sup> Phil Spector, *Walking in the Rain*. CD no.4

**4.1.3 Contribution of the percussion** The rhythm of the bass and the drums keeps the song together with a basic pattern. The other and smaller percussion seem to have another job. They support the song with their higher frequency and fast attack. This percussion can be divided into two groups. The first group includes the bell stick, maracas and claves. They form a continuous layer of rhythmic percussion in quarter notes throughout the song. The second group includes the harpsichord and the glockenspiel. This group forms a layer of melodic percussion throughout the song.

#### **4.2 Be My Baby (The Ronettes 1963)**

Key: E major

Meter: 128 beats per minute

Instrumentation: bass-guitar, contrabass, lead and backing vocals, drums, tambourine, maracas, castanets, handclaps, brass section, string section, harpsichord/transistor organ, piano, electric guitar, acoustic guitar.

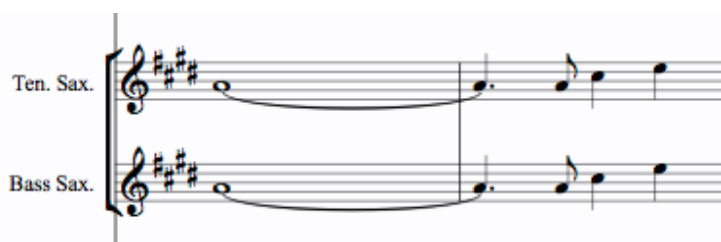
‘Be My Baby’ is a 2:41 minute R&B song written by Phil Spector, Jeff Barry and Ellie Greenwich. Because the tempo is much faster than ‘Walking In The Rain’, the decay of the consecutive eight notes is much lower, and results in a higher density of the sound. In addition to ‘Walking In The Rain’, ‘Be My Baby’ features a string section, more presentable use of the rhythm percussion and twice as many vocals. The composition consists of a I - II - V7 and I - VI - IV - V chord progression.

**4.2.1 Function of combining instruments** The track opens with a powerful R&B beat. It seems that the sound of the snare drum (only appearing on the 4th beat till the chorus) is accompanied by layering handclaps and tambourine, enforced by the castanets two bars later. This is a great example of the harmonical functions the wall of sound; four percussive instruments that make one whole. The sound is so dense that defining other instruments is nearly impossible to do by ear. The book *The Producer as Composer: Shaping the Sounds of Popular Music* describes the layered hit is also accompanied by a woodblock<sup>22</sup>. The impossibility to hear this, makes it a prosperous addition to the wall.

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<sup>22</sup> Virgil Moorefield, *The Producer as Composer: Shaping the Sounds of Popular Music*. Cambridge MA, 2010. 12-19

Apart from the percussion doubling, this technique also takes place in two other ways. First, the reed instruments play unison octaves throughout most of the parts [figure 5]. These unison licks are also followed by the strings in some parts. Second, Spector used multiple drum kits, guitars and pianos so arrangements were played double, triple or even quadruple. In an interview with Larry Levine, audio-engineer of ‘Be My Baby’ he explains they used two drummers, two bass-, three keyboard- and four guitar players<sup>23</sup>. Instead of doubling the tracks, the audio signals now bled through other microphones, which made the sound so strong that it would carry the record. In addition multiple instruments of the same category also blend to a new sound.



**Figure 5 (up)** - Be My Baby bar 25, page 39: The reed instruments play unison octaves.



**Figure 6 (right)** - Be My Baby bar 15, page 38:

**4.2.2 Continuous layer of sound** As seen in ‘Walking In The Rain’, the percussion has an important role to rattle in a certain frequency area. The hi-hat and the maracas are playing eight notes throughout the chorus continuously, covering the 5-7 kHz spectrum of the song. In addition the castanets play 13 hits a bar by playing a flamingo pattern. The function is to cover the higher frequency register by consecutive pulses. There are four more ways this continuous layer is created. Starting in the second part of the first verse, the choir fulfills its purpose by singing long tied whole notes. This continues in the next verses and bridge and is being seen as one of the main additions to the wall of sound [figure 6]. Also the keyboards and the guitar play chords in eight notes, just like it did in ‘Walking In The Rain’,

<sup>23</sup> Richard Buskin (2007). *Classic Tracks, The Ronettes ‘Be My Baby’* [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

## Chapter 5. Microphones

Having described the harmonic framework, now comes the part which will focus on the technical side. Preceding the technical analysis in chapter 6, the following two chapters will focus on Spector's studio setup. In this way the conclusions found in this chapter will lead to new information that will be processed in the technical analysis. This chapter will research the microphones techniques Spector used during his studio sessions. The first paragraph will explain the specifications and types of the microphones. This information can guide through the research process and let the reader understand the choices of microphone use. The second paragraph will research the microphones and techniques used by Spector as said in interviews or seen in photographs. Each subparagraph is divided into recording methods of each specific instrument.

### 5.1 Microphone specifications

Microphones are the first step towards sound registration. Each type of microphone has its own quality that makes it suitable for specific situations. The dynamic<sup>24</sup> -, ribbon<sup>25</sup> - and the condenser<sup>26</sup> microphone are the most popular microphone types used in the studio. A noticeable quality of microphones are the characteristics which classify how well the microphones pick up sounds from various directions. Each microphone has its own characteristic. Since the production of the Neumann U47 they came with a switchable pattern knob optionally. It provided the user to choose between cardioid, omni- and later bi-directional.

Omnidirectional microphones are equally sensitive in all directions. This results in a higher sensitivity of the room sounds. In this way microphone bleeding is more plausible (see chapter 6).

In addition omnidirectional microphones are less inclined to plosive sounds. -

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<sup>24</sup>Dynamic microphones: the sound wave is converted into an electromagnetic pulse by a moving diaphragm that is coupled to a moving coil. When the diaphragm picks up the sound, it makes the moving coil vibrate. Magnetic induction generates an electromagnetic pulse. The moving coil does not vibrate at a speed higher than 10-15 kHz, therefore lacking detail in the higher frequency register. The output level is quite low so it can stand high level of sound pressure (till 150 dB). For this reason the dynamic microphone types are best suited near loud sources. which makes it perfect to record guitar amps, brass and drums.

<sup>25</sup> Ribbon microphones are actually the same as dynamic microphones but instead a thin ribbon takes place of the moving coil and diaphragm. More than dynamic -, ribbon microphones have more extended top end and warmer qualities. This makes it good for brass, percussion or overhead.

<sup>26</sup> Condenser microphones: the sound wave makes the ultra thin diaphragm vibrate. Parallel to this plate is another conducting plate but fixed. The movement of the diaphragm generates differences in electricity. The difference is causing variance in the output voltage to excite an electrical signal close to the incoming sound wave. Because the accuracy and sensitivity of the condenser mic is much more higher than dynamic microphones. For this reason condenser microphones are for the most situations main choice in the studio. Beware; they are very fragile! To gain a constant power for the diaphragm, they are in need for an external power source. Another reason is to give the built-in amplifier a small electric signal. The +48 Volt button 'phantom power' is found on today's pre-amps and mixing consoles. In the days of Spector, an external power was connected to the microphone.

A cardioid microphone is sensitive from sounds coming from the front and sides. A side effect of this characteristic is the proximity effect. When the audio source approaches closer to a cardioid microphone, a rise in lower frequency sound is noticeable. Instead of an interference, it is often used to boost the lower frequency in vocal tracks. The bass-cut button was added later to counter this effect. Figure of eight (or bi-directional) microphones rejects sounds from the sides. This characteristic proves itself useful in situations where audio sources need to be filtered out. A perfect example (which Spector too made use of) is to filter the playback through speakers while recording the vocals.

## **5.2 Microphones used in the wall**

With the basic information gained in the previous paragraph we take a leap back to the 1960's again. Spector used the same musicians, the same studio and the same engineers over and over again. It was no coincidence that when researching microphones, the same types kept showing up.

**5.2.1 Recording vocals** Neumann U47 microphone was unveiled in 1948 by the Neumann company. It quickly became worldwide the studio standard and it was the first microphone with a switchable pattern knob to choose between characteristics. Eight year later the U48 was unveiled. They had the same sound, but the characteristic were different. The U47 was able to switch between cardioid and omnidirectional. The U48 could switch between cardioid and bi-directional. This information is particularly interesting to research the workaround of Phil Spector.

[Figure 7]<sup>27</sup> shows Phil Spector and Darlene Love using the Neumann U47 in the Gold Star Studio to record lead-vocals on an unknown wall of sound track<sup>28</sup>. A logical choice is to record with a cardioid characteristic (because bi-directional is not supported on this microphone), but this can not be determined. It is also known that the lead vocals were recorded separately from the instrumental track. This fact can also be deduced by the lack of lead vocals in the multitrack recordings. The RCA77-DX (poly-directional ribbon) is also said to be used as a lead-vocal microphone in the wall of sound recordings.<sup>29</sup>

How odd it might seem these days, back in the 1960's the use of a headphone was quite rare. There were very few headphone designers around, and most headphones were created for military

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<sup>27</sup> Appendix A - page 33

<sup>28</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

<sup>29</sup> <http://www.mixonline.com/news/profiles/classic-tracks-righteous-brothers-youve-lost-lovin-feeling/365140> (accessed June 17, 2015)

use<sup>30</sup>. Carol Kaye, regular bass and guitar player in the Gold Star studio, told me that in the early 60's no headphones were used. Soon, Phil Spector made every musician wear headphones, but the exact period is unknown. It can be determined that it was somewhere between 'Be My Baby' and 'You've Lost That Lovin' Feelin'.' Pictures visualize musicians wearing headphones on the 'Lovin' Feelin'" session, but lacking the presence of headphones at the 'By My Baby' session. In some studios, instead of using headphones, it was very common to play the backing track on a speaker next to the vocalist. This method has its fault: the original track was leaking through the to be recorded track. To counter this side effect as much as possible, a workaround was created. A bi-directional condenser microphone was placed next to the speaker. As the sound is rejected from both sides, it is possible to place it in a way the speaker sound is received to a minimum. Some leakage, of course, is still audible and if it was not for the dense sound Spector was producing, this would possibly be audible in the final mix (like it is on some less dense produced record of this time period).

When listening to the multitracks of 'Be My Baby' instrumental tracks are clearly bleeding through the vocal microphone. We can establish that the backing vocals were recorded with a bi-directional condenser microphone in a way the source of the original track was rejected to a minimum. The singers possibly gathered in the front- and rear sides of the microphone. Other reasons for having more backing vocalist gather around one bi-directional microphone was to force them to self-balance their vocals. In addition the mixing desk had only a limited number of microphone inputs<sup>31</sup>. None of the photographs shows popfilters on microphones, even though they were already invented. Stan Ross said: '*...we didn't use pop filters and wind screens, we got mouth noises. Isn't that life?*'<sup>32</sup>

**5.2.2 Recording percussion** The successor to the U47 and U48 was the Neumann U67 that was released in 1960. It supported both omni, cardioid as figure of eight patterns. In addition a bass roll off switch was designed to prevent the proximity effect that occurs in closed miked positions in the cardioid characteristic. Another great selling point was the -10db switch. The pop/rock scene was developing fast, and music became much louder. Where the previous versions of the Neumann

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<sup>30</sup> Ryan & Kehew, Recording the Beatles. United States 2006. 252

<sup>31</sup> Ryan & Kehew, Recording the Beatles. United States 2006. 168

<sup>32</sup> <http://cavehollywood.com/the-historic-gold-star-recording-studio-and-the-audio-legacy-of-producer-phil-spector-c-2009-harvey-kubernik/> (accessed October 16 2015)



weren't designed for close-miking, the U67 could now stand greater sound pressures. This resulted the U67 being able to record guitar-amps, base-amps and drums.

For this reason, Spector was able to use the U67 as overhead on the drums<sup>33</sup>. It was gained quite minimally because the drums (sometimes two kits!) were always very dynamic, and leaked through other microphones anyway (particularly the acoustic guitar mics). The kick was miked to give the Blue Sparkle Ludwig drumkit<sup>34</sup> enough presence. This was done with a RCA-77 (the same microphone as the backing vocals were recorded with). It was likely that this was done in a cardioid pattern, stimulating the proximity effect to create extra low tones by placing it 2-4 inches off the source. To prevent high pressures breaking the ribbon, the microphone was either placed further away, or (more probable) placed in an angle higher than 90° like The Beatles did on their recordings<sup>35</sup>.

*'It was only one drums, usually [and] fifteen people playing percussion instruments'* told Hal Blaine in an interview<sup>36</sup>. As researched in chapter four, Spector made use of multiple percussion instruments; according to session drummer Hal Blaine even up to fifteen. [Figure 8]<sup>37</sup> shows Spector himself recording small percussion together with Sonny Bono in the middle of the studio. Not entirely clear is the microphone placement, but it seems they made use of the leakage of other microphones as they do not gather around a single microphone. Listening to the tracks proves that the small percussion is really dominant though, but mainly the castanets and the maracas are. The bells and other small percussion are less dominant and therefore likely to be recorded as leakage through other microphones.

In an interview with Johnny Ramone, it is said that he recorded small percussion and handclaps between the two drumkits (that were both provided with U67 as overhead)<sup>38</sup>. This could mean that dominant small percussion was either placed around important condenser microphones, or they were in possession of their own microphones. As for the smaller less dominant percussion, they could easily be placed in the crowded room. Larry Levine, studio engineer on Phil Spector's

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<sup>33</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

<sup>34</sup> <http://www.musicradar.com/news/drums/classic-drum-sounds-be-my-baby-590941> (accessed July 4, 2015)

<sup>35</sup> Ryan & Kehew, *Recording the Beatles*. United States 2006. 179

<sup>36</sup> Denny Tedesco. *The Wrecking Crew* - 101 min. Documentary, 2008 - 29:18

<sup>37</sup> Appendix A - page 33

<sup>38</sup> Harvey Kubernik (2011), Phil Spector, the musical legacy: Part four <http://www.goldminemag.com/article/phil-spector-the-musical-legacy-part-four> (accessed October 16 2015)

many songs found out that the more people you put in the room, the better the sound is. *The bodies provide dampening*<sup>39</sup>. This also is a side effect of the many musicians playing smaller percussion.

**5.2.3 Recording guitars** Phil Spector always started with the acoustic guitars, getting them out in the studio to play their figures.<sup>40</sup> It seems that Spector saw them as an important basis for the song, though they are not easily heard on the records. These guitars were close-miked mostly with a RE15, a dynamic cardioid microphone.<sup>41</sup> On some photographs, they took a central position in the studio, facing towards the drums, surrounded by the other instruments. A possible reason for this position was to prevent leakage from the more dynamic instrument into the acoustic guitar microphones to a minimum. It was possible to gang up to three microphones into a single input for instruments groups, they gave the sound part of its structure and did not need to be heard individually.<sup>42</sup> The electric guitars were sometimes recorded in groups of three or four musicians. This occasionally resulted in bleeding through the other microphones. Carola Kaye wrote that the guitar players always kept the volumes down low on the amplifiers to prevent leakage to a minimum. She also explained that the secret of the electric guitars in the wall of sound was to approach them as acoustic guitars. '*They would mike an electric guitar acoustically and dump a lot of echo on it.*'<sup>43</sup> This statement can be proven by researching the photographs [figure 9]<sup>44</sup> of the guitar players of the wall of sound. The same microphones as the acoustic guitars were used close to the guitar cabinet.

The bass guitar was recorded with a Fender bass together with an upright bass. It is known that larger sessions (like 'You Lost That Lovin' Feelin') added a Dano bass. [Figure 8]<sup>45</sup> shows the Shure 55 being used on the upright bass. This classic microphone was excellent for vocal pickup in any situation from radio broadcast to live shows. The reason why Spector would choose this particular microphone for an instrument with low sound waves might be because of its attack. The Shure 55 would pick up the higher attack sound of the upright bass well. In combination with the

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<sup>39</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

<sup>40</sup> <http://www.mixonline.com/news/profiles/classic-tracks-righteous-brothers-youve-lost-lovin-feeling/365140#sthash.DvMM6B8A.dpuf> (accessed June 17, 2015)

<sup>41</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

<sup>42</sup> <http://www.mixonline.com/news/profiles/classic-tracks-righteous-brothers-youve-lost-lovin-feeling/365140#sthash.DvMM6B8A.dpuf>

<sup>43</sup> Bass Heroes: Styles, Stories and Secrets of 30 Great Bass Players: From the Pages of Guitar Player Magazine

<sup>44</sup> Appendix A - page 33

<sup>45</sup> Appendix A - page 33

Fender bass it would have both low and midrange attack in its sound register. The Fender bass was close miked with a Shure SM57.

**5.2.4 Recording keys** As well as the guitars, there were multiple pianos used on a Spector session. Most of the time he made use of a grand -, upright - and electric piano, each using their own input in the 12 input recording console. The piano players played slight variations of the same pattern to make the sound coming from the piano more dense<sup>46</sup>. Sometimes there were multiple musicians playing different registers on the same piano. We can determine the microphone use of the electric piano by both photographs and interviews. In front of the electric piano speaker a microphone was placed. Usually this was an Electro-voice RE15 and in other occasions the Shure 57 was used. Photographs do not give clear information about the microphone used on the grand piano because the half opened topboard is always blocking the view. Information was found about later sessions in the Gold Star studio were a Sennheiser 421 was used to record a grand. We can only guess that this microphone was also used during the wall of sound sessions.

**5.2.5 Recording brass** The RCA 44, a bi-directional ribbon, was an incredibly successful microphone and well known for its capabilities to record brass instruments. Both interviews and photographs show the RCA being used on the trumpets and trombones. Always attached to a big and steady microphone pole with counterweight because of its heavy eight pound weight. The RE15 was used on the saxophones, most of the times appearing in a group of three players.

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<sup>46</sup> Sound of Song. Season 1, Episode 2: Reeling and Rocking.

## Chapter 6. Technical analysis

The previous chapter already explained some technical specifications used in the wall of sound. This chapter will go further, and could be seen as a manual that was used to recreate the ‘Walking In The Rain’ session. The first paragraph will research the studio setup of this recording to rebuild it again in the practical part of this thesis. The second paragraph will explain every technical addition that Spector used in his recordings.

### 6.1 Studio Setup

There is not any information of the studio setup available of ‘Walking In The Rain’. Though, for the purpose of imitating the wall of sound in the technical part of this thesis it is necessary to know how this setup was created. The approach of this paragraph is to research photographs and articles about the Gold Star studio setup to deduce the technical part of this session. The information might not be 100% accurate, but it will be very close to the session of 1964.

6.1.1 The ‘Walking In The Rain’ sessions Welcome to the Gold Star studio. As seen on the photographs it is a very small but deep room (19x24x13 ft.). [Figure 11]<sup>47</sup> shows a map of the possible setup during the ‘Walking In The Rain’ session. It is known that Spector placed groups with the same instrument together in the studio. The main pattern of the song is a harpsichord played in eights. The attack of this instrument is very dominant. Underneath this pattern the electric piano is hidden. It is hard to hear but whenever focusing on the timbre, there is clearly an electronic sound to be heard. The multitracks reveal a very old piano, impossible to hear on the master track. Their place in the studio is based on [figure 10]<sup>48</sup>, three key-instrument placed near the door. Instead of a grand piano, as seen in the photograph, a harpsichord is now used.

Based on [figure 8]<sup>49</sup>, the tubular bells and music box are placed to the mid-right. All the photographic material shows the brass section placed in the right corner, giving microphone 6 to the trumpets and trombones, and microphone seven to the saxophones. The guitars are placed in the left corner. Against the mid-left wall the drums are placed. This is confirmed by Larry Levine ‘otherwise they don’t hear themselves and they play too loud trying to hear themselves<sup>50</sup>’. The

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<sup>47</sup> Appendix B - page 34

<sup>48</sup> Appendix A - page 33

<sup>49</sup> Appendix A - page 33

<sup>50</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm)

maracas could be played by the drummer, so it was picked up by the drum microphones (12 and 13). There is a whole bar delay for the maracas to start. The drummer, could have used this time to pick up the maracas. The bells were very dominant on this session. They could have been placed behind the drummer. More likely is their position in the middle of the studio. As seen on [figure 8], Spector recorded bells together with Sonny Bono in the center, probably making use of the leakage of other microphones. There could be a chance that microphones four and five are placed in omnidirectional to make the bells even more dominant. Both upright bass, as the electric bass were placed in the right corner. This particular setup used fifteen microphones. As we know, the guitars were only using one channel on the mixer. The mixer had twelve inputs, so this setup would use eleven inputs (if the bass guitars were also using one channel). The twelfth input would have been used for talkback.

## **6.2 Technical additions**

**6.2.1 Microphone bleed** When microphones pick up sounds from a source other than it is intended for, we speak of ‘bleeding’ or spilling. Usually this is an unwanted side-effect, reduced to a minimum by screens, but Spector used it as a tool to enforce the wall of sound. By doing this, he created a perceptive depth to his production. It was never meant to use this method on purpose. The Gold Star studio was so small and crowded that it was inevitable to avoid spilling sound into other microphones. Larry Levine said that he did not want all the bleed between instruments, trying to prevent it as much as possible with reflection screens as seen on many photographs<sup>51</sup>. There is a famous anecdote that he was creating a monitor mix for Spector while tracking and started from scratch, bringing each instrument up in the mix one at a time when Spector said ‘*Stop, thats it, don't touch a thing!*’ But Levine had not brought up some of the main guitars you could only hear them bleeding through other microphones!<sup>52</sup> In the end the microphone was never tuned on.

As result of the bleeding, overdubbing was almost impossible. Imagine that after a session you wanted to replace an instrument track by overdubbing. It would be made impossible because the to be replaced track was spilled all over the other microphones. Possibly this is a reason why Spector never did overdubs of the instrumental tracks with exception of the strings and vocals. Why the strings would not be overdubbed is unknown. Recording strings and brass together with a ribbon gives a certain warmth, that logically would be a wanted element in the wall. It might be

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<sup>51</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

<sup>52</sup> The Wrecking Crew: The Inside Story of Rock and Roll's Best-Kept Secret

because of the small space in the studio, or maybe because the strings were overpowered by the other instruments (too much bleeding). Even with some of the multitracks in our possession, hearing an example of the bleeding is nearly impossible. The only example is the bleeding of the backing track through the vocalist's microphone. When being able to control all faders separately, it would be possible to hear the bleeding.

One of the main questions is answered in this sub paragraph. Spector used multiple instrumentalists playing the same instrument pattern. Would it be possible to overdub certain instruments with one musician to prevent hiring multiple? Microphone bleeding was an important addition to the wall of sound. By overdubbing, a sound is created from the direct input of the microphone, but the sound would not be registered through the other microphones set up in the studio. This would result in a thinner sound.

**6.2.2 Bass in fifths theory** While reading through interviews with people that worked on the wall, I came across an article in which Jeff Barry was interviewed<sup>53</sup>. Barry was co-writer of 'Be My Baby', 'Da Doo Ron Ron' and 'And Then He Kissed Me'. In this interview he was basically explaining the wall of sound formula. When explaining the function of the bass guitars he said '*You're going to use two basses in fifths, with the same type of line, and strings*'. The statement of playing bass guitars in fifths showed up more frequent on the internet, but nobody seem to be able to ground this phrase. Being unable to hear the fifth interval played by two bases in the Spector songs, I decided to transcribe a second baseline that was identical to the one that was audible in 'Be My Baby'. As expected this didn't sound right. Torturing my head in the next upcoming weeks, I met someone on one of the music forums who worked with Jeff Barry. He wrote: '*I spoke to him about that paragraph you mentioned. He said most of it is right but he cannot recall mentioned the bass/fifth harmony line.*' Unfortunately Barry was not able to confirm this part of the interview he gave several years ago. Finally, having spoken to Carol Kaye she disproved this theory.

**6.2.3 Echo chamber** These days adding reverb to a track is only a matter of selecting a reverb-plugin. Back in the 60's they made use of echo chambers. The Gold Star studio was known for its excellent chamber. A signal from the studio mixing desk was fed to an eight-inch speaker, that was located in the echo chamber. This sound, was now reverberating through the chamber into a microphone that was placed at the other end of the chamber. This microphone now picked up the sound, coming out of the recording studio, now with the reverberating added. Whenever the

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<sup>53</sup> Richard Williams, *Phil Spector: Out Of His Head*. 2003

microphone was placed farther away from the speaker, the signal would have more reverb. The microphone signal was then fed back to the mixing desk. There the sound was blended with the 'dry' input<sup>54</sup>. This was a common effect used by Spector, blending the 'wet' sound with each input individually. Often drowning the input with reverb, as heard on the snaredrum in 'Be My Baby'. The microphone used for recording the reverberation was a RCA flat ribbon. Gold Star studio was known for its unique echo-chamber, designed by Stan Ross himself. It is possible to hear the effect of this reverb on Spector's voice when he is communicating with the musicians through the talk back.<sup>55</sup>

**6.2.4 Mono** Spector recorded everything in mono, even when stereo became the studio standard. According to Levine, Spector said: '*[When recording mono] I can never come back and reproduced what I had the next day. Mono is logged in, and people always gonna hear it that way.*' Apparently Spector's motivation for mono was that what he heard in the studio and captured on tape, would always sound that way. Also, sounds are easier to define when coming out of one speaker. The technique of the wall masks definition by blending it into a whole. The studio engineer always made a backup so whenever Spector wanted to go back to four track to mix in stereo, he could. But he never did.

**6.2.5 Psychological addition** Last of all, lots of sources say that Spector used psychological ways to create the wall. By not giving breaks, he would nearly exhaust the musicians of their energy. They would continue to fatigue and lose their creativity. After a while they would function as one machine instead of separate musicians. This theory is denied by Levine<sup>56</sup>. Spector did not give breaks because he was too afraid they would touch the microphones and lose the sound he spend so long to make. This fact is confirmed in the multitracks where Spector kept asking the musicians: '*Don't touch the microphones, people!*'

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<sup>54</sup> <http://matt-hollis.com/2010/11/18/phil-spector-production-techniques/> (accessed September 10, 2015)

<sup>55</sup> Phil Spector, *Walking In The Rain* multitracks - CD No.3

<sup>56</sup> [http://www.soundonsound.com/sos/apr07/articles/classictracks\\_0407.htm](http://www.soundonsound.com/sos/apr07/articles/classictracks_0407.htm) (accessed May 18, 2015)

## Chapter 7. Preliminary conclusion

### 7.1 The wall harmonically explained

Rather than a post production or mixing technique, the creation of the wall of sound starts already with the arrangements. The most important harmonic element is the combination of multiple (different) instruments playing the same notes, whether in the same or in a different octave, unison licks or chords. Brian Wilson, composer of the ‘Beach Boys’ and big fan of Spector’s sound said the following: *‘There is a thing called combination of instruments, where you combine a guitar and a piano into a different sound. This turns into a different sound, because you have two things doing it ... He [Phil Spector] would combine different sounds all together into one sound.’*<sup>57</sup> The combination of the same instruments is also part of this technique, but has one more important technical addition as it happens to consolidate the microphone bleeding (further explained in the technical analysis).

Another important aspect are the long notes arranged for the choir. Although it has a different sound than the small percussion instruments, they share the same function; to cover its own frequency spectrum in a continuous layer of sound. Spector is using this masking technique to dissolve definition. We can say the same for the guitar and piano that we can find often played in a layer of eight notes. This technique has a reference to the way classical composers work (see page 10. ‘a Wagnerian approach’). Virgil Moorfield confirms this theory with his vision on how harmony enforced the wall of sound. *‘He [Phil Spector] was using the studio as his orchestra, arranging the timbres of various voices, instruments, effects and room tones in much the same way as a more conventional composer would employ the colors of the orchestra ... To him, the studio was a musical instrument, to be tuned and practiced on and performed with.’*<sup>58</sup>

### 7.2 The wall technically explained

The most important technical choice was the use of microphone bleeding. Started as an unwanted side effect, the bleeding soon became one of the most important technical addition. To combine the same instruments in a group and let their sound consolidate through microphones other than it is intended for, creates a dense sound. This is the reason it is not possible to double a track played by one musician. A secondary technical addition is found in the reverberation. An echo chamber is a

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<sup>57</sup> Sarah Aspinall. *Art that shook the world. Season 2, Episode 2: The Beach Boys, Pet Sounds*. BBC - July 20, 2002. 22:00

<sup>58</sup> Virgil Moorefield, *The Producer as Composer : Shaping the Sounds of Popular Music*, Cambridge MA, 2010. 14



hollow space used to produce echoing or reverberant sounds. The wet sound gave the original signal a much longer decay, thus giving the track a much denser sound. Other technical choices that Spector made to create the wall of sound was to mix in mono. This resulted that the song sounded everywhere the same, but more importantly sounds are harder to define when coming out of one speaker.

## Chapter 8. Implementation

This thesis could be seen as a guideline for recreating the wall of sound...or at least to recreate the vibe. I used this information to recreate Phil Spector's 'Walking In The Rain' that can be heard on the attached CD, track number 5. Although the information written here is complete and reliable, it should not be a blueprint for recreating 'the Spector sound'. This means try not to use it in a way you would use a cookbook. Even though I had this thesis under my arm when setting up the microphones for the session, I made plenty of choices that were not described in any source. This is because your ears should be your main tool, not some papers. Try to make decisions by experimenting, comparing and discovering. Only then it is possible to recreate the true wall of sound feel.

### **8.1 Inside the Studio**

This having said, we can focus on the possible problems. First of all, the process requires a lot of people. Two months in advance I made sure everyone was on board, and kept them updated regularly. In my eyes it was important that they are mainly focused on the music. This means I tried to serve anything as much on a silver platter as possible for instance by printing the sheet music, and arranging lunch and drinks. I worked with talented jazz musicians, so I had to convince them why they would join a session (without budget) where they needed to play plain open chords. Luckily for me they were interested in the process, played fantastic and nobody complained at all. Regardless, it was a major challenge to scout them, and hold them together. A small side note is that trained and schooled musicians are required to record his tracks. After the session, some talented jazz musicians told me that it takes a great amount of discipline to keep playing those chords in eights.

Placing the microphones and doing the instrument setup took two hours. Luckily we had some extra time for errors planned. We had a click track problem that was discovered when the musicians were already in, so it delayed the session only a bit. Because you work with lots of people together, everyone has their own opinion about the sound. Gather all their information and make choices based on that information. Do not get influenced. If you doubt which way is the best, do not hesitate to try both ways. But above all, follow your ears.

## **8.2 In the mix**

Today's technology makes lot music producers spoiled. 'We fix it in the mix' is a frequently used excuse to avoid difficulties faced during the recording. Spector recording method has one big downside. You can not fix it in the mix. This makes it very important that the decisions made during the session are well-considered. For instance, mixing 'Walking In The Rain' made me feel that the sleigh bells felt a bit too high. Normally it would be possible to pitch it down in the mix, because it has its own channel. However, it was impossible for me to do now because it would manipulate the bleeding of the other instruments and make it clash! To prevent these situations it is necessary that everything is properly planned. The producer should make schemes for each instruments and notate what sound it should achieve and how to obtain it.

## Chapter 9. Conclusions

More than a year ago someone asked the question: *'Do you think that magical "wall of sound" of Spector can be captured with today's plugins?'* on an internet forum. At that time I was unaware that this question would be the start of a journey through Phil Spector's versatile production technique. After researching the wall of sound both practical and theoretical, it was possible to answer this question.

We cannot fully recreate Phil Spector's wall of sound. Though, it is possible to come almost identically close. I think it is possible to create more than only a vibe. But it would not be possible to get that identical sound again.

For me, this thesis gave me the chance to record with a huge crew of musicians. I used to be one of the 'we fix it in the mix' producers. The wall of sound technique made me value to record all instruments together and to make choices inside the studio instead of behind the mixing table. Theoretically, it gave me the insight of what exactly gave the west-coast sound of the sixties. But it also gave me the realization that instead of imitating we should borrow certain aspects of a musical technique and use it to create the sound of today. That is why I would recommend anyone that is recreating or imitating a sound, to always use your ears and to consider to put your own creativity above the theory.

As written in chapter eight, different techniques were used than Spector did because we do not have the same material they possessed. And even if we would had the same gear, it would still be impossible to have the same musicians, room, gear or the same unique echo chamber. But why would we want to have the exact same sound? The music technology of today is dashing, and these days people want to hear songs and music techniques that they can relate to now. Someone asked Spector once: *'Why don't people make songs like Cole Porter anymore?'* His response to his question was: *'But we don't have presidents like Abraham Lincoln anymore either. Rock n' Roll has a spontaneity that doesn't exist in any other kind of music. It's very today. It's what people respond to today.'*<sup>59</sup>

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<sup>59</sup> Dave Thompson, Wall of Pain. London 2003

## Chapter 10. Sources

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## **10.2 Discography**

CD track No. 1: Richard Wagner, *Ride of the Valkyries*

CD track No. 2: Leonard Cohen, *Memories*

CD track No. 3: Phil Spector, *Walking In The Rain* multitrack

CD track No.4: Phil Spector, *Walking In The Rain*

CD track No.5: Phil Spector, *Walking In The Rain* recreated as practical part for this thesis

## Appendices

### Appendix A - Photographs



[Figure 7]



[Figure 8]

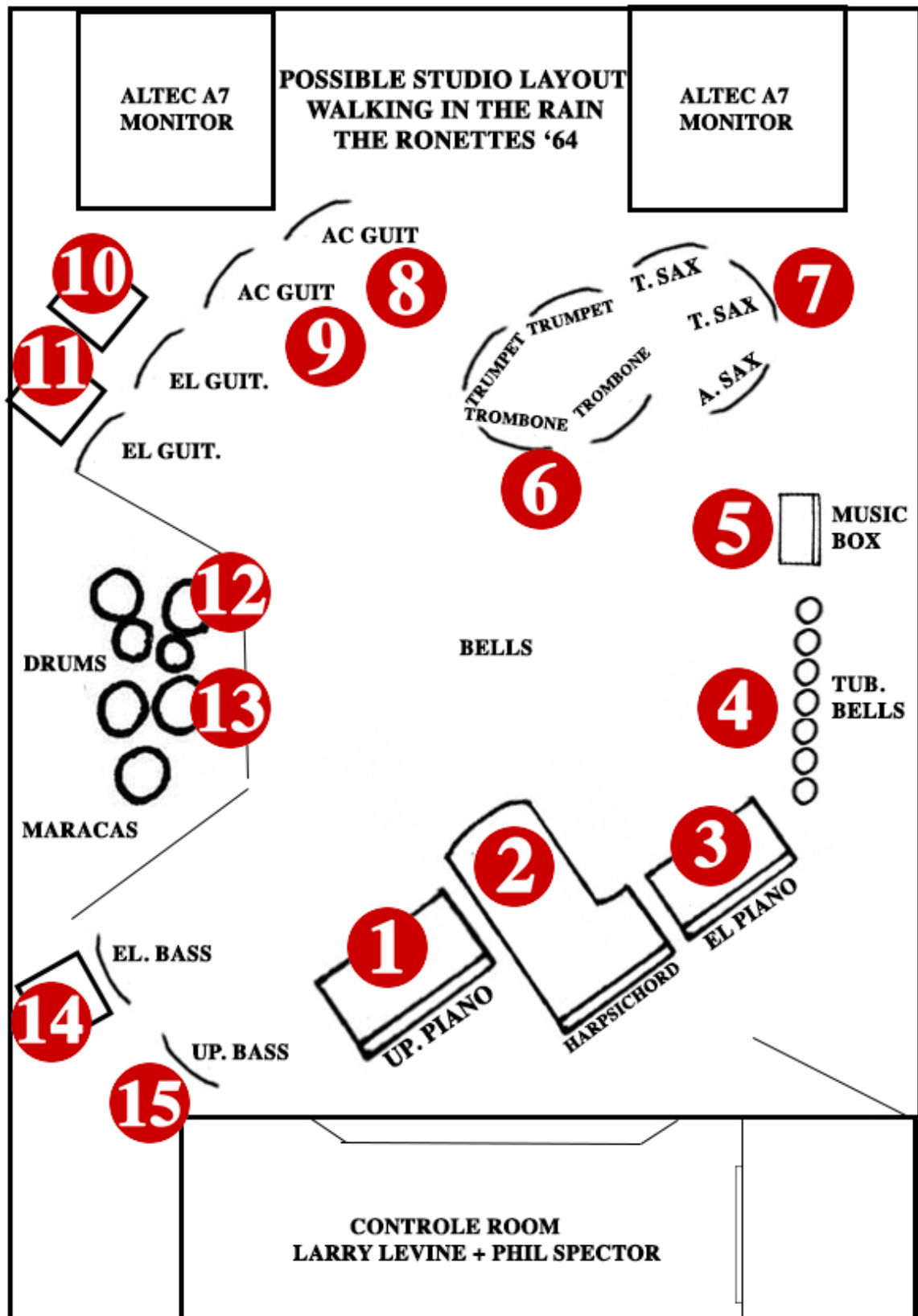


[Figure 9]



[Figure 10]

## Appendix B - Possible studio layout Walking In The Rain



[Figure 11]



Microphone 1 Electro-voice RE15 or Shure SM 57

Microphone 2 Unknown

Microphone 3 Sennheiser 421 (possibly)

Microphone 4 Unknown

Microphone 5 Unknown

Microphone 6 RCA 44

Microphone 7 RE 15

Microphone 8 RE15

Microphone 9 RE15

Microphone 10 RE15

Microphone 11 RE15

Microphone 12 U67 (overhead)

Microphone 13 RCA 77 (kick)

Microphone 14 Shure SM57

Microphone 15 Shure 55

## Appendix C - Be My Baby transcription

Jeff Barry, Ellie Greenwich and Phil Spector  
Arrangement by Hans Nieuwenhuijsen

**INTRO**  $\text{♩} = 128$

**A**

Voice: The night we met I knew I \_\_\_\_\_ Need-ed you

Voice

Voice

Voice

Voice Male

Trumpet in Bb

Trombone

Tenor Saxophone

Bass Saxophone

2x Violin 1

2x Violin 2

2x Viola

Violoncello

Piano x3

E E F#7

Electric Guitar

Electric Bass+Contra Bass

$\text{♩} = 128$

**A**

Maracas

Casianets

Tambourine

Handclap

$\text{♩} = 128$

**A**

Drum Set x2

8

Voice

so And if I had the change I Nev-er let you go So won't you say

Voice

Och

Voice

Och

Voice

Och

Voice

Och

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

B E F#7 B G#7

E. Gtr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

14

Voice

— you love me — I'll make you so proud of me — We'll make them turn their heads Ev - ery place we go so won't you please

Voice

— Hoe — Och — Hoe —

Voice

— Hoe — Och — Hoe —

Voice

— Hoe — Och — Hoe —

Voice

— Hoe — Och — Hoe —

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

C#7 F# B7

E. Gr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

27 **B**

Voice: Be my lit-tle ba - by... Say you be my dar - ling Be my ba - by... now... A

Voice: Be my be my ba - by My onc and on-ly ba - by Be my be my ba - by My onc and

Voice: Be my be my ba - by My onc and on-ly ba - by Be my be my ba - by My onc and

Voice: Be my be my ba - by My onc and on-ly ba - by Be my be my ba - by My onc and

Voice: Be my be my ba - by My onc and on-ly ba - by Be my be my ba - by My onc and

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

E. Gr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

**B**

28 C

Voice: wah ha ha how I'll make you hap - py ba - by just wait and see for ev - cry kiss you give me I'll give you

Voice: on-ly ba - by Och hoc hoc Och hoc Och hoc hoc hoc

Voice: on-ly ba - by Och hoc hoc Och hoc Och hoc hoc hoc

Voice: on-ly ba - by Och hoc hoc Och hoc Och hoc hoc hoc

Voice: on-ly ba - by Och hoc hoc Och hoc Och hoc hoc hoc

Tpt.:

Tbn.:

Ten. Sax.:

Bass Sax.:

Vln. 1:

Vln. 2:

Vla.:

Vc.:

Pno.:

E. Gtr.:

E. Bass:

Mrs.:

Cast.:

Tamb.:

H.C.:

Dr. C

36

Voice

three Oh\_sinds the day\_ I\_ saw\_ you\_ I\_ have\_been wai - ting for you\_ You know i\_ will\_ a\_ dore you Till e - ter - ni - ty

Voice

Och hoc Aah\_ haa\_ Aah\_ haa\_

Voice

Och hoc Aah\_ haa\_ Aah\_ haa\_

Voice

Och hoc Aah\_ haa\_ Aah\_ haa\_

Voice

Och hoc Aah\_ haa\_ Aah\_ haa\_

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

B C#7 C#7 F# B7

E. Gtr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

44 D

Voice *so won't you please Be my lit-tle ba - by Say you be my dar - ling Be my ba - by*

Voice *Be my be my ba - by My one and on-ly ba - by Be my be my ba - by*

Voice *Be my be my ba - by My one and on-ly ba - by Be my be my ba - by*

Voice *Be my be my ba - by My one and on-ly ba - by Be my be my ba - by*

Voice *Be my be my ba - by My one and on-ly ba - by Be my be my ba - by*

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1 *mf*

Vln. 2 *mf*

Vla. *mf*

Vc. *mf*

Pno.

E. Gtr. *E C#7 A*

E. Bass

Mrcs. D

Cast.

Tamb.

H.C.

Dr. D



51

**E**

Voice: now\_\_ A wah ha ha how how

Voice: My onc and on-ly\_\_ ba - by Och\_\_ hoc hoc Och hoc Och\_\_ hoc

Voice: My onc and on-ly\_\_ ba - by Och\_\_ hoc hoc Och hoc Och\_\_ hoc

Voice: My onc and on-ly\_\_ ba - by Och\_\_ hoc hoc Och hoc Och\_\_ hoc

Voice: My onc and on-ly\_\_ ba - by Och\_\_ hoc hoc Och hoc Och\_\_ hoc

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1: marcato

Vln. 2: marcato

Vla.

Vc.

Pno.

B E F#7 B E

E. Gr.

E. Bass

**E**

Mrs.

Cast.

Tamb.

H.C.

Dr.

59 **F**

Voice: So come one— and ple-ca-as Be my lit-tle ba - by— Say you be my dar - ling  
Be my lit-tle ba - by— oh ho ho ho ho oh

Voice: hoc Och hoc Be my be my ba - by My one and on ly—ba - by Be my

Voice: hoc Och hoc Be my be my ba - by My one and on ly—ba - by Be my

Voice: hoc Och hoc Be my be my ba - by My one and on ly—ba - by Be my

Voice: hoc Och hoc Be my be my ba - by My one and on ly—ba - by Be my

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

E. Gr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

**F**

66

Voice

Bc my ba - by now A wah ha ha how Bc my lit-tle ba -  
Oh ho ho ho ho A wah ha ha how Bc my lit-tle ba -

Voice

bc my ba - by My one and on-ly ba - by Bc my bc my ba - by

Voice

bc my ba - by My one and on-ly ba - by Bc my bc my ba - by

Voice

bc my ba - by My one and on-ly ba - by Bc my bc my ba - by

Voice

bc my ba - by My one and on-ly ba - by Bc my bc my ba - by

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

marcato

Vln. 2

marcato

Vla.

Vc.

Pno.

B E

E. Gtr.

E. Bass

Mrcs.

Cast.

Tamb.

H.C.

Dr.

73

Voice

- by\_\_ Say you be my dar - ling Be my ba - by\_\_ now\_\_ A wah ha ha how  
by\_\_ oh ho ho ho ho oh Oh ho\_\_ ho ho ho

Voice

My onc and on - ly\_\_ ba - by Be my be my\_\_ ba - by My onc and on - ly\_\_ ba - by

Voice

My onc and on - ly\_\_ ba - by Be my be my\_\_ ba - by My onc and on - ly\_\_ ba - by

Voice

My onc and on - ly\_\_ ba - by Be my be my\_\_ ba - by My onc and on - ly\_\_ ba - by

Voice

My onc and on - ly\_\_ ba - by Be my be my\_\_ ba - by My onc and on - ly\_\_ ba - by

Tpt.

Tbn.

Ten. Sax.

Bass Sax.

Vln. 1

Vln. 2

Vla.

Vc.

Pno.

C<sup>tr</sup>m A B

E. Gtr.

E. Bass

Mrs.

Cast.

Tamb.

H.C.

Dr.

marcato

marcato

3

3

## Appendix D - Walking In The Rain transcription


 ♩=107  
 INTRO

Barry Mann, Phil Spector, Cynthia Weil  
Arrangements: Hans Nieuwenhuijsen

Lead Voc. *mf*

Backing Voc. *mf* Doo - doo - doo - doo - doo - doo Doo -

Piano *mp* Bb Cm F7 Bb

Harpsichord *mf* Bb Cm F7 Bb

Transistor Organ *mp* Bb Cm F7 Bb

Electric Guitar *mp* Bb Cm F7 Bb

2x Acoustic Guitar *mf* Bb Bb Cm F7 Bb

Electric & Upright Bass *mp* ♩=107

2x Trumpet in Bb

1x Alto Saxophone

2x Tenor Saxophone

Trombone1

Trombone2

Clockenspiel *Clockenspiel*

Tubular Bells *Tub Bells*

2xSleigh Bells *mf* Bells

Woodblock

Drum Set

6

**A**

Lead

I want him and I need him

Backing

doo - doo - doo - doo - doo

Doo - doo - doo - doo - doo

Pno.

Cm F7 Bb Cm

Hpsd.

Cm F7 Bb Cm

Organ

Cm F7 Bb Cm

E. Gtr.

Bb Cm F7 Bb Bb Cm

A. Guitar

Bb Cm F7 Bb Bb Cm

Bass

**A**

Tpt.

Alto Sax.

Ten. Sax.

Tbn.

Tbn.

Tub. B.

S.Bells

Dr.

12

Lead

and some day some way wo oo ho-oo ho oo\_ I'll meet him He'll be kind of shy\_

Backing

Doo - doo - doo - doo- doo - doo He'll

Pno.

F7 Bb Cm F7 Eb

Hpsd.

F7 Bb Cm F7 Eb

Organ

F7 Bb Cm F7 Cm/Eb

E. Gtr.

F7 Bb Cm F7 Eb

A. Guitar

F7 Bb Bb Cm F7 Eb

Bass

Tpt.

Alto Sax.

Ten. Sax.

Tbn.

Tbn.

Tub. B.

S. Bells

Dr.

*mp*

*mf*

18

Lead

but real good lookin' too And i'll be cer tain he's my guy by the things he'll

Backing

Bb but real good lookin' too Bb And Eb be cer tain Bb he's my guy Ohh Eb

Pno.

Bb Eb Bb Eb Bb Eb

Hpsd.

Bb Cm/Eb Bb Cm/Eb Bb Cm/Eb

Organ

Bb Eb Bb Eb Bb Eb

E. Gtr.

Bb Eb Bb Eb Bb Eb

A. Guitar

Bb Eb Bb Eb Bb Eb

Bass

Tpt.

Alto Sax.

Ten. Sax.

Tbn.

Tbn.

Tub. B.

S.Bells

Dr.



24 **B**

Lead  
like to do Like wal-king in the rain And wish-ing on the

Backing  
Ah ha ha ha Like wal-king in the rain

Pno.  
F Bb F/A Eb/G F Bb F/A Eb/G F

Hpsd.  
F Bb F/A Eb/G F Bb F/A Eb/G F

Organ  
F Bb F/A Eb/G F Bb F/A Eb/G F

E. Gtr.  
F Bb F/A Eb/G F Bb F/A Eb/G F

A. Guitar  
F Bb F/A Eb/G F Bb F/A Eb/G F

Bass  
**B'**

Tpt.  
*f*

Alto Sax.  
*f*

Ten. Sax.  
*f*

Tbn.  
*f*

Tbn.  
*f*

Tub. B.  
*mf*  
*f*

S.Bells

Dr.

29 C

Lead  
stars up a bove and be-ing so in love Oo - hoo When he's near

Backing  
And wish-ing on the sta - ars Doo - doo - doo - doo - doo

Pno.  
*mp*

Hpsd.  
*mp*

Organ  
*mp*

E. Gtr.

A. Guitar

Bass  
C *mf*

Tpt.  
*mp*

Alto Sax.

Ten. Sax.

Tbn.  
*mp*

Tbn.  
*mp*

Tub. B.

S.Bells

Dr.

35

Lead

me\_ I'll kiss him\_ And when he leaves me woo\_ oo ho-o-ho-o I'll

Backing

Doo - doo - doo - doo - doo - doo Doo - doo - doo - doo - doo -

Pno.

Bb Cm F7 Bb

Hpsd.

Bb Cm F7 Bb

Organ

Bb Cm F7 Bb

E. Gtr.

Bb Bb Cm F7 Bb Bb

A. Guitar

Bb Bb Cm F7 Bb Bb

Bass

Tpt.

*mp*

Alto Sax.

Ten. Sax.

Tbn.

*mf*

Tbn.

*mf*

Tub. B.

*mf*

S.Bells

Dr.

41

Lead

miss him\_\_\_\_\_ Though\_\_\_\_\_ some times we'll fight\_\_\_\_\_ And I won't real ly\_\_\_\_\_ care\_\_\_\_\_ And

Backing

dbb Cm F<sup>7</sup> Eb some times we'll fight\_\_\_\_\_ Bb I won't real ly\_\_\_\_\_ care\_\_\_\_\_ Bb

Pno.

Cm F<sup>7</sup> Eb Bb Eb Bb

Hpsd.

Cm F<sup>7</sup> Cm/Eb Bb Cm/Eb Bb

Organ

dbb Eb Bb Eb Bb

E. Gtr.

Cm F<sup>7</sup> Eb Bb Eb Bb

A. Guitar

Bass

Tpt.

Alto Sax.

Ten. Sax.

Tbn.

Tbn.

Tub. B.

S.Bells

Dr.

47 D

Lead  
i'll know it's gon na be all\_right cause we've got so much we share Like wal-king in the

Backing  
i'll know it's gon na be all\_right cause we've got Ohh Ah Bb Bb/A ha ha F

Pno.  
*f*

Hpsd.  
Eb Bb Eb F Bb F/A Eb/G F

Organ  
Cm/Eb Bb Cm/Eb F Bb F/A Eb/G F

E. Gtr.  
Eb Bb Eb Bb Bb F/A Eb/G F

A. Guitar  
Eb Bb Eb F Bb F/A Eb/G F

Bass  
D

Tpt.  
*f*

Alto Sax.  
*f*

Ten. Sax.  
*mp* *f*

Tbn.  
*mp* *f*

Tbn.  
*mp* *f*

Tub. B.  
*mf*

S.Bells

Dr.

53

Lead

rain And wish ing on the stars up a bove and be-ing so in love

Backing

Like wal king in the rai - ain And wish ing on the sta - ars

Pno.

Bb F/A Eb/G F Bb Gm7 Eb F Bb

Hpsd.

Bb F/A Eb/G F Bb Gm7 Eb F Bb

Organ

Bb F/A Eb/G F Bb Gm7 Eb F Bb

E. Gtr.

Bb F/A Eb/G F Bb Gm7 Eb F Bb

A. Guitar

Bb F/A Eb/G F Bb Gm7 Eb F Bb

Bass

*mp*

Tpt.

*mp*

Alto Sax.

Ten. Sax.

Tbn.

*mp*

Tbn.

*mp*

Tub. B.

S.Bells

Dr.

*shaker*

59 **E**

Lead

No\_no he'll nev er do No\_it\_ is n't\_him too They would nc - ver no they'd nev - cr

Backing

Jo - hon-ny? Bo - ho-by? nc - ver nev - cr

Pno.

Cm Bb Cm

Hpsd.

Cm Bb Cm

Organ

Cm Bb Cm

E. Gtr.

Cm Bb Cm

A. Guitar

Bass

**E**

Tpt.

Alto Sax.

Ten. Sax.

Tbn.

Tbn.

Tub. B.

S.Bells

Dr.

65 **F**

Lead  
ne - ver cv - er do wal-king in the rain And wish-ing on the

Backing  
ne - ver c - ver Ne-ver ne-ver c - ver Ah ha ha ha Like wal-king in the rai - ain

Pno.  
Bb F/A Eb/G F Bb F/A Eb/G F

Hpsd.  
Bb F/A Eb/G F Bb F/A Eb/G F

Organ  
Bb F/A Eb/G F Bb F/A Eb/G F

E. Gtr.

A. Guitar  
Bb F/A Eb/G F Bb F/A Eb/G F

Bass  
**F**

Tpt.  
f

Alto Sax.  
f

Ten. Sax.  
f

Tbn.  
f

Tbn.  
f

Tub. B.

S.Bells

Dr.



71

Lead

stars up a - bove and be - ing so in love

Backing

And wish - ing on the sta - - ars

Pno.

Bb Gm<sup>7</sup> Eb F Bb

Hpsd.

Bb Gm<sup>7</sup> Eb F Bb

Organ

Bb Gm<sup>7</sup> Eb F Bb

E. Gtr.

Bb Gm<sup>7</sup> Eb Bb

A. Guitar

Bb Gm<sup>7</sup> Eb Bb

Bass

Tpt.

mp

Alto Sax.

Ten. Sax.

Tbn.

mf

Tbn.

mf

Tub. B.

S.Bells

Dr.

74 **G**

Lead *rep and fade.*

Backing *rep and fade.*

Pno. *mf* Cm F7 Bb *rep and fade.*

Hpsd. Cm F7 Bb *rep and fade.*

Organ *rep and fade.*

E. Gtr. *rep and fade.*

A. Guitar Bb Cm F7 Bb *rep and fade.*

Bass *rep and fade.*

Tpt. *mp* *rep and fade.*

Alto Sax. *rep and fade.*

Ten. Sax. *rep and fade.*

Tbn. *mp* *rep and fade.*

Tbn. *mp* *rep and fade.*

Tub. B. *rep and fade.*

S.Bells *rep and fade.*

Dr. *rep and fade.*